

What is the ‘best available scientific advice’ for setting Total Allowable Catches (TACs)?

Spoiler alert: ICES headline advice is generally the best available scientific advice. That is all EU decision-makers really need to know. But we hope you will take the time to read the whole story.

Science is, or at least should be, at the heart of EU fisheries management. The EU’s Common Fisheries Policy (CFP) requires decision-makers to establish measures in accordance with the ‘*best available scientific advice*’. But what does that mean concretely for setting Total Allowable Catches (TACs) that limit catches to sustainable levels?

[TACs are often set at or above the scientifically advised level](#),¹ and rarely are they set at lower levels that properly factor in ecosystem needs or uncertainty. Like a tomato-mozzarella-loving chef negligently killing off his basil by using all its leaves at once, this approach jeopardises the health and productivity of fish stocks and the ecosystem they are part of. This document provides an overview of key provisions in the CFP, and explains

1. why the official scientific advice provided by the International Council for the Exploration of the Sea (ICES) constitutes the ‘best available scientific advice’ for the purpose of TAC-setting; and
2. why this advice represents the maximum catch level not to be exceeded, rather than a mere target. This means that TACs in many cases need to be set below this level, in order to satisfy three key requirements of the CFP:
 - a. the maximum sustainable yield (MSY) objective,
 - b. the [precautionary approach](#),² and

¹ ClientEarth (2020). Taking stock: are TACs set to achieve MSY? October 2020. <https://www.documents.clientearth.org/library/download-info/taking-stock-2020-are-tacs-set-to-achieve-msy/>. Shorter web story: <https://www.clientearth.org/latest/latest-updates/opinions/eu-overfishing-deadline-missed-what-now/>

² ClientEarth (2020). Caution! A TAC-Setter’s Guide to the ‘Precautionary Approach’. December 2020. <https://www.clientearth.org/latest/documents/caution-a-tac-setter-s-guide-to-the-precautionary-approach/>

- c. the [ecosystem-based approach to fisheries management](#).³

What the law says

The 'establishment of measures in accordance with the best available scientific advice' is one of the principles of good governance in the CFP Basic Regulation, the legislative backbone of the body of EU fisheries laws.⁴ The setting of TACs is one of the key 'measures' in EU fisheries management to limit fishing mortality – a measure of the part of fish dying due to fishing rather than natural causes. Several provisions in other pieces of EU legislation adopted under the CFP make clear that ICES advice on this topic is indeed the best scientific advice available,⁵ since it meets the following key criteria:

- ICES advice is public and supported by the most up-to-date scientific data and methods;⁶
- ICES is an independent scientific body recognised by the EU and at international level;
- ICES has a Memorandum of Understanding with the EU.

ICES advice on fishing opportunities is thus the 'best available scientific advice'. But the fact that it often contains different catch scenarios reflecting different management baselines raises a question: which of these options is the 'best available' one to meet the CFP's sustainability rules and objectives? It can feel like going to the bank to get advice on opening a pension account and getting a menu of options. Which one is best?

The law tells decision-makers what to prioritise. The key provisions to consider here are laid out in Articles 2(2) and 2(3) of the CFP Basic Regulation:

- The requirement to 'apply the precautionary approach to fisheries management';
- The requirement to ensure environmental long-term sustainability 'consistent with achieving economic, social, and employment benefits and of contributing to the availability of food supplies';
- The MSY objective, i.e. to ensure fishing 'restores and maintains populations of harvested stocks **above** levels which can produce the maximum sustainable yield' (emphasis added);
- The requirement that for this purpose 'the maximum sustainable yield exploitation rate shall be achieved (...) **at the latest by 2020 for all stocks**' (emphasis added);
- The requirement to 'implement the ecosystem-based approach to fisheries management so as to ensure that negative impacts of fishing activities on the marine ecosystem are minimised'.

The key terms 'maximum sustainable yield', '[precautionary approach](#)' and '[ecosystem-based approach](#)' are further defined in Articles 4(7), (8) and (9) of the CFP Basic Regulation. The latter two are discussed in more detail in two separate briefings published by ClientEarth.^{7,8} Taken together, they mean that TACs agreed under the CFP need to:

- be more cautious where data are limited, in case the true (unknown) situation is worse than assumed;
- be geared towards keeping/restoring stocks above healthy, productive levels that can deliver MSY,

3 ClientEarth (2020). How (not) to implement the ecosystem-based approach when setting Total Allowable Catches (TACs). December 2020. <https://www.clientearth.org/latest/documents/how-not-to-implement-the-ecosystem-based-approach-when-setting-total-allowable-catches-tacs/>

4 Article 3(c) of Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013. Referred to as 'CFP Basic Regulation'.

5 For example Recitals 8 and 9 of the Western Waters Multiannual Plan (Regulation of the European Parliament and of the Council No 2019/472 of 19 March 2019).

6 ICES Advice basis Published 20 December 2019, p.1; https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2019/2019/Introduction_to_advice_2019.pdf

7 ClientEarth (2020). See footnote 2 for full reference.

8 ClientEarth (2020). See footnote 3 for full reference.

- correspond to a fishing mortality at or below that associated with MSY, i.e. F_{MSY} , and
- consider the wider ecosystem dynamics. This means, for example, setting TACs for certain stocks in a fishