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NOTE

From: General Secretariat of the Council

To: Delegations

Subject: ClientEarth: request for internal review under Title IV of the Aarhus Regulation of Council Regulation (EU) 2022/515 of 31 March 2022 amending Council Regulation (EU) 2022/109 fixing for 2022 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in certain non-Union waters

Delegations will find attached Annexes XI-XIII of the document on the above-mentioned subject, as received from ClientEarth.

1.1.1 Advice on fishing opportunities

ICES approach to advice on fishing opportunities

ICES approach to advice on fishing opportunities integrates the precautionary approach with the objective of achieving maximum sustainable yield (MSY), unless otherwise requested. The aim is, in accordance with the aggregate of international guidelines, to inform policies for high, long-term yields while maintaining productive fish stocks in marine ecosystems that meet expected environmental standards (e.g. good environmental status [GES] in the EU).

Annex 2 of the UN Fish Stocks Agreement (UN, 1995) contains guidelines for applying a precautionary approach within an MSY framework. In accordance with a precautionary approach, populations need to be maintained within safe biological limits to make MSY possible. Within safe biological limits, however, an MSY approach is necessary to maximize long-term yields. All ICES advice is consistent with the precautionary approach, which is a necessary but not a sufficient condition for MSY.

MSY is a broad conceptual objective aimed at achieving the highest yield over the long term. It is non-specific with respect to: (a) the biological unit to which it is applied; (b) the models used to provide scientific advice; (c) the definition of yields; and (d) the management methods used to achieve MSY. ICES interpretation of MSY is maximizing the average long-term yield from a given fish stock while maintaining the stock as productive. ICES considers the yield to be maximized as the part of the catch that is landed, measured in weight. Depending on regulations for the individual stock, this may be calculated relative to the landed catch above a prescribed minimum size.

Many of the models (mathematical and conceptual) used to estimate MSY and associated parameters typically assume that factors not explicitly included in the models either remain constant or vary around a historical long-term mean. Marine ecosystems are dynamic, however, and fish stocks will change not only in response to fishing patterns and fishing pressures but also to changes in their prey or their predators as well as to changes in the climate. ICES therefore considers MSY reference points to be valid only in the short and medium term (generally up to 5–10 years). MSY reference points should be subject to regular reviews and modified according to new information or process understanding.

To support the stock-by-stock management system, ICES provides advice on fishing opportunities and stock status for individual stocks. For some stocks ICES is only requested to advise on its status and not on fishing opportunities. In addition to the single-stock advice, ICES also provides mixed-fisheries considerations, fisheries overviews, and ecosystem overviews. These encapsulate the technical and biological interactions between stocks at an ecoregion scale.

For the purposes of identifying the advice rule to be applied when giving advice on fishing opportunities, ICES classifies stocks into six main categories on the basis of available knowledge:

Category 1 – *Stocks with quantitative assessments.* Includes stocks with full analytical assessments and forecasts that are either age-/length-structured or based on production models.

Category 2 – *Stocks with analytical assessments and forecasts that are only treated qualitatively.* Includes stocks with quantitative assessments and forecasts which, for a variety of reasons, are considered indicative of trends in fishing mortality, recruitment, and biomass.

Category 3 – *Stocks for which survey-based assessments or exploratory assessments indicate trends.* Includes stocks for which survey, trends-based assessment, or other indices are available that provide reliable indications of trends in stock metrics such as total mortality, recruitment, and biomass.

Category 4 – *Nephrops stocks where information on possible abundance can be inferred* and stocks for which a reliable time-series of catch can be used to approximate MSY. This is where there are reasonable scientific grounds to use life-history and density information from functional units to provide advice.

Category 5 – *Stocks for which either only data on landings or a short time-series of catch are available.*

Category 6 –Stocks for which there are negligible landings and stocks caught in minor amounts as bycatch. Includes stocks where landings are negligible in comparison to discards as well as stocks that are primarily caught as bycatch species in other targeted fisheries.

For category 1 and 2 stocks, ICES provides advice when requested in accordance with agreed management plans or strategies evaluated to be consistent with the precautionary approach (Figure 1). If such plans or strategies are not agreed upon by the relevant management bodies (as indicated by a registered disagreement in advance from a relevant management body, to the use of the plan as the basis of advice)* or have been evaluated by ICES as not being precautionary, ICES will give advice on the basis of ICES MSY approach.

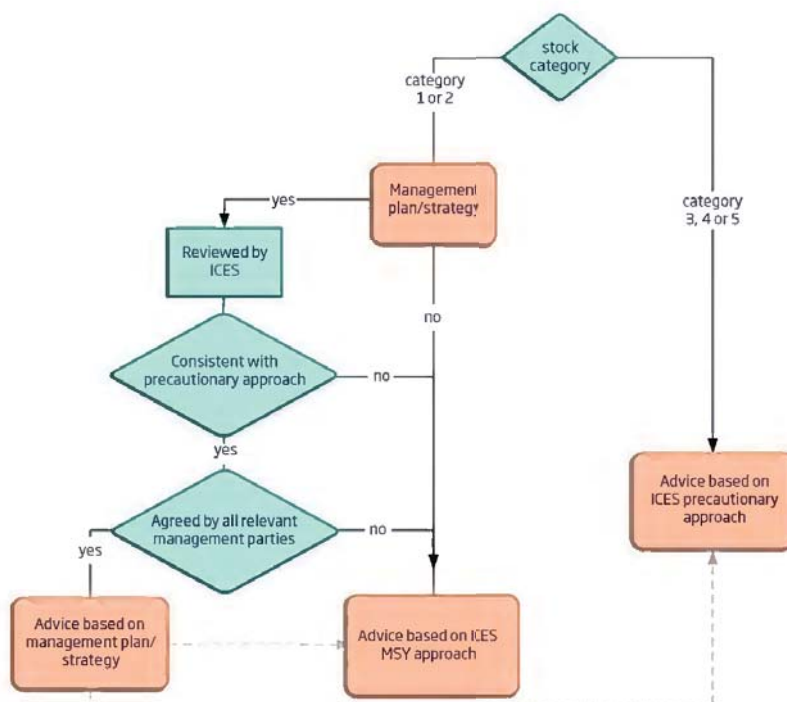


Figure 1 Flow diagram showing the basis of ICES advice. The broken grey lines indicate that sometimes the advice in management plans is consistent with ICES MSY approach or the precautionary approach.

As the knowledge available is insufficient to apply ICES MSY approach to category 3–6 stocks, the advice is based on the precautionary approach. ICES has, however, developed approaches to determine proxies for MSY reference points for some stocks in categories 3 and 4. Based on these proxies, ICES will assess both the state and exploitation of the stocks relative to MSY criteria.

Most of the fish and shellfish fisheries advised on by ICES are managed by total allowable catches (TACs) and are increasingly subject to discard bans or landing obligation (LO) regulations. Different regulations are in place within the ICES area, and different regulations may relate to different management areas. For EU waters, an LO was introduced in 2015 and was fully in place by 2020. Following the introduction of the LO, catches may be split into three categories: reported landings at or above minimum conservation reference size (MCRS), reported landings below MCRS, and discards. Discards may also be split into dead discards and live discards, based on information on survival rates. ICES discard estimates are normally based on data from observer schemes and may include discards which, in accordance with the landing

* Version 2: Text inserted – (as indicated by a registered disagreement in advance from a relevant management body, to use of the plan as the basis of advice).

obligations/discard bans, should be landed. Estimates of discarding not observed are often imputed based on observations from similar métiers, seasons, or areas.

Generally, ICES assumes that the current fishing pattern and discarding practices are likely to remain unchanged over the forecast period. ICES may split the advised catch and other catch scenarios into the three categories above (or four categories if a fraction of discards is assumed to survive).

If the fishing pattern or/and ratio between landings and discards change(s) in the forecast period, due to changes in compliance with the landing obligation or discard ban, ICES will not distinguish between landings below MCRS/catching size and discards in the catch scenarios. Those two components will instead be combined into one category: projected discards. Landings above MCRS/catching size may, in these cases, be termed ‘projected landings’ as illustrated in Figure 2.

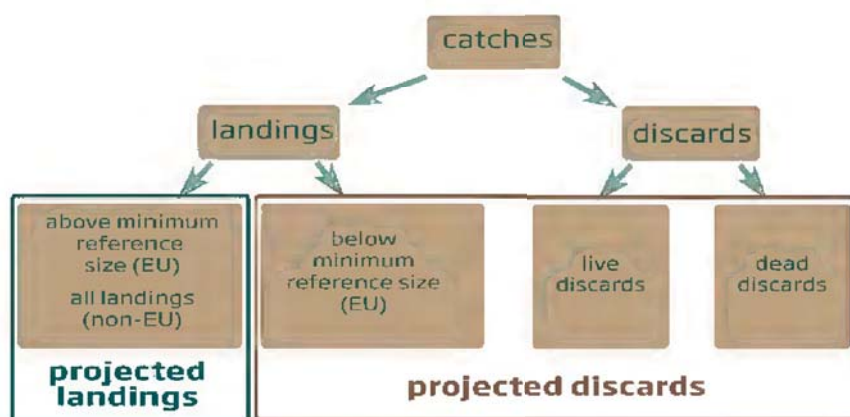


Figure 2 Catch categories used by ICES in stock assessments and forecasts. For an explanation of these categories, see the text above.

General approach

Fisheries directly affect fish stocks through catches. Fishing mortality (F) is a measure of fishing pressure; it is the rate derived from the proportion in numbers of fish in a year class taken by fisheries during one year. The fishing mortality referred to in ICES advice is estimated as the average F over those ages which dominate in the catches. For some stocks, such as Icelandic cod, saithe, and most *Nephrops* stocks, ICES uses harvest rates (HRs) instead of fishing mortality. The harvest rate is defined as the fraction of a reference biomass or abundance that is caught by the fishery during a year.

The production in a fish stock can be highly variable. It is related to recruitment, stock size (often expressed as spawning-stock biomass [SSB]), and the size structure in the stock; these in turn also depend on the fishing mortality and fishing patterns.

Surplus production of a stock is the catch that can be harvested without changing the average production in the long term. For a given fishing pattern there is a level of fishing mortality that, in the long term, will generate the highest surplus production. This peak of surplus production (above minimum conservation/reference size) is the MSY, and the fishing mortality generating this peak is F_{MSY} .

Fishing mortality is the only variable that can be directly controlled by fisheries management. Fisheries management cannot directly control the stock size only influence it through overall fishing mortality. Stock size is also subject to natural variability that on a year-to-year basis can exceed the influence of fishing. MSY refers to a long-term average. A management strategy that harvests variable yields in response to the natural variability in stock size will, on average, give yields closer to the long-term MSY than a strategy operating with the maximum constant yield that could be taken sustainably.

Due to the variability in stock size, there may be situations where the spawning stock is so low that reproduction is at significant risk of being impaired. A precautionary approach implies that fisheries management in such situations should be more cautious. For stocks where quantitative information is available, the reference point B_{lim} may be identified as the stock size below which there is a high risk of reduced recruitment (Figure 3). A precautionary safety margin incorporating the uncertainty in ICES stock estimates leads to the precautionary reference point B_{pa} , which is a biomass reference point designed to have a low probability of being below B_{lim} . When the spawning-stock size is estimated to be above B_{pa} , the probability of impaired recruitment is expected to be low.

For short-lived species, for which recruitment is highly variable, the biomass can fluctuate widely between years. A precautionary approach in this situation implies that a minimum stock size, $B_{escapement}$, should remain in the sea every year after fishing to ensure future recruitment.

F_{lim} is the fishing mortality which in the long term will result in an average stock size at B_{lim} . Fishing at levels above F_{lim} will result in a decline in the stock to levels below B_{lim} . ICES also defines F_{pa} , which is the fishing mortality that results in no more than 5% probability of bringing the spawning stock to below B_{lim} in the long term.

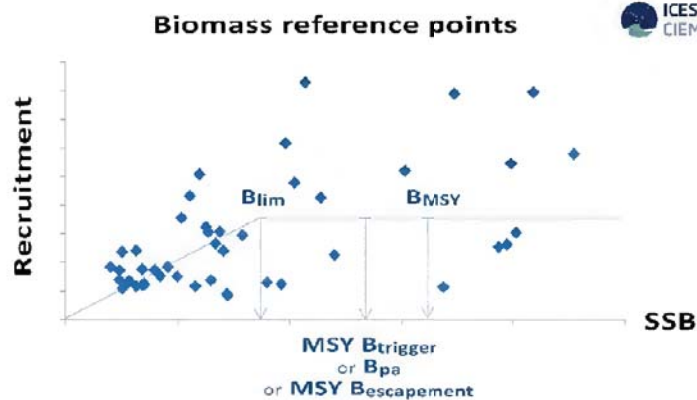


Figure 3 Illustration of biomass-based biological reference points. B_{lim} and B_{pa} are precautionary reference points related to the risk of impaired reproductive capacity, while $MSY B_{escapement}$ (often equal to B_{pa}) is used in the advice framework for short-lived species. $MSY B_{trigger}$ is the parameter in ICES MSY framework which triggers advice on reduced fishing mortality relative to F_{MSY} . B_{MSY} is the expected average biomass if the stock is exploited at F_{MSY} . The diamond shapes in the plot show the variable values of recruitment versus SSB that have been observed over the years. Recruitment can be seen to be generally lower when SSB is below B_{lim} .

Some fish eat other fish, which means growth in numbers for the predator and mortality for the prey; fish populations also compete for food or habitat. Thus the size and productivity of a fish stock may depend on the state of other stocks, as well as on its own abundance. It also means that as a population of fish increases, growth and mortality for that species cannot be expected to remain constant, as there will be increasing competition for food and habitat within that population.

ICES incorporates such multispecies interaction considerations into the single-species framework in the Baltic Sea, the Barents Sea, and the North Sea. This is done by applying natural mortality and growth rates derived from models of species interactions, using size, age, and stomach data for several species. ICES routinely incorporates short-term changes in growth and maturation into short-term projections to account for competition and food supply. ICES also expects to periodically update MSY reference points (typically as part of the benchmark process) to ensure they reflect current biological parameters and dynamics.

Long-lived category 1 and 2 stocks

For long-lived category 1 and 2 stocks, ICES bases its MSY approach on attaining a fishing mortality rate of no more than F_{MSY} while maintaining the stock above B_{lim} with at least 95% probability.

Under this approach, ICES uses the fishing mortality and biomass reference points F_{MSY} and $MSY B_{trigger}$. F_{MSY} is estimated as the fishing mortality with a given fishing pattern and current environmental conditions that gives the long-term maximum yield. To ensure that fishing at F_{MSY} is sustainable, F_{MSY} must not be above F_{pa} . The best estimate of F_{pa} is considered to be the fishing mortality that results in a less than 5% probability of $SSB < B_{lim}$ in the long term. This is appropriate, since a precautionary approach is a necessary boundary to ensure sustainability, even though it is in itself not a sufficient condition for achieving the MSY implied by the MSY framework.

$MSY B_{trigger}$ is considered the lower bound of SSB fluctuation (fifth percentile of B_{MSY}) when fished at F_{MSY} and is used in ICES advice rule to trigger a cautious response. The cautious response, in cases where the spawning stock falls below $MSY B_{trigger}$, is to reduce fishing mortality in order to allow a stock to rebuild to levels capable of producing MSY. The reduction in fishing mortality is proportional to the ratio between the size of the spawning stock and $MSY B_{trigger}$ (SSB is estimated at spawning time [in the first year of the forecast]).

The advice rule leads to catch advice corresponding to a fishing mortality of:

- 1) $F = F_{MSY}$ when SSB is at or above $MSY B_{trigger}$
- 2) $F = F_{MSY} \times SSB/MSY B_{trigger}$ when the stock is below $MSY B_{trigger}$ and above B_{lim}
- 3) If the F following from applying rule 2 is insufficient to bring the stock above B_{lim} in the short term, ICES advice will be based on bringing the stock above B_{lim} at the end of the projection year. If there is no F that will bring the stock above B_{lim} at the end of the projection year or when the forecast is highly sensitive to assumptions (e.g. incoming recruitment), ICES will advise zero catch based on precautionary considerations until the SSB is above B_{lim} with high probability.

Conceptually, SSB in the advice rule is the estimated spawning-stock size at the beginning of the year to which the advice applies (advice year), or at spawning time in the year before the advice year. For example, for an assessment performed in 2020 using data through 2019, the reference spawning-stock size for most stocks will be the projected size at the beginning of 2021.

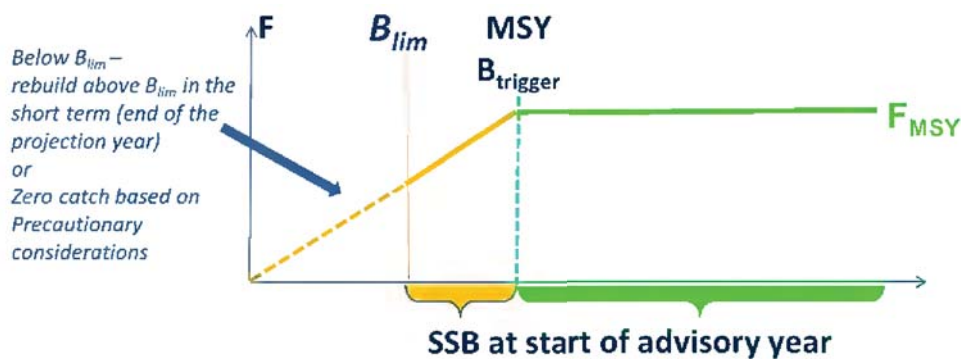


Figure 4 ICES advice rule for category 1–2 stocks.

The MSY approach does not use a B_{MSY} estimate. B_{MSY} is a notional value around which stock size fluctuates when fishing at F_{MSY} . B_{MSY} strongly depends on the interactions between the fish stock and the environment it lives in, including biological interactions between different species. Historical stock size trends may not be informative about B_{MSY} (e.g. when F has exceeded F_{MSY} for many years or when current ecosystem conditions and spatial stock structure are, or could be, substantially different from those in the past). Estimates of B_{MSY} are very sensitive to the assumption that all future factors that influence fisheries productivity remain unchanged in the future.

Determination of $MSY B_{trigger}$ requires contemporary data that identify the normal range of fluctuations in biomass when stocks are fished at F_{MSY} . If the observation on fluctuation in biomass is insufficient to estimate $MSY B_{trigger}$, the reference point is normally set at B_{p0} (if this reference point is available). If sufficient observations of SSB fluctuations associated with fishing around F_{MSY} are available, the $MSY B_{trigger}$ should be re-estimated to correspond to the fifth percentile of B_{MSY} when fishing at F_{MSY} .

ICES has provided advice on plausible values around F_{MSY} (F_{MSY} range) for a number of stocks in response to a request by the EU. The F_{MSY} ranges [$F_{MSY lower}$, $F_{MSY upper}$] are derived to deliver no more than a 5% reduction in long-term yield, compared with the MSY obtained by fishing at F_{MSY} in the long term. To be consistent with ICES precautionary approach, F_{MSY} or $F_{MSY upper}$ is capped so that the probability of $SSB < B_{lim}$ is no more than 5% in any single year.

Most fisheries catch a mixture of species; it is not entirely possible to control either which species those are or how much of each species is caught. For stocks exploited by mixed-species fisheries, it may not be possible to achieve the single-stock MSY catch advice for all the stocks simultaneously. Either the advised catches for some stocks will be exceeded in trying to catch the TACs of other stocks, or the TACs for some stocks will not be caught in order to prevent overshooting the TACs of other stocks. ICES has developed a mixed-species fisheries forecast to address this; for the main demersal stocks in the

North Sea, Bay of Biscay, Iberian waters and Celtic Sea, ICES provides a range of mixed fisheries scenarios to the trade-offs between the different scenarios.

Short-lived category 1 and 2 stocks

The future size of a stock of short-lived species is very sensitive to recruitment because of the small number of age groups present in the natural population. Incoming recruitment is often the main, or only, component of the fishable stock. Care must therefore be taken to ensure that the spawning-stock size is above levels where recruitment is impaired, as the future of the stock is highly dependent on annual recruitment.

For most stocks of short-lived species, similarly to the long-lived species, the ICES MSY approach is aimed at providing MSY while ensuring that the probability of the stock being below B_{lim} in any single year is no more than 5%. For some stocks, advice is given based on agreed management plans that have been shown to be precautionary. For some other stocks, ICES uses two reference points: $MSY_{B_{escapement}}$ (see Figure 3) and F_{cap} . $MSY_{B_{escapement}}$ is estimated to be robust against low SSB and includes a biomass buffer to account for uncertainty in both the assessment and catch advice. In some cases, however, defining $MSY_{B_{escapement}}$ is not necessary; this is because the escapement strategy uses a 95% probability of being above B_{lim} directly.

For many of these stocks of short-lived species, F_{cap} is defined to limit exploitation rates when biomass is high. A large stock is usually estimated with greater uncertainty; when the catch is taken, for example, the uncertainty in the escapement biomass is greater. By capping the F , the escapement biomass is increased in proportion to stock size, maintaining a high probability of achieving the minimum amount of biomass left to spawn. In some cases (such as following high recruitment), this will result in a median SSB above $MSY_{B_{escapement}}$ in the long term.

The advised yearly catches correspond to the estimated stock biomass in excess of the $MSY_{B_{escapement}}$ but are constrained to allow a fishing mortality no higher than F_{cap} . In the absence of agreed management plans or a defined F_{cap} , the advice is based on the MSY or precautionary approaches.

For some short-lived species, assessments are so sensitive to incoming recruitment that the amount of biomass in excess of the target escapement cannot be reliably estimated until data on the incoming year class are available. For most of the stocks concerned, such data are obtained just before the fishery starts (or during the fishing year). The advice on fishing opportunities may therefore only be given either directly prior to the start of the fishing season or after the fisheries has started.

Category 3–6 stocks

A substantial number of the stocks for which ICES provides advice have no population estimates from which catch options can be derived using the MSY framework. ICES has therefore developed a precautionary framework for quantitative advice regarding such stocks.

The overall aim of the approach for these stocks is to ensure that the advised catch is sustainable. The underlying principles of the approach are that (a) the best available information should be used and (b) a precautionary approach should be followed. The latter implies that as information becomes increasingly limited, more conservative reference points should be used, and a further margin of precaution should be adopted when there is limited knowledge of the stock status. The margin of risk tolerance is a management prerogative, but in the absence of any proposal by managers, ICES applies the values given below.

A precautionary approach for category 3–6 stocks involves a framework with the following considerations regarding uncertainty and precaution being applied in sequence:

1. The methodologies used to estimate trends in these stocks may be more susceptible to noise due to limited data or knowledge. Consequently, any change in the perception of stock trends (based on available information such as trends in biomass index or assessments considered representative of trends only) is capped by a change limit of $\pm 20\%$ (uncertainty cap). This cap is generally applied to the previous catch advice or, if it is the first year of application, to the average of recent catches.

2. An additional precautionary margin (a precautionary buffer [PA buffer]) with decreasing knowledge about the stock status may then be applied, subject to the following:
 - a. In cases where exploitation and stock status have been identified through MSY reference points or qualitative evaluation the diagram below (boxes 1 to 5) is used to determine whether or not the precautionary buffer should be applied.
 - b. In cases where exploitation and/or stock status are unknown (boxes 6 to 9 in diagram below) the PA buffer should be applied unless the exceptions in the diagram below for **both** exploitation **and** stock status are met and documented.
 - c. The decision on whether or not to apply the PA buffer has to be re-considered every three years.

Table 1 Framework for application of precautionary approach for ICES category 3–6 stocks

		Stock size status or qualitative evaluation [^]		
		✗ or ✗	✓ or ✓	?
Fishing pressure status or qualitative evaluation [^]	✗ Or ✗	1 Apply PA buffer	4 Apply PA buffer	7 Apply PA buffer
	✓ or ✓	2 Apply PA buffer	5 Do not apply PA buffer	8 Consider applying PA buffer Apply Do not apply if: a) consistent* increase in stock size index or b) significant increase in stock size index ratio** (> 1.5)
	?	3 Apply PA buffer	6 Consider applying PA buffer: Apply Do not apply if: effort consistently* decreases or has remained stable	9 Consider applying PA buffer: Apply Do not apply if: a) consistent increase in stock size index or b) significant increase in stock size index ratio** (> 1.5) AND effort consistently* decreases or has remained stable

[^] The qualitative evaluation (e.g. ✗ or ✓) refers to the stock status.
 * Consistent increase/decrease should be determined on the basis of a significant [Mann-Kendall test](#) using the last ten years of the stock index or effort data; the term 'consistent' replaces the term 'continuous', which allows for some year-to-year declines.
 ** "Index ratio" means the x latest index values compared with the y preceding values. Most often this will be the "2 over 3" stock size indicator ratio.

This framework with an uncertainty cap and application of the PA buffer was simulation tested for a range of stocks and in general was found to be appropriate (ICES, 2017). When stock trends are taken into account and combined with the considerations above, the resulting advice when using the same index of stock change may show a maximum decrease of 36% and a maximum increase of 20% over the previous advice. The advice is applicable to a time-frame that is compatible with a measurable response in the metrics used as the basis for the advice. In cases where the least amount of information is available, including cases where the 20% PA buffer has been applied, ICES considers the advice valid for a fixed and determined period. As an example, that period could be two years, unless important new knowledge emerges regarding a stock that justifies an interim revision of the advice.

The advice rule used to provide quantitative advice on fishing possibilities depends on the information available, and ICES has developed separate advice rules for each of the stock categories listed in this section and the sections above.

Category 3. Stocks for which survey-based assessments indicate trends. The most common approach for providing advice on fishing opportunities for the coming year(s) is based on the recent advised catch (or landings), adjusted for the change in stock-size index for the two most recent values relative to the three preceding values. Other reference years may be used, based on the level of stock biology knowledge (e.g. species with a relatively high longevity) or the quality of the data. Other approaches for providing precautionary advice are also available (ICES, 2012); these include providing zero catch or recovery plan advice for stocks with extremely low biomass relative to previous estimates.

Category 4. Stocks for which reliable catch data are available. The approach is to use catch information to evaluate whether the stock is fished sustainably, or whether a reduction in catch is required to achieve sustainability. Decreases or increases in catch advice are incremental and slow.

Categories 5 and 6. Stocks for which there are landings only or negligible landings and stocks caught in minor amounts as bycatch. In situations where only landings/catch data are available and no life-history or fishery information can be gleaned from similar stocks or species in the ecoregion or beyond, ICES will normally provide advice on the basis of previous catches/landings, applying the PA buffer. If catches have declined significantly over a period of time and this could represent a reduction in stock size, ICES may advise zero catch or the implementation of a management strategy.

ICES provides a framework for stock status classification relative to MSY proxies for stocks in categories 3 and 4.

A stock is classified on the basis of two MSY indicators: one for exploitation and a second for biomass. Whenever possible, the indicators are designated either green (exploitation is at or below F_{MSY} , and biomass is at or above $MSY B_{trigger}$) or red (exploitation is above the F_{MSY} , and biomass is below the $MSY B_{trigger}$). When no determination can be made, the indicators are designated as unknown.

Given the uncertainties in data and knowledge for stocks in these categories, ICES is not currently using these methods to provide quantitative estimates of the distance of F from F_{MSY} or of B from $MSY B_{trigger}$. While the classification of stocks is considered the best possible at the time of evaluation, revisions may occur as more information becomes available for these stocks and the methods and knowledge are further developed. The framework is expected to evolve over time, as the methods are further developed and validated.

Sources and references

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp. <https://doi.org/10.17895/ices.pub.5322>.

ICES. 2017. Report of the ICES Workshop on the Development of Quantitative Assessment Methodologies based on Life-history traits, exploitation characteristics, and other relevant parameters for stocks in categories 3–6 (WKLIFEVI), 3–7 October 2016, Lisbon, Portugal. ICES CM 2016/ACOM:59. 106 pp.

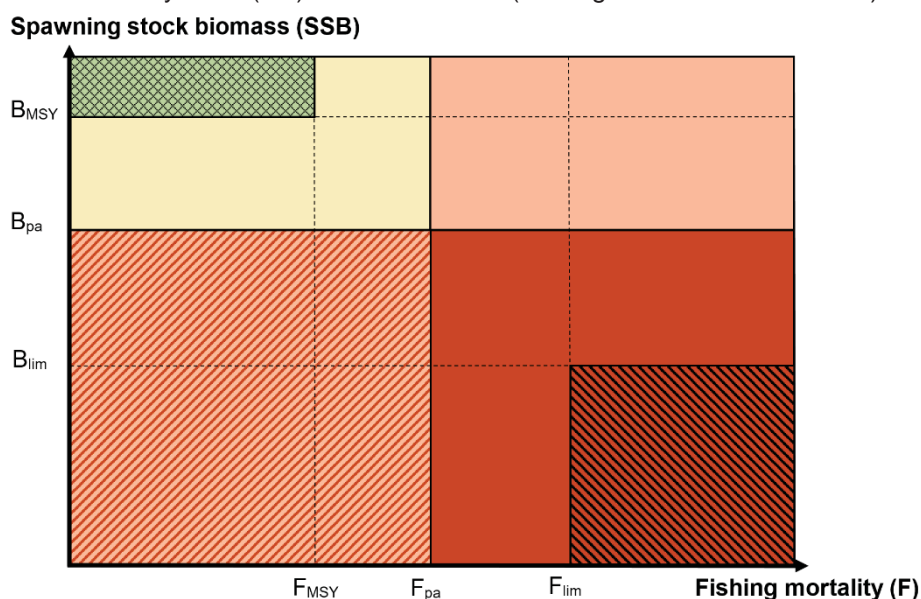
Recommended citation: ICES. 2021. Advice on fishing opportunities. In Report of the ICES Advisory Committee, 2021. ICES Advice 2021, section 1.1.1. <https://doi.org/10.17895/ices.advice.7720>.

Annex 12 - Overview of biological reference points¹

The two main biological indicators of the exploitation and state of fish stocks assessed and presented in the ICES advice are:

1. the mortality caused by fishing, 'fishing mortality' (F), and
2. the size of the stock, 'spawning stock biomass' (SSB or B).

F is a measure of the fishing pressure, and SSB (or B) refers to adult fish which can contribute to the reproduction of the stock. In order to assess whether the stock is in a healthy, productive state and whether it is being exploited sustainably, different numerical reference points are established to measure where F and SSB are in relation to where you do (not) want them to be (see Figure 1 for an illustration).









-  = Both biomass (SSB) and fishing mortality (F) are in line with the CFP's Article 2(2) MSY objective (i.e. stock is above a 'biomass level[...] capable of producing the MSY' (B_{MSY}) and fishing pressure is in line with (i.e. at or below) the 'MSY exploitation rate' (F_{MSY})).
-  = The stock is within safe biological limits (i.e. $SSB \geq B_{pa}$ and $F \leq F_{pa}$), i.e. the risk of the stock falling below B_{lim} (where reproduction is impaired), or F exceeding F_{lim} is low.
-  = The stock is outside safe biological limits, because fishing mortality is too high ($F > F_{pa}$), meaning the stock is exploited unsustainably, even though the biomass is still above B_{pa} .
-  = The stock is outside safe biological limits, because the biomass is too low ($SSB < B_{pa}$), meaning the stock is at a higher risk of impaired reproduction, even though fishing mortality is below F_{pa} .
-  = The stock is outside safe biological limits, because the biomass is too low ($SSB < B_{pa}$) **and** fishing mortality is too high ($F > F_{pa}$), meaning there is an increased risk of impaired reproduction as well as of the stock declining further.
-  = The stock is far from safe biological limits, because the biomass is so low that reproduction is likely to be impaired ($SSB < B_{lim}$) and fishing mortality is unsustainably high ($F > F_{lim}$), maintaining the stock at this low level.

Figure 1 This is a schematic visualisation of biological reference points used in fisheries science, for example by ICES, when providing scientific catch advice. Note that the distances between the points and the area-sizes displayed are not intended to be proportionate. For reasons of simplicity, MSY $B_{trigger}$ (the lower boundary of the fluctuation around B_{MSY} at which point action must be taken) is not depicted, but it would be found between B_{pa} and B_{MSY} . Note that the graph is open-ended on the right and at the top.

¹ This document is adapted from ClientEarth (2020). Linking the law to biological reference points used in scientific advice when setting Total Allowable Catches (TACs). December 2020. <https://www.clientearth.org/latest/documents/linking-the-law-to-biological-reference-points-used-in-scientific-advice-when-setting-total-allowable-catches-tacs/>

ICES uses two 'limit' reference points (F_{lim} and B_{lim}) to mark the critical boundaries outside of which the stock is at a high risk of impaired reproduction and thus potential collapse. So when F is higher than F_{lim} , and/or SSB is below B_{lim} , the stock is in a very bad, risky state.

Precautionary ('PA') reference points (F_{pa} and B_{pa}) mark the 'safe biological limits'.² So if F is smaller than F_{pa} and SSB is above B_{pa} , the stock is not at immediate risk of impaired reproduction or collapse, though not at its most productive level either. These PA reference points are formulated in the face of uncertainty about the true stock size. When F is smaller than F_{pa} and SSB is above B_{pa} , there is a low probability of the stock actually being below B_{lim} .

MSY reference points (F_{MSY} and B_{MSY}) refer to the fishing mortality and biomass expected to deliver MSY. '*ICES interpretation of MSY is maximizing the average long-term yield from a given stock while maintaining productive fish stocks*'.³ It is basically the peak of the 'surplus production' of a stock, i.e. of the catch that can be harvested without changing the stock's average production in the long-term.

B_{MSY} is not yet known for most stocks. You need to have fished at or below F_{MSY} for a long enough time to establish this reference point precisely, which has not been the case for most stocks. For these stocks, ICES uses 'MSY $B_{trigger}$ ', which marks the lower boundary of the natural fluctuation around B_{MSY} , as a key reference point in its advice on catch limits. In most cases this point is still set at B_{pa} , because the necessary information to establish the true MSY $B_{trigger}$ as a standalone value is not yet available either.

If ICES assesses a stock to have fallen below the MSY $B_{trigger}$ biomass, this 'triggers' ICES to use a more cautious approach regarding its catch advice, namely '*to reduce fishing mortality in order to allow a stock to rebuild to levels capable of producing MSY*'.⁴ So, when the stock is in a worse state (i.e. below MSY $B_{trigger}$), ICES' catch advice will be lower than if it is in a better state (i.e. above MSY $B_{trigger}$), because the fishing pressure needs to be decreased to restore the stock.

Where are the stocks covered by this case in relation to biological reference points?

Figure 2 below illustrates where the stocks for which the Contested Act contains TACs that exceed the ICES headline advice are in relation to biological reference points. This applies to three of the stocks, Celtic Sea cod (COD/7XAD34), Irish Sea whiting (WHG/07A.) and West of Scotland cod (COD/5BE6A), all of which are subject to dangerously high exploitation rates ($F > F_{lim}$) and have a very low stock size ($SSB < B_{lim}$) at or near the historical minimum. Furthermore, herring in the Irish Sea, Celtic Sea and southwest of Ireland (HER/7G-K.) also remains below B_{lim} , despite its current fishing mortality being below F_{MSY} .

For all other stocks for which the Contested Act contains TACs that exceed the ICES headline advice, the exploitation and stock status in relation to reference points is unknown, and the stocks are therefore not displayed in the diagram below.

- For the following stocks no information on stock size or exploitation rate is presented in the ICES advice at all: Rockall cod (COD/5W6-14), Northern shrimp in the northern North Sea, Fladen Ground (PRA/2AC4-C), undulate ray (RJU/9-C.) and pollack in the Celtic Seas and the English Channel (POL/56-14. + POL/07.).

² The corresponding definition provided in Article. 4(18) of the CFP Basic Regulation is: '*stock within safe biological limits*' means a stock with a high probability that its estimated spawning biomass at the end of the previous year is higher than the limit biomass reference point (B_{lim}) and its estimated fishing mortality rate for the previous year is less than the limit fishing mortality rate reference point (F_{lim})'

³ ICES (2021): Advice on fishing opportunities. ICES Technical Guidelines. Report. <https://doi.org/10.17895/ices.advice.7720>. P. 6.

⁴ *Ibid.*

- However, the stock size of the following stocks, while reference points are not available, is estimated to be at or near the historical minimum: Irish Sea cod (COD/07A.) and herring in the West of Scotland and West of Ireland (HER/5B6ANB and HER/6AS7BC).

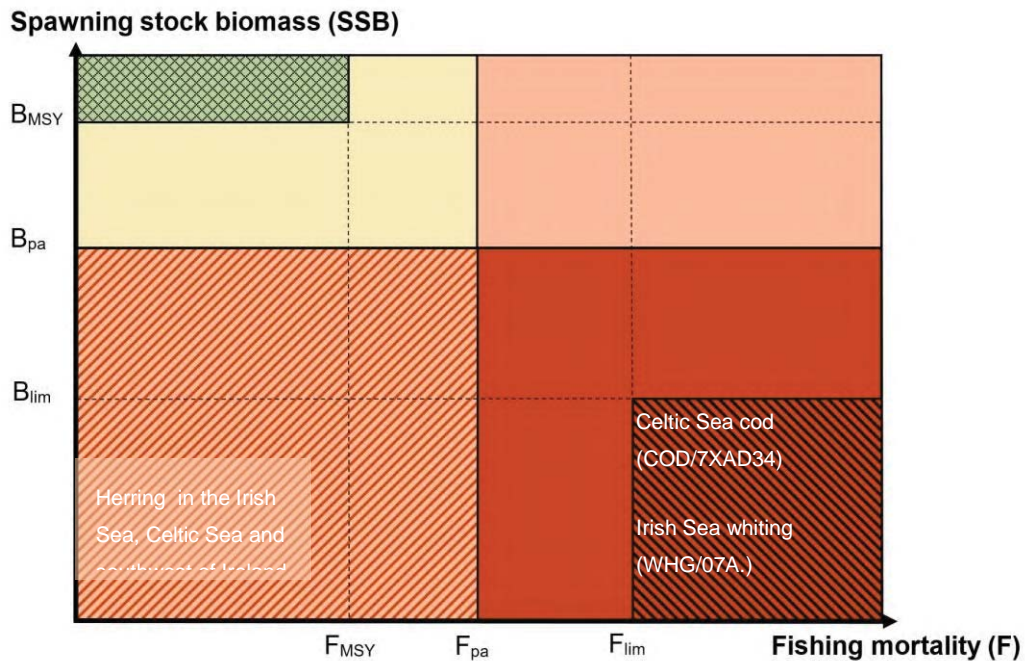


Figure 2 This is a schematic visualisation of the situation of the four stocks for which the Contested Act contains TACs that exceed the ICES headline advice and for which biological reference points are available: Celtic Sea cod (COD/7XAD34), Irish Sea whiting (WHG/07A.), West of Scotland cod (COD/5BE6A) and herring in the Irish Sea, Celtic Sea and southwest of Ireland (HER/7G-K.). All four stocks are far outside safe biological limits (i.e. $SSB < B_{pa}$, and for three of them $F > F_{pa}$), and even in such a precarious situation ($SSB < B_{lim}$ and for three of them $F > F_{lim}$) that reproduction is likely to be impaired. See the caption for Figure 1 for an explanation of the reference points and colours. The other stocks for which the Contested Act contains TACs that exceed the ICES headline advice are not displayed in this diagram since the exploitation and stock status in relation to reference points is unknown.

Annex 13 – Selected stock profiles for TACs set above scientific advice

Scientific advice provided by ICES as the reference for this analysis

Selected stock profiles analysed in this Annex rely on scientific advice provided by the International Council for the Exploration of the Sea (ICES). ICES is an intergovernmental marine science organisation that provides impartial evidence on the state and sustainable use of our seas and oceans.¹

ICES advice is unanimously recognised by the Council, the Member States, the European Parliament and the Commission as being the best available scientific advice for the setting of Total Allowable Catches (TACs). ICES has been for 30 years “*the sole advisory body concerning advice for fisheries management*”² and its advice is unbiased and independent.³

The Contested Act itself - which fixes TACs for all stock profiles analysed in the present Annex - states in Recital 3 that “[t]he Union position was based during the consultations on the best available scientific advice as provided by the International Council for the Exploration of the Sea (ICES)”. This recital confirms the position of the Council that ICES advice is not only the best available scientific advice but also its agreement that, accordingly, it is required to base the TACs on ICES advice.

For the reasons mentioned above, the analysis of stock profiles in this Annex fully relies on scientific advice provided by ICES. A list of TACs identified by ClientEarth as exceeding the best available scientific advice, i.e. the headline advice provided by ICES for 2022, is provided in Tables 1, 2, 3 and 4 in the Request for Internal Review. The situation is described in more detail below for some of these stocks.

By-catch TACs set above MSY advice

The stocks in this category include Celtic Sea cod (COD/7XAD34), Irish Sea whiting (WHG/07A.) and West of Scotland cod (COD/5BE6A). All three are shared with the UK, and the Contested Act transposes the final figures agreed with the UK and included in the Agreed Written Record⁴ into EU law through an amendment to Council Regulation (EU) 2022/109 which contained only provisional TACs for these stocks.⁵

In addition to being shared between the EU and the UK, the three stocks in this category have the following aspects in common:

- The scientific advice is based on MSY and it is for zero catches.

¹ <https://www.ices.dk/about-ICES/who-we-are/Pages/Who-we-are.aspx> [consulted on 16 May 2022].

² Cooperation Agreement between ICES and the European Union on providing scientific advice from January 2022 to December 2022 (SPECIFIC GRANT AGREEMENT NO SI2.869124), p. 5: https://www.ices.dk/about-ICES/Documents/Cooperation%20agreements/EU/2022_DGMARE_ICES_Grant-web.pdf [consulted on 16 May 2022].

³ *Ibid.*, p. 17: “ICES aims at producing advice based on the best available science that is characterised by quality assurance, developed in a transparent process, unbiased, independent, and is recognised by all parties as being relevant to management”.

⁴ Written Record of fisheries consultations between the United Kingdom and the European Union for 2022, 21 December 2021. https://ec.europa.eu/oceans-and-fisheries/system/files/2022-01/2022-eu-uk-fisheries-consultations_en.pdf [consulted on 16 May 2022].

⁵ Council Regulation (EU) 2022/109 of 27 January 2022 fixing for 2022 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in Union waters and for Union fishing vessels in certain non-Union waters. OJ L 21, 31.1.2022, p. 1–164.

- They are depleted (far below the lowest biomass reference point B_{lim} ; at or near the historical minimum, corresponding to less than 8% of their highest recorded historical biomass level).⁶
- The fishing pressure is above the highest exploitation reference point F_{lim} .
- As they fall under Article 1(1) (Celtic Sea cod) or Article 1(4) (Irish Sea whiting and West of Scotland cod) of the Western Waters Regulation, they must comply with Articles 15 and 3 of this Regulation.⁷
- They are subject to a by-catch TAC that exceeds the ICES headline advice of zero catches.
- The final TACs included in the Agreed Written Record also exceed any MSY-related scenarios in the catch options tables presented by ICES, including those related to F_{MSY} upper.⁸

Celtic Sea cod (COD/7XAD34)

Table 1. Overview of the stock situation of Celtic Sea cod and information regarding the level at which the 2022 TAC was set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ⁹	2022 TAC versus recent SSB estimate ¹⁰	Projected SSB increase ¹¹
0 t	644 t	SSB < B_{lim} $F > F_{lim}$	The final by-catch TAC was set 20% below the 2021 TAC of 805 t, and is above any MSY-related scenario. It is between the F_{MSY} scenario (519 t) and the "Whiting F_{MSY} " scenario (814 t). ¹²	The final by-catch TAC corresponds to 48% of the latest (2022) SSB estimate (1354 t)	With advice: +155%; with final TAC: between +66% (Whiting F_{MSY} scenario) ¹³ and +97% (F_{MSY} scenario)

⁶ Celtic Sea cod: SSB (2021) = 1710 t versus highest recorded value SSB (1989) = 22338 t, i.e. 7.7%. Irish Sea whiting: SSB (2021) = 1393 t versus highest recorded value SSB (1981) = 46274 t, i.e. 3%. West of Scotland cod: SSB (2020) = 2213 t versus highest recorded value SSB (1981) = 44062 t, i.e. 5%. Based on the "Value" column in Table 10 of the respective single-stock advice for ICES stock codes "cod.27.7e-k", "whg.27.7a" and "cod.27.6a", respectively: ICES (2021): Cod (Gadus morhua) in divisions 7.e-k (eastern English Channel and southern Celtic Seas). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7751>; ICES (2021): Whiting (Merlangius merlangus) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7887>; ICES (2021): Cod (Gadus morhua) in Division 6.a (West of Scotland). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.6106>.

⁷ As mentioned in the Request itself, only Articles 3 and 15 of the Western Waters Regulation apply to EU/UK shared stocks.

⁸ ICES in its catch options for these stocks provides a reduced F_{MSY} upper scenario which reflects the low biomass, by multiplying the F_{MSY} upper with the quotient of the recent SSB estimate and the MSY $B_{trigger}$. This means that the resulting catch option is decreased, in line with the ICES MSY approach, to reflect that the current SSB is below the MSY $B_{trigger}$, triggering a more cautious approach than if it were at or above MSY $B_{trigger}$. The resulting catch option is therefore lower than the pure F_{MSY} upper catch option. This scenario is listed as " F_{MSY} upper x SSB₂₀₂₂/MSY $B_{trigger}$ " for Celtic Sea cod and Irish Sea whiting (corresponding to 186 t and 44 t, respectively), and as " F_{MSY} upper x SSB (2021) / MSY $B_{trigger}$ " for West of Scotland cod (corresponding to 198 t), in the respective ICES single-stock advice. The pure F_{MSY} upper catch option is also presented for Irish Sea whiting (498 t) and West of Scotland cod (1124 t), but not for Celtic Sea cod. The final by-catch TACs for all three stocks exceed all of these F_{MSY} upper-related scenarios.

⁹ ICES stock code "cod.27.7e-k". ICES (2021): Cod (Gadus morhua) in divisions 7.e-k (eastern English Channel and southern Celtic Seas). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7751>. The scenarios referred to in this column are presented in Table 3, p. 2 of this advice unless otherwise specified.

¹⁰ *Ibid.*, the SSB (2022) estimate comes from Table 2 on p. 1.

¹¹ *Ibid.*, the SSB increase estimates of +155% for following the zero catch advice and +97% for the F_{MSY} point value scenario come from Table 3, p. 2.

¹² ICES (2021): EU standing request on catch scenarios for zero-TAC stocks; cod (Gadus morhua) in divisions 7.e-k (Celtic Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.9151>. This ICES Technical Service which provides further catch scenarios in addition to the official ICES single-stock advice contains a "Whiting F_{MSY} " scenario presented in Table 2, p. 3, which is based on fishing whiting in the Celtic Sea at the reduced F_{MSY} (F_{MSY} x SSB₂₀₂₁/MSY $B_{trigger}$, see Table 1, p. 2, "Whiting reduced F_{MSY} ") and corresponds to cod catches of 814 t (see row "cod.27.7e-k" in Table 2, p. 3).

¹³ *Ibid.*, the +66% estimate is based on the 2023 SSB estimate of 2242 t specified in Table 3 for the "Whiting F_{MSY} " scenario, compared to the SSB (2022) estimate of 1354 t, i.e. $(2242 - 1354)/1354 = 0.66$.

As Figure 1 below shows, Celtic Sea cod has been at dangerously low levels (SSB below B_{lim}) for several years and remains close to its all-time low, after decades of overfishing (F above F_{MSY} for the entire time series and above F_{pa} for most of it, more recently above F_{lim}).

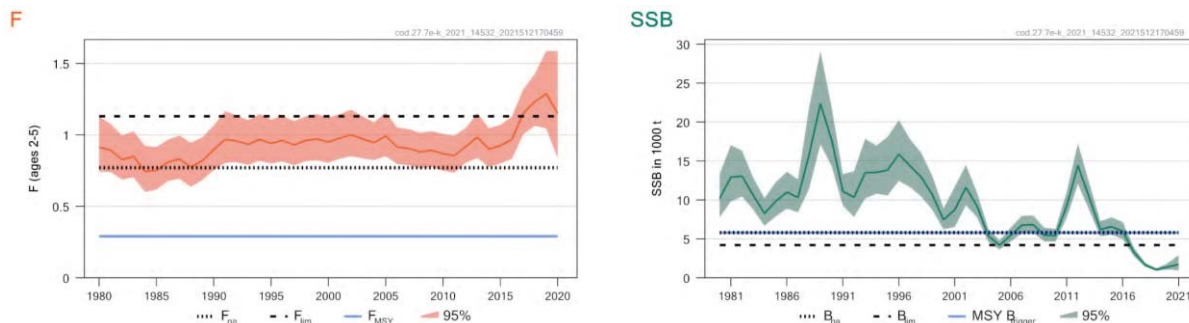


Figure 1. Time series of exploitation rate (F) and stock size (SSB) of Celtic Sea cod in relation to biological reference points, based on the most recent ICES advice.¹⁴

Celtic Sea cod is explicitly listed under Article 1(1)(7) of the Western Waters Regulation. As mentioned in the Request itself, only Articles 3 and 15 of the Western Waters Regulation apply to EU/UK shared stocks. In any event, as detailed below, the Council approach would not be consistent with several other provisions of that Regulation. Indeed, since this stock is below both MSY $B_{trigger}$ and even B_{lim} , this would trigger the safeguards set out in Article 8. According to Article 8(1) and (2) of the Western Waters Regulation, the TAC needs to be consistent “with a fishing mortality that is reduced below the upper range of F_{MSY} , taking into account the decrease in biomass”, and there is an objective “to ensure rapid return of the stock [...] to levels above the level capable of producing MSY”. Moreover, according to Article 4(7) “[f]ishing opportunities shall in any event be fixed in such a way as to ensure that there is less than a 5% probability of the spawning stock biomass falling below B_{lim} ”.

The final TAC of 644 tonnes, as included in the Contested Act, exceeds all MSY-related scenarios included in the catch options table provided by ICES, including, for example, the F_{MSY} point value scenario (519 tonnes), and the reduced $F_{MSY_{upper}}$ scenario which reflects the low stock size (186 tonnes).

Notably, the catch scenario provided by ICES, which would be the closest to the final 2022 TAC of 644 tonnes (namely the F_{MSY} scenario of 519 tonnes, which does not take into account the low stock size) is projected to result in only a 97% increase of the stock size, compared to a 155% increase if the zero catch advice was followed.¹⁵ This shows that this TAC is not geared towards rapid recovery of this stock.

¹⁴ ICES stock code “cod.27.7e-k”. ICES (2021): Cod (*Gadus morhua*) in divisions 7.e-k (eastern English Channel and southern Celtic Seas). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7751>. Figure 1 on p. 1.

¹⁵ *Ibid.*, Table 3 on p. 2, rows “ $F = F_{MSY}$ ” and “MSY approach: $F = 0$ ”.

According to ICES, the stock size of Celtic Sea cod is estimated to remain below B_{lim} (4200 tonnes). Even if the zero catch advice was followed, it is projected to increase only to 3449 tonnes in 2023,¹⁶ i.e. ~82% of the B_{lim} . The risk of the stock falling or remaining below B_{lim} is thus arguably higher than 5% particularly if the zero catch advice is not followed.

In conclusion, setting any non-zero TAC for Celtic Sea cod exceeds the best available scientific advice for the purpose of implementing the objectives of Article 2(2) of the CFP Basic Regulation and Articles 3 and 15 of the Western Waters Regulation. In addition, it would also violate Articles 4(7) and 8(1) of the Western Waters Regulation.

It is also worth noting that according to further catch scenarios provided by ICES^{17,18} in addition to the single-stock advice, the final TACs set for haddock (HAD/7X7A34), megrim (LEZ/07. and LEZ/8ABDE.), anglerfish (ANF/07. and ANF/8ABDE) and common sole (SOL/7FG.) – alongside which Celtic Sea cod is caught – are projected to result in cod catches far above the final agreed by-catch TAC of 644 tonnes (and of course above the zero catch headline advice), as demonstrated below.

The haddock TAC (HAD/7X7A34) was set at 15000 tonnes in the Contested Act (constituting a rollover from 2021), which is below the F_{MSY} point value advice for that stock (15946 tonnes), but far above the $F_{MSY\ lower}$ scenario (10570 tonnes).¹⁹ This TAC is projected to result in a by-catch of cod between 1498 tonnes (for the haddock F_{MSY} scenario) and 1321 tonnes (for the haddock midway between F_{MSY} and $F_{MSY\ lower}$ scenario),²⁰ which is more than twice the agreed TAC for cod. Even if the final haddock TAC had been set at $F_{MSY\ lower}$, this would still have resulted in cod catches of 1109 tonnes,²¹ i.e. still far above the agreed 644 tonnes, and the advised zero catch.

¹⁶ *Ibid.*, Table 3 on p. 2, row “MSY approach: $F = 0$ ”. The B_{lim} of 4200 t is specified in Table 5, p. 4.

¹⁷ ICES (2021): EU standing request on catch scenarios for zero-TAC stocks; Cod (*Gadus morhua*) in divisions 7.e–k (Celtic Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.9151>. This document provides scenarios for how much cod is anticipated to be caught if haddock and whiting are fished at a particular level. This does not constitute ICES advice for sustainable catch levels of cod, but rather projections of what the consequences of selecting a particular scenario for other stocks in the same fishery would be for cod.

¹⁸ ICES (2021): Celtic Sea - mixed fisheries considerations. ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.9184>. This document presents mixed fisheries considerations for the Celtic Sea that illustrate what catch levels of the different stocks are expected under different scenarios. They help highlight situations in which the full exploitation of one stock in line with its single-stock advice would lead to overfishing of other stocks, or in which the cessation of fishing operations once the advised catch for a particular stock has been reached would mean the single-stock advice for another stock cannot be fully exhausted.

¹⁹ ICES stock code “had.27.7b-k”, ICES (2021): Haddock (*Melanogrammus aeglefinus*) in divisions 7.b–k (southern Celtic Seas and English Channel). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7764>. Table 3 p. 2, rows “MSY approach: F_{MSY} ” and “ $F = MAP^{MSY\ lower}$ ”.

²⁰ ICES (2021): EU standing request on catch scenarios for zero-TAC stocks; cod (*Gadus morhua*) in divisions 7.e–k (Celtic Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.9151>. Table 2, p. 3, scenarios “Haddock F_{MSY} ” and “Haddock $F_{MSY\ lower} - F_{MSY}$ ”, row 1.

²¹ *Ibid.*, Table 2, p. 3, “Haddock $F_{MSY\ lower}$ ” scenario, row 1.

The sum of the TACs for megrim and four-spot megrim (LEZ/07. and LEZ/8ABDE.) was set below the sum of the headline advice for both stocks,²² but the agreed level is somewhere between the “had.2.7b-k” and “sq_E” scenarios presented in the mixed fisheries considerations,²³ which are projected to result in cod catches of between 1543 tonnes and 1536 tonnes. Similarly, the TACs for white and black-bellied anglerfish were set slightly below the sum of the headline advice for both stocks,²⁴ but the nearest scenario (sq_E) in the mixed fisheries considerations is projected to result in cod catches of 1536 tonnes.²⁵ Likewise, the TAC for common sole in area 7f, g was set at 1337 tonnes in line with the headline advice for that stock, but the nearest scenario (sq_E) in the mixed fisheries considerations is associated with cod catches of 1536 tonnes.²⁶ In turn, the catch options projected not to exceed the headline advice of zero catch for Celtic Sea cod, in line with the “min” scenario in the mixed fisheries considerations, correspond to a catch of 0 tonnes for all stocks included in these scenarios, except for megrim (5446 tonnes) and white anglerfish (2905 tonnes). ICES also provides a further scenario, “Reduced cod F_{MSY} ” (or “cod_ F_{ARMSY} ”) based on total cod catches across all fleets not exceeding the reduced F_{MSY} ,²⁷ corresponding to an overall cod catch of 132 tonnes.²⁸ This scenario, which itself already exceeds the headline advice of zero catch for cod, would allow for the following catches of the aforementioned stocks: 1040 tonnes for haddock, 6882 tonnes of megrim, 4812 tonnes of white anglerfish and 71 tonnes of common sole.²⁹ The agreed TACs for these stocks are far above these quantities which would allow for cod to be fished in line with the reduced F_{MSY} , recognising its low stock size.

Overall, this means that the TACs for these other key stocks in the mixed fisheries are compatible neither with the headline advice for cod of 0 tonnes, nor with the final cod TAC of 644 tonnes (which itself already exceeds this advice and any relevant MSY-based catch options): if fully exhausted, the haddock and megrim TACs would lead to a considerable overshoot of the final cod TAC (and of course the underlying advice). This failure to

²² The TACs LEZ/07. and LEZ/8ABDE. correspond to two megrim stocks (megrim and four-spot megrim) with ICES stock codes meg.27.7b-k8abd and ldb.27.7b-8abd. The sum of the advice for the two stocks is 22964 + 867 = 23831 t and the corresponding final TACs were set at 20786 t (18916 t + 1870 t). ICES advice for megrim (ICES stock code “meg.27.7b-k8abd”), ICES (2021): Megrim (*Lepidorhombus whiffiagonis*) in divisions 7.b–k, 8.a–b, and 8.d (west and southwest of Ireland, Bay of Biscay). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7790>. ICES advice for four-spot megrim (ICES stock code “ldb.27.7k8abd”): ICES (2021): Four-spot megrim (*Lepidorhombus bosci*) in divisions 7.b–k, 8.a–b, and 8.d (west and southwest of Ireland, Bay of Biscay). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7780>.

²³ ICES (2021): Celtic Sea - mixed fisheries considerations. ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.9184>; Table 3, p. 4, column “had.27.7b-k” and “sq_E”, row for “cod.27.7e-k”. Table 1 on p. 2 explains the different scenarios. The “had.27.7b-k” scenario is based on all fleets setting their effort corresponding to that required to catch their share of haddock, regardless of other catches. The “sq_E” scenario refers to the “status quo effort” (corresponding to the same average effort for 2018-2020).

²⁴ The TACs ANF/07. and ANF/8ABDE. correspond to two anglerfish stocks (white and black-bellied anglerfish) with ICES stock codes mon.27.78abd and ank.27.78ab. The sum of the advice for the two stocks is 34275 + 18661 = 52936 t and the corresponding TACs were set at 52205 t (41173 + 11032). ICES advice for white anglerfish (ICES stock code “mon.27.78abd”), ICES (2021): White anglerfish (*Lophius piscatorius*) in Subarea 7 and divisions 8.a–b and 8.d (Celtic Seas, Bay of Biscay). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7792>. ICES advice for black-bellied anglerfish (ICES stock code “ank.27.78abd”), ICES (2021): Black-bellied anglerfish (*Lophius budegassa*) in Subarea 7 and divisions 8.a–b and 8.d (Celtic Seas, Bay of Biscay). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7724>.

²⁵ ICES (2021): Celtic Sea - mixed fisheries considerations. ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.9184>; Table 3, p. 4, column and “sq_E”, row for “cod.27.7e-k”. Only white anglerfish is included in the mixed fisheries considerations (not black-bellied anglerfish), and since the sum of both TACs was set slightly below the sum of the advice for both stocks, the nearest scenario is the one closest to (but below) the white anglerfish advice (row “mon.27.78abd”), namely the “sq_E” scenario of 31701 t (compared to white anglerfish advice of 34275 t).

²⁶ *Ibid.*, the scenario closest to the agreed TAC for sole (1337 t) is the sq_E scenario, corresponding to 1332 t of sole and 1536 t of Celtic Sea cod.

²⁷ *Ibid.*, Table 1, p. 2, row “cod_ F_{ARMSY} ”.

²⁸ *Ibid.*, Table 3, p. 4, column “cod_ F_{ARMSY} ”.

²⁹ *Ibid.*, Table 3, p. 4, column “cod_ F_{ARMSY} ”.

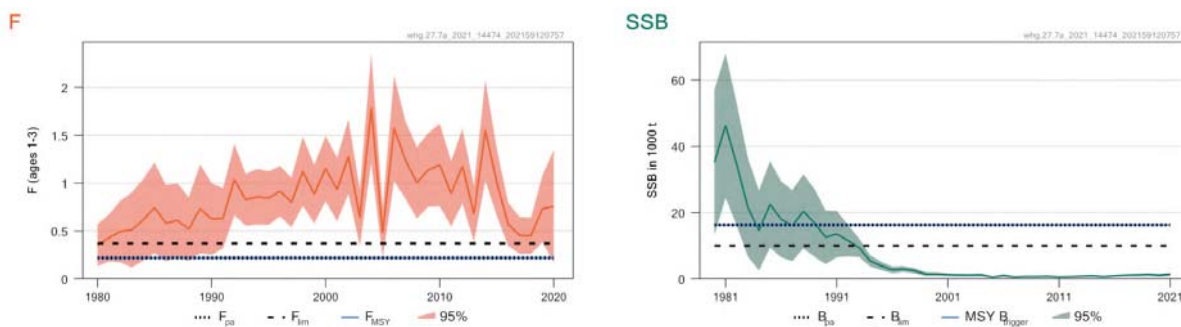
prioritise the recovery and protection of the most limiting and vulnerable stock in the fishery – Celtic Sea cod – when setting TACs for other stocks in the mixed fishery is contrary to the implementation of an ecosystem-based approach to fisheries management as required by Article 2(3) of the CFP Basic Regulation.

Irish Sea whiting (WHG/07A.)

Table 2. Overview of the stock situation of Irish Sea whiting and information regarding the level at which the 2022 TAC was set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ³⁰	2022 TAC versus recent SSB estimate ³¹	Projected SSB increase ³²
0 t	721 t	SSB < B _{lim} F > F _{lim}	The final by-catch TAC represents a rollover of the 2021 TAC. It is above any MSY-related scenarios as well as the F _{pa} scenario (498 t), and close to the F _{lim} scenario (794 t).	54% of the latest (2022) SSB estimate (1326 t)	With advice: +76%; with TAC: +27%; ³³ with projected by-catch level based on an assumed catch of Norway lobster in 2022: +12% ³⁴

As Figure 2 shows,³⁵ Irish Sea whiting has been at dangerously low levels (SSB below B_{lim}) for almost three decades and remains close to the all-time low, after decades of overfishing (F above F_{MSY}, F_{pa} and even F_{lim} throughout the entire time series).



³⁰ ICES stock code “whg.27.7a”, ICES (2021): Whiting (Merlangius merlangus) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7887>. The scenarios referred to in this column are presented in Table 3 of this advice unless otherwise specified.

³¹ *Ibid.*, the SSB (2022) estimate comes from Table 1 on p. 1.

³² *Ibid.*, the SSB increase estimates of +76% for following the zero catch advice, +23% for the F_{lim} scenario and +42% with the F_{MSY}/F_{MSY upper}/F_{pa} scenario (all three are the same) come from Table 2, p. 2.

³³ The official ICES advice does not contain the 721 t catch scenario, but the additional Technical Service which provides further scenarios, does include a “TAC₂₀₂₁” scenario corresponding to a 27% SSB increase. ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (Gadus morhua) in Division 6.a (West of Scotland) and whiting (Merlangius merlangus) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. Table 6, p. 4.

³⁴ *Ibid.*, assuming a catch of 7998 t of Norway lobster in 2022 (based on the average observed in 2018-2020), ICES projects an Irish Sea whiting by-catch of 957 t, which corresponds to an SSB increase of 12%; p. 3 and Table 6, p. 4 (“Catch = Bycatch estimate”).

³⁵ ICES (2021): Whiting (Merlangius merlangus) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7887>. Figure 1, graphs on “F” and “SSB”, p. 1.

Figure 2. Time series of exploitation rate (F) and stock size (SSB) of Irish Sea whiting in relation to biological reference points, based on the most recent ICES advice.

The final TAC of 721 tonnes, as included in the Contested Act, represents a rollover of the 2021 TAC. It also exceeds any other MSY-related scenarios included in the catch options table provided by ICES, including for example the $F_{MSY\ upper}$ scenario of 498 tonnes, which is the same as the F_{MSY} point value and F_{pa} scenario, and is close to the F_{lim} scenario of 794 tonnes.

Notably, the catch scenario of 721 tonnes provided in the ICES Technical Service is projected to result in only a 27% increase of the stock size,³⁶ compared to 76% if the zero catch advice was followed,³⁷ showing that this TAC is not geared towards rapid recovery of this stock.

Irish Sea whiting is not explicitly listed as a target stock under Article 1(1) of the Western Waters Regulation, but as a by-catch in fisheries of stocks listed under Article 1(1), such as Norway lobster in the Irish Sea (Article 1(1)(23)), it falls under Article 1(4) of the Western Waters Regulation. As mentioned in the Request itself, only Articles 3 and 15 of this Regulation apply to EU/UK shared stocks. In any event, as detailed below, the Council approach would not be consistent with several other provisions of that Regulation.

For example, according to Article 4(7) “[f]ishing opportunities shall in any event be fixed in such a way as to ensure that there is less than a 5 % probability of the spawning stock biomass falling below B_{lim} ”. According to the ICES advice for this stock, the stock size is extremely low and estimated to remain below B_{lim} (10000 tonnes). Even if the zero catch advice was followed, it is projected to only increase to 2334 tonnes, i.e. less than 25% of the B_{lim} .³⁸ The risk of the stock falling or remaining below B_{lim} is thus arguably higher than 5%, particularly if the zero catch advice is not followed.

Moreover, Article 4(5) of the Western Waters Regulation states that the upper range of F_{MSY} can only be used for stocks above MSY $B_{trigger}$, while Irish Sea whiting is below B_{lim} . In any case, the Western Waters Regulation allows the use of the upper F_{MSY} range only for stocks listed in Article 1(1) of the Western Waters Regulation which meet the conditions in Article 4(5). Under no circumstance does Article 4 of the Western Waters Regulation allow for an exploitation rate above $F_{MSY\ upper}$. Irish Sea whiting is not listed in Article 1(1), meaning that the upper F_{MSY} range must not be used anyway, and the final agreed TAC goes even beyond the $F_{MSY\ upper}$.

³⁶ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. Table 6, p. 4, “TAC₂₀₂₁” scenario.

³⁷ ICES (2021): Whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7887>. Table 2 on p. 2, rows “ $F = F_{lim}$ ” and “MSY approach”.

³⁸ *Ibid.*, Table 2 on p. 2, row “MSY approach”. The B_{lim} of 10000 t is specified in Table 4, p. 3.

In conclusion, setting any non-zero TAC exceeds the best available scientific advice for the purpose of implementing the CFP's Article 2(2) objective and Articles 3 and 15 of the Western Water Regulation. Moreover, as outlined above, the Council's approach would not be consistent with several other provisions of the Western Waters Regulation either.

Mixed fisheries scenarios like those produced by ICES for the Celtic Sea are not available for the Irish Sea. However, according to the ICES advice, the "*majority of whiting caught are discards in the Nephrops [Norway lobster] fishery and are below the minimum conservation reference size (MCRS)*".³⁹ The TAC for Norway lobster in area 7 (which includes the Irish Sea) has been set below the sum of the catch advice for Norway lobster in the corresponding functional units for the last four years (and in line with the projected landings corresponding to the sum of the headline catch advice for 2022).⁴⁰ However, discards of Irish Sea whiting "*remain high relative to the landings*" despite the introduction of further highly selective gears to reduce finfish catch and discards in that fishery. For example, in 2020, the most recent year for which this information is available, 1030 tonnes of the "ICES catch" of 1118 tonnes, i.e. 92%, were discarded.⁴¹

Moreover, the ICES Technical Service contains a "Catch = Bycatch estimate" scenario of 957 tonnes of whiting projected to be caught as by-catch in the fishery for Norway lobster, assuming that 7998 tonnes of Norway lobster (the average catch of 2018-2020) is caught in the area in 2022, corresponding to a 12% SSB increase for Irish Sea whiting (compared to 76% if the 0 catch advice were followed).⁴² This indicates that the Norway lobster catch needs to be substantially decreased to avoid an overshoot of not just the Irish Sea whiting advice, but also the agreed TAC of 721 tonnes. The decision of the Council to allow the Norway lobster fishery to continue at a level resulting in such substantial by-catches and discards of the vulnerable Irish Sea whiting stocks is contrary to the ecosystem-based approach required by Article 2(3) of the CFP Basic Regulation.⁴³

According to the ICES fisheries overview for the Celtic Sea ecoregion, which includes the Irish Sea, Irish Sea whiting is also caught and landed in a number of fisheries for demersal fish, including using otter trawls.⁴⁴ These otter trawl fisheries land catches of various other stocks, including Irish Sea haddock. The TAC for Irish Sea haddock was set at 3038 tonnes in line with the ICES headline catch advice for that stock, representing a 10% decrease compared with the 2021 TAC. Assuming the catch composition remains the same in 2022, this would result in a 10% decrease in whiting catches in this fishery, which would however still overshoot the headline advice of 0 tonnes.

³⁹ *Ibid.*, p. 3.

⁴⁰ There is one combined TAC (NEP/07.) for the whole area 7 which includes several functional units of Norway lobster. This TAC was set at 17038 t which is the same as the sum of the landings projected for the catches advised by ICES for the relevant functional units as well as outside functional units in the area, referring to the following ICES advice codes: nep.fu.19 + nep.fu.22 + nep.fu.2021 + nep.27.outFU + nep.fu.14 + nep.fu.15 + nep.fu.16 + nep.fu.17 = 286 + 1083 + 1703 + 150 + 785 + 9924 + 2804 + 303 t; references for the relevant ICES advice are provided in **Annex 9**.

⁴¹ ICES (2021): Whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7887>. Table 6, columns "Discards" and "ICES catch" for the year 2020.

⁴² ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. Table 6, p. 4, "Catch = Bycatch estimate" scenario.

⁴³ Note that the Norway lobster TAC (NEP/07.) covers the whole area 7, without any specific limitation in the Contested Act on catches within this TAC in the Irish Sea. Whereas there is a footnote constraining allowable catches of Norway lobster in FU16 within the overarching NEP/07. TAC, there is no such limitation in place for the two Irish Sea functional units, FU14 and FU15, which could limit whiting by-catch in this area.

⁴⁴ ICES (2021): Celtic Seas ecoregion – Fisheries overview. ICES Advice: Fisheries Overviews. Report. <https://doi.org/10.17895/ices.advice.9098>. Panel (b) of Figure 15 (p. 28) shows that Irish Sea whiting ("WHG") is mostly landed in the métiers OTB_DEF, PTM_SPF and OTM_SPF. Panel (a) shows that the OTM_DEF métier (otter trawls for demersal fish) otherwise mostly has landings of haddock.

West of Scotland cod (COD/5BE6A)

Table 3. Overview of the stock situation of West of Scotland cod and information regarding the level at which the 2022 TAC was set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ⁴⁵	2022 TAC versus recent SSB estimate ⁴⁶	Projected SSB increase ⁴⁷
0 t	1279 t	SSB < B _{lim} F > F _{lim}	The final by-catch TAC represents a rollover of the 2021 TAC. It is above any MSY-related scenarios, and between the F _{pa} scenario (1182 t) and the saithe scenario (1319 t). ⁴⁸	42% of the latest (2021) SSB estimate (3025 t)	With advice: +70% (for 2023); with TAC: the final agreed TAC is closest to the saithe (or “F = 0.69 x F ₂₀₂₁ ”) scenario for which a +17% SSB increase is projected for 2023; a +36% increase is projected for the F _{MSY} scenario of 841 t

As Figure 3 shows,⁴⁹ West of Scotland cod has been at dangerously low levels (SSB below B_{lim}) for almost three decades and remains close to the all-time low, after decades of overfishing (F above F_{MSY}, F_{pa} and even F_{lim} throughout the entire time series).

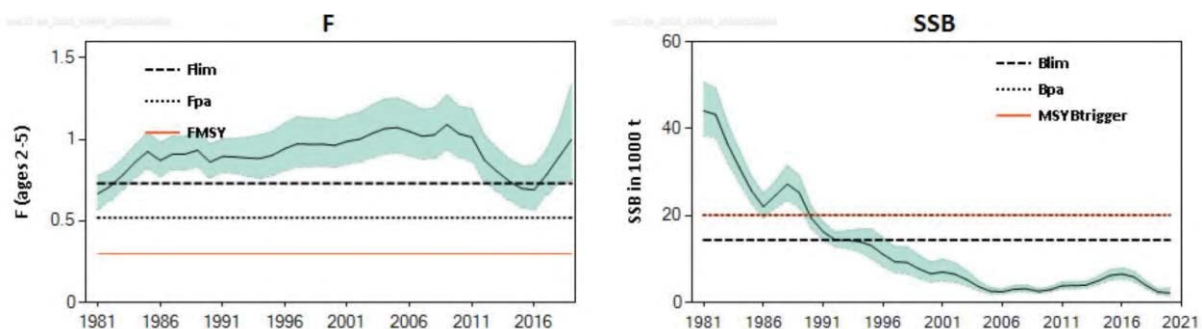


Figure 3. Time series of exploitation rate (F) and stock size (SSB) of West of Scotland cod in relation to biological reference points, based on the most recent ICES advice.

The final TAC of 1279 tonnes, as included in the Contested Act, represents a rollover of the 2021 TAC. It also exceeds any other MSY-related scenarios included in the catch options table provided by ICES, including for example the F_{MSY upper} scenario of 1124 tonnes and the F_{MSY} point value scenario, and is also above the F_{pa} scenario of 1182 tonnes.

⁴⁵ ICES stock code “cod.27.6a”, ICES (2020): Cod (Gadus morhua) in Division 6.a (West of Scotland). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.6106>. The scenarios referred to in this column are presented in Table 3 of this advice unless otherwise specified.

⁴⁶ *Ibid.*, the SSB (2022) estimate comes from Table 2 on p. 2.

⁴⁷ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (Gadus morhua) in Division 6.a (West of Scotland) and whiting (Merlangius merlangus) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. While the latest single-stock advice for West of Scotland cod was not updated in 2021, meaning that it does not contain SSB projections for 2022, a few additional catch scenarios are presented in this ICES Technical Service, along with estimates for the projected change in SSB for 2023 compared to 2022. The details presented in this column come from Table 3 on p. 3 of that Technical Service.

⁴⁸ *Ibid.*; This ICES Technical Service contains a “F = 0.69 x F₂₀₂₂” scenario corresponding to the single-stock advice for saithe being followed, presented in Table 3, p. 3, with a projected West of Scotland cod catch of 1319 t.

⁴⁹ ICES stock code “cod.27.6a”, ICES (2020). Cod (Gadus morhua) in Division 6.a (West of Scotland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, cod.27.6a. <https://doi.org/10.17895/ices.advice.6106>; Figure 1, graphs on “F” and “SSB”, p. 1.

Notably, the final agreed rollover TAC is projected by the official ICES advice from 2020 to result in only a 45% increase of the stock size in 2022 in comparison to 2021, compared to 101% if the zero catch advice was followed, and 69% with the F_{MSY} scenario,⁵⁰ showing that this TAC is not geared towards rapid recovery of this stock. The single-stock advice was not updated in 2022 and a biomass forecast for 2023 is therefore not presented. However, the ICES Technical Service on catch scenarios for stocks with zero-catch advice includes some updated scenarios with biomass forecasts for 2023.⁵¹ According to this, the headline advice of zero catch would now mean a 70% SSB increase in 2023, the F_{MSY} scenario (with a catch of 841 tonnes in 2022) corresponds to a 36% SSB increase in 2023, and the F_{MSY} lower scenario (with a catch of 534 tonnes in 2022) corresponds to a 49% increase.⁵² This indicates that the updated outlook for 2023 is less positive than that for 2022 based on the official single-stock advice from 2020, with smaller projected SSB increases. The catch scenario closest to the agreed final TAC of 1279 tonnes is the scenario based on the single-stock advice for saithe being followed, which is projected to result only in a 17% SSB increase in 2023, far below the recovery associated with following the headline advice for zero catch (+70%).⁵³ The conclusion that the agreed final TAC is not geared towards rapid stock recovery thus remains valid based on these updated projections.

West of Scotland cod is not explicitly listed under Article 1(1) of the Western Waters Regulation, but by-catches of this stock alongside other stocks under the MAP, such as Norway lobster (Article 1(1)(22)) fall under Article 1(4). As mentioned in the Request itself, only Articles 3 and 15 of this Regulation apply to EU/UK shared stocks. In any event, as detailed below, the Council approach would not be consistent with several other provisions of that Regulation.

For example, according to Article 4(7) “[f]ishing opportunities shall in any event be fixed in such a way as to ensure that there is less than a 5 % probability of the spawning stock biomass falling below B_{lim} ”. According to the ICES advice for this stock, the stock size is extremely low and estimated to remain below B_{lim} (14376 tonnes),⁵⁴ even if the zero catch advice was followed. Based on the ICES Technical Service it is projected to only increase to 5040 tonnes in 2023,⁵⁵ i.e. 35% of the B_{lim} , and to only 3466 tonnes (i.e. 24% of the B_{lim}) following the 1319 tonnes catch scenario which is closest to the agreed TAC of 1279 tonnes. The risk of the stock falling or remaining below B_{lim} is thus arguably higher than 5% particularly since the zero catch advice was not followed.

⁵⁰ *Ibid.*, Table 3, p. 2, column “% SSB change” for rows “Rollover TAC”, “MSY approach: $F = 0$ ” and “ $F = F_{MSY}$ ”.

⁵¹ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>.

⁵² *Ibid.*, Table 3, p. 3.

⁵³ *Ibid.*, Table 3, p. 3, row for scenario “ $F = 0.69 \times F_{2021}$ ”.

⁵⁴ ICES stock code “cod.27.6a”, ICES (2020). Cod (*Gadus morhua*) in Division 6.a (West of Scotland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, cod.27.6a. <https://doi.org/10.17895/ices.advice.6106>. The B_{lim} of 14376 t is specified in Table 5, p. 4.

⁵⁵ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; Cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. Table 3, p. 3.

Moreover, Article 4(5) of the Western Waters Regulation states that the upper range of F_{MSY} can only be used for stocks above $MSY B_{trigger}$, while West of Scotland cod is below B_{lim} . In any case, the Western Waters Regulation allows the use of the upper F_{MSY} range only for stocks listed in Article 1(1) of the Western Waters Regulation which meet the conditions in Article 4(5). Under no circumstance does Article 4 of the Western Waters Regulation allow for an exploitation rate above $F_{MSY upper}$. West of Scotland cod is not listed in Article 1(1), meaning that the upper F_{MSY} range must not be used anyway, and the final agreed TAC goes even beyond the $F_{MSY upper}$.

In conclusion, setting any non-zero TAC exceeds the best available scientific advice for the purpose of implementing the CFP's Article 2(2) objective and Articles 3 and 15 of the Western Waters Regulation. Moreover, as outlined above, the Council approach would not be consistent with several other provisions of the Western Waters Regulation either.

Mixed fisheries scenarios like those produced by ICES for the Celtic Sea are not available for the West of Scotland. However, according to the ICES advice, West of Scotland cod is primarily caught using demersal finfish trawls and in the Norway lobster fishery. The ICES Technical Service on catch scenarios for stocks with zero-catch advice calls it a "*minor bycatch stock of the fisheries targeting Northern shelf haddock, saithe, and Anglerfish*".⁵⁶ The catch scenario closest to the agreed 1279 tonnes, based on the ICES Technical Service, is the scenario based on saithe being fished in line with its single-stock advice, which would result in cod catches of 1319 tonnes in 2022.

A large proportion of the discards of West of Scotland cod is accounted for by the Norway lobster fishery (45% of 204 tonnes, i.e. 91.8 tonnes, for 2019 according to the official ICES advice,⁵⁷ and 32% of 310 tonnes, i.e. 99.2 tonnes, for 2020 according to the Technical Service).⁵⁸ The Norway lobster TAC (NEP/5BC6.) was set in line with the sum of the landings (11862 tonnes) associated with the headline advice for the Norway lobster stocks in this area.⁵⁹ Mixed fisheries considerations are not available for these stocks, but a continuation of the Norway lobster fishery at this level poses a risk of further discards of West of Scotland cod. For example, the sum of Norway lobster landings recorded for 2019 (where 91.8 tonnes of cod were discarded in this fishery) was 9055 tonnes.⁶⁰ While ICES does not provide an estimate for the amount of cod likely to be discarded in this fishery in 2022, these figures suggest that if the 2022 TAC for Norway lobster of 11862 tonnes is fully exhausted, a similar or possibly higher amount of cod could be expected to be

⁵⁶ *Ibid.*, p. 2.

⁵⁷ ICES (2020). Cod (*Gadus morhua*) in Division 6.a (West of Scotland). In Report of the ICES Advisory Committee, 2020. ICES Advice 2020, cod.27.6a. <https://doi.org/10.17895/ices.advice.6106>. Table 8 on p. 6.

⁵⁸ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. Table 1, p. 2.

⁵⁹ The TAC for Norway lobster in this area (NEP/5BC6.) comprises 3 functional units (FUs 11, 12 and 13) as well as catches outside of functional units. The projected landings corresponding to the headline advice for 2022 are 3752 t (FU 11, or nep.fu.11), 3890 t (FU12, or nep.fu.12), 4011 t (FU 13, or nep.fu.13, including 3416 t for the Firth of Clyde component, and 595 t for the Sound of Jura component), and 209 t (outside FUs, or nep.27.6aoutFU), i.e. 11862 t in total. ICES stock code "nep.fu.11", ICES (2021): Norway lobster (*Nephrops norvegicus*) in Division 6.a – FU 11 (West of Scotland, North Minch). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7794>. ICES stock code "nep.fu.12", ICES (2021): Norway lobster (*Nephrops norvegicus*) in Division 6.a, Functional Unit 12 (West of Scotland, South Minch). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7795>. ICES stock code "nep.fu.13", ICES (2021): Norway lobster (*Nephrops norvegicus*) in Division 6.a, Functional Unit 13 (West of Scotland, the Firth of Clyde, and the Sound of Jura). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7796>. ICES stock code "nep.27.6outFU", ICES (2020): Norway lobster (*Nephrops norvegicus*) in Division 6.a, outside the functional units (West of Scotland). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7559>.

⁶⁰ *Ibid.*: nep.fu.11: 1979 t (Table 6, p. 5); nep.fu.12: 2220 t (Table 6, p. 5); nep.fu.13: 4683 t (Table 8, p. 8); nep.27.6outFU: 173 t (Table 3, p. 2).

discarded in 2022, unless the catch composition or selectivity changes. A failure to factor in the potential impact of the Norway lobster fishery on West of Scotland cod is contrary to the ecosystem-based approach required by Article 2(3) of the CFP Basic Regulation.

Note that based on the catch data presented in the ICES Technical Service, the actual cod catches of 1583 tonnes have exceeded the TAC of 1279 tonnes in 2020 by 24%, the most recent year for which this information is available.⁶¹ This shows that the TAC has not been respected and it has not effectively limited the catches. Furthermore, the “F = F₂₀₂₁” scenario presented in the ICES Technical Service demonstrates that if the fishing mortality remains the same as in 2021 (for which the TAC was also set at 1279 tonnes), i.e. if the TAC continues not to be effectively controlled, this is projected to result in catches of 1729 tonnes, i.e. an overshoot of 450 tonnes (or 35%) above the agreed TAC. This catch level is associated with only a marginal SSB increase of 0.44%.

TACs exceeding the best available scientific advice in line with the precautionary approach of Article 2(2) of the CFP Basic Regulation

The Contested Act sets a number of EU/UK shared TACs exceeding the precautionary advice provided by ICES, including for example Irish Sea cod (COD/07A.), Rockall cod (COD/5W6-14), Northern shrimp (PRA/2AC4-C) and pollack (POL/56-14 and POL/07.). All of these stocks are data-limited (stock status and exploitation rate in relation to biological reference points are unknown) and subject to precautionary (and not MSY-based) scientific advice. Pollack is explicitly included as a target stock in Article 1(1)(29) of the Western Waters Regulation, whereas Irish Sea cod and Northern shrimp are subject to a by-catch TAC.

Three of the above stocks (Irish Sea cod, Celtic Sea pollack and Northern shrimp) are presented in more detail below.

Irish Sea cod (COD/07A.)

Table 4. Overview of the stock situation of Irish Sea cod and information regarding the level at which the 2022 TAC was set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ⁶²	2022 TAC versus recent SSB estimate	Projected SSB increase
74 t	206 t	Unknown; both in lower part of the time series	The TAC represents a rollover of the 2021 TAC and equals the catch estimated for 2020, i.e. seems to be geared towards maintaining the status quo. No other catch scenarios are provided in the ICES advice.	Unknown	Unknown

⁶¹ ICES (2021): EU standing request on catch scenarios for zero TAC stocks 2021; cod (*Gadus morhua*) in Division 6.a (West of Scotland) and whiting (*Merlangius merlangus*) in Division 7.a (Irish Sea). ICES Advice: Special Requests. Report. <https://doi.org/10.17895/ices.advice.8218>. The latest catch estimate for 2020, of 1583 t, is provided in Table 1, p. 2.

⁶² ICES stock code “cod.27.7a”, ICES (2021): Cod (*Gadus morhua*) in Division 7.a (Irish Sea). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7750>. The only available catch scenario is presented in Table 1 of this advice.

According to the ICES advice,⁶³ the level of exploitation and size of the Irish Sea cod stock in relation to biological reference points are unknown since no reference points are available. However, as illustrated by Figure 4,⁶⁴ both the harvest rate and the stock size seem to be in the lower part of the time series provided. Irish Sea cod is data-limited and the precautionary approach therefore applies. The precautionary headline advice of 74 tonnes is the only catch option presented in the ICES advice. The Council however fixed the TAC for this stock at 206 tonnes for 2022. This TAC exceeds the ICES headline advice by 178%.

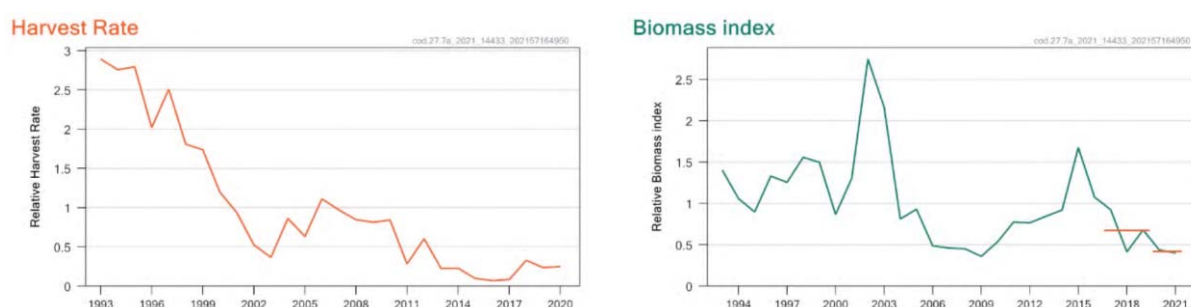


Figure 4. Time series of harvest rate and stock size (biomass index) of Irish Sea cod, based on the most recent ICES advice. Biological reference points are not available for this stock.

The TAC has been set above the advice for the majority of the time series with only four exceptions in 1990, 1992, 2018 and 2019.⁶⁵ ICES has issued zero catch advice between 2000 and 2017 and the TAC has been gradually decreased but never followed this advice. When the advice increased again in 2018, the TAC followed and did not exceed the advice for two years, but has been above advice again since 2020, after the advice decreased again, following a downgrading from an MSY-based assessment to precautionary advice.

Irish Sea cod is explicitly listed under Article 1(1)(6) of the Western Waters Regulation. As mentioned in the Request itself, only Articles 3 and 15 of this Regulation apply to EU/UK shared stocks. In any event, as detailed below, the Council approach would not be consistent with several other provisions of that Regulation. Article 4(6) of the Western Waters Regulation says that “[w]here ranges of F_{MSY} cannot be determined for a stock listed in Article 1(1) because of a lack of adequate scientific information, that stock shall be managed in accordance with Article 5 until ranges of F_{MSY} are available pursuant to paragraph 2 of this Article”.

Article 5 of the Western Waters Regulation states that:

- Management measures “including, where appropriate, fishing opportunities shall be set taking into account the best available scientific advice and shall be consistent with the objectives laid down in Article 3”; and

⁶³ *Ibid.*

⁶⁴ *Ibid.*, Figure 1, graphs on “Harvest rate” and “Biomass index”.

⁶⁵ *Ibid.*, Table 4, p. 3-4.

- Stocks “shall be managed under the precautionary approach to fisheries management [...] when no adequate scientific information is available, and in accordance with Article 3(5) of this Regulation”.

Article 3(5) of the Western Waters Regulation specifies that “measures under the plan shall be taken in accordance with the best available scientific advice. Where there is insufficient data, a comparable degree of conservation of the relevant stocks shall be pursued”.

This explicit reference to Article 3(5) emphasises the need to take measures “in accordance with the best available scientific advice”, and to pursue “a comparable degree of conservation of the relevant stocks” where there is insufficient data. The “best available scientific advice” for the purposes of TAC-setting for data-limited stocks is the precautionary headline advice provided by ICES, in this case 74 tonnes, which the TAC of 206 tonnes set by the Council in the Contested Act exceeded by 178%.

Mixed fisheries scenarios like those produced by ICES for the Celtic Sea are not available for the Irish Sea. However, based on the catch data provided in the ICES advice for 2020,⁶⁶ Irish Sea cod catches are taken in different fisheries, including by otter trawls targeting Norway lobster and demersal fish, respectively, as well as beam trawls, mid-water trawls and to a lesser extent other gear types. According to the ICES fisheries overview for the Celtic Sea ecoregion, which includes the Irish Sea, other stocks landed in these fisheries include haddock, Norway lobster, monkfish (another name for anglerfish), plaice and sole.⁶⁷

The TAC for Irish Sea haddock was set at 3038 tonnes, in line with the ICES headline catch advice for that stock, representing a 10% decrease compared to the 2021 TAC. The TAC for Norway lobster in area 7 (which includes the Irish Sea) has been set below the sum of the catch advice for Norway lobster in the corresponding functional units for the last four years (and in line with the sum of the projected landings corresponding to the headline catch advice for 2022, at 17038 tonnes). This represents a 5% decrease compared to the 2021 TAC. The TAC for Irish Sea plaice was set at 2747 tonnes, in line with the ICES headline catch advice for that stock, representing a 3% decrease compared to the 2021 TAC. The TAC for Irish Sea sole was set at 787 tonnes, in line with the ICES headline catch advice for that stock, representing a 2% increase compared to the 2021 TAC. The TACs for anglerfish (or “monkfish”) were set at a sum of 52205 tonnes, slightly below the sum of the ICES headline catch advice for the relevant stocks, representing an 8% increase compared to the 2021 TACs.⁶⁸

⁶⁶ *Ibid.*, Table 5, p. 4.

⁶⁷ ICES (2021): Celtic Seas ecoregion – Fisheries overview. ICES Advice: Fisheries Overviews. Report. <https://doi.org/10.17895/ices.advice.9098>. Panel (b) of Figure 15 (p. 28) shows that Irish Sea cod (“COD”) is mostly landed in the métiers OTB_DEF, OTB_CRU, OTM_DEF and TBB_DEF. Panel (a) shows that these fisheries using otter trawls, mid-water trawls and beam trawls mostly land haddock, Norway lobster, monkfish (another name for anglerfish), plaice and sole.

⁶⁸ The two relevant anglerfish stocks occur in areas 7 (which includes the Irish Sea) and 8, and the corresponding TACs ANF/07. and ANF/8ABDE. were set at 52205 t (41173 + 11032), compared to advice of 52936 t (34275 + 18661), and compared to a sum of TACs for 2021 of 48338 t (38123 + 10215).

The most recent catch of Irish Sea cod was 206 tonnes for 2020, which is 178% above the current ICES headline catch advice of 74 tonnes. Bringing the actual catches in 2022 in line with this advice would require a 64% decrease in catches. Clearly, the levels at which the Council set the TACs for the other stocks alongside which Irish Sea cod is caught as bycatch are not going to deliver this decrease, unless the catch composition, and specifically the by-catch level of cod, changes substantially. This failure to safeguard Irish Sea cod when setting TACs for other stocks caught in the same fisheries is contrary to the ecosystem-based approach required by Article 2(3) of the CFP Basic Regulation.

In conclusion, the Council’s decision to set the Irish Sea cod TAC above the best available scientific advice based on the precautionary approach is contrary to Article 2(2) of the CFP Basic Regulation and Articles 3 and 15 of the Western Waters Regulation. Moreover, as outlined above, the Council’s approach would not be consistent with several other provisions of the Western Waters Regulation either, since it would also be contrary to the above-mentioned provisions in Article 5 of that Regulation.

Celtic Sea pollack (POL/56-14 and POL/07.)

Table 5. Overview of the stock situation of Celtic Sea pollack and information regarding the level at which the 2022 TACs were set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ⁶⁹	2022 TAC versus recent SSB estimate	Projected SSB increase
3360 t	8168 t (156 t + 8012 t)	Unknown; fishing mortality estimated to be below possible reference points	The 2022 TAC represents a -15% cut compared to the 2021 TAC. No other catch scenarios are provided in the ICES advice.	Unknown	Unknown

According to the ICES advice for Celtic Sea pollack,⁷⁰ the stock size is unknown, and reference points are not presented. The stock is data-limited and the precautionary approach therefore applies. The precautionary headline advice of 3360 tonnes for commercial catches is the only catch option presented in the ICES advice. The Council however fixed the two TACs referring to this stock at a sum of 8168 tonnes (156 + 8012 tonnes) for 2022. These TACs clearly exceed the ICES headline advice, by 143%.

Celtic Sea pollack is explicitly listed under Article 1(1)(29) of the Western Waters Regulation. As mentioned in the Request itself, only Articles 3 and 15 of this Regulation apply to EU/UK shared stocks. In any event, as detailed below, the Council’s approach would not be consistent with the other provisions of that Regulation.

⁶⁹ ICES stock code “pol.27.67”_ICES (2021): Pollack (*Pollachius pollachius*) in subareas 6–7 (Celtic Seas and the English Channel). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7831>. The only available catch scenario is presented in Table 1 of this advice.

⁷⁰ *Ibid.*

Article 4(6) of the Western Waters Regulation says that “[w]here ranges of F_{MSY} cannot be determined for a stock listed in Article 1(1) because of a lack of adequate scientific information, that stock shall be managed in accordance with Article 5 until ranges of F_{MSY} are available pursuant to paragraph 2 of this Article”.

Article 5 of the Western Waters Regulation states that:

- Management measures “including, where appropriate, fishing opportunities shall be set taking into account the best available scientific advice and shall be consistent with the objectives laid down in Article 3”; and
- Stocks “shall be managed under the precautionary approach to fisheries management [...] when no adequate scientific information is available, and in accordance with Article 3(5) of this Regulation”.

Article 3(5) of the Western Waters Regulation specifies that “measures under the plan shall be taken in accordance with the best available scientific advice. Where there is insufficient data, a comparable degree of conservation of the relevant stocks shall be pursued.”

This explicit reference to Article 3(5) emphasises the need to take measures “in accordance with the best available scientific advice”, and to pursue “a comparable degree of conservation of the relevant stocks” where there is insufficient data. The “best available scientific advice” for the purposes of TAC-setting for data-limited stocks is the precautionary headline advice provided by ICES, in this case 3360 tonnes, which the sum of the TACs of 8168 tonnes set by the Council in the Contested Act exceeded by 143%.

Celtic Sea Pollack is not included in the mixed fisheries scenario presented by ICES for the Celtic Sea. However, based on the catch data provided in the ICES advice for 2020,⁷¹ commercial Celtic Sea pollack catches are taken in different fisheries, including by static nets and otter trawlers, and recreational catches which are estimated to be substantial.

In conclusion, the Council’s decision to set the Celtic Sea pollack TACs above the best available scientific advice based on the precautionary approach is contrary to Article 2(2) of the CFP Basic Regulation and Articles 3 and 15 of the Western Waters Regulation. Moreover, as outlined above, the Council’s approach would not be consistent with several other provisions of the Western Waters Regulation either, since it would also be contrary to the above-mentioned provisions in Article 5 of that Regulation.

⁷¹ *Ibid.*, Table 5, p. 4.

Northern shrimp in Division 4.a West (northern North Sea, Fladen Ground) (PRA/2AC4-C)

Table 6. Overview of the stock situation of Northern shrimp in the Fladen Ground and information regarding the level at which the 2022 TAC was set, and its implications.

ICES headline advice	Agreed 2022 TAC	Stock and exploitation status	2022 TAC compared to other catch scenarios ⁷²	2022 TAC versus recent SSB estimate	Projected SSB increase
0 t (no targeted fisheries, 0 t of landings)	990 t	Unknown	The 2022 TAC represents a +50% increase compared to the 2021 TAC and is far above the recent estimated landings (219 t for 2020) and estimated official landings for 2021 (600 t), i.e. it is geared towards an increase in landings. No other catch scenarios are presented.	Unknown	Unknown

According to the ICES advice “ICES cannot provide advice on the status of this stock because of a lack of sufficient survey and catch data”.⁷³ The single-stock advice therefore does not contain any graphs of exploitation or stock size time series. The stock is data-limited and the precautionary approach therefore applies. The precautionary headline advice of “no targeted fisheries”, corresponding to 0 tonnes of landings,⁷⁴ is the only catch option presented in the ICES advice. The Council however fixed a by-catch TAC for this stock at 990 tonnes for 2022.

The TAC has been set above the advice, which has been for landings of 0 tonnes since 2013, for the majority of the time series. It has been gradually decreased from 2446 tonnes in 2017 to 660 tonnes in 2021, whereas the 2022 TAC of 990 tonnes represents a 50% increase and is therefore geared towards an increase in landings, rather than a reduction to the advised 0 tonnes.

Northern shrimp in Division 4.a West is not explicitly covered by the North Sea Regulation⁷⁵ which covers other stocks in the wider North Sea area, and ICES says that it is “not aware of any agreed precautionary management plan for northern shrimp” in this area. According to the ICES advice this stock is caught as by-catch in the Danish and Norwegian Norway pout fishery. However, since Norway pout itself is not covered by the North Sea Regulation, Northern shrimp does not appear to fall under Article 1(4) either, unless as by-catch in one of the fisheries for any of the other stocks listed in Article 1(1).

⁷² ICES stock code “pra.27.4a”, ICES (2021): Northern shrimp (*Pandalus borealis*) in Division 4.a West (Northern North Sea, Fladen Ground). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7835>. The only available catch scenario is presented in Table 1 of this advice.

⁷³ *Ibid.*, p. 1.

⁷⁴ *Ibid.*, Table 3 on p. 3 specifies “landings corresponding to advice” of 0 t for all years since 2013, including for 2022.

⁷⁵ Regulation (EU) 2018/973 of the European Parliament and of the Council of 4 July 2018 establishing a multiannual plan for demersal stocks in the North Sea and the fisheries exploiting those stocks, specifying details of the implementation of the landing obligation in the North Sea and repealing Council Regulations (EC) No 676/2007 and (EC) No 1342/2008, O.J. L. 179, 16/7/2018, p. 1–13.

The sum of the quotas for the EU, the UK, Norway and the Faroe Islands for Norway pout is 59728 tonnes for 2022 (to be fished from 1 November 2021 to 31 October 2022).⁷⁶ This is about half of the headline advice for that stock of 118273 tonnes,⁷⁷ and represents a 53% cut compared to the sum of the quotas for the EU, the UK, Norway and the Faroe Islands for 2021 of 128300 tonnes, as included in the amended TAC Regulation for 2021.⁷⁸ Assuming the Norway pout fishery is the main source of catches of the Northern shrimp stock, this raises the question on what basis the TAC was increased by 50%, contrary to the advice for a landings level of 0 tonnes, given that the decrease in the TAC for Norway pout would presumably result in lower by-catch levels as well.

In conclusion, the Council's decision to increase the TAC for Northern shrimp, despite the best available scientific advice for landings of 0 tonnes, based on the precautionary approach, is contrary to Article 2(2) of the CFP Basic Regulation.

⁷⁶ Council Regulation (EU) 2022/109 of 27 January 2022 fixing for 2022 the fishing opportunities for certain fish stocks and groups of fish stocks applicable in Union waters and for Union fishing vessels in certain non-Union waters. There is no overall TAC for NOP/2A3A4., but the sum of the shares for the EU (36957 t), the UK (7839 t), Norway (0 t) and the Faroe Islands (0 t) is 59728 t.

⁷⁷ ICES stock code "nop.27.3a4": ICES (2021): Norway pout (*Trisopterus esmarkii*) in Subarea 4 and Division 3.a (North Sea, Skagerrak, and Kattegat). ICES Advice: Recurrent Advice. Report. <https://doi.org/10.17895/ices.advice.7812>.

⁷⁸ Council Regulation (EU) 2021/1239 of 29 July 2021 amending Regulations (EU) 2019/1919, (EU) 2021/91 and (EU) 2021/92 as regards certain fishing opportunities for 2021 in Union and non-Union waters. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1239&qid=1645713877878>. There is no overall TAC, but the sum of the shares specified for the EU (116555 t), the UK (11745 t), Norway (0 t) and the Faroe Islands (0 t) is 128300 t.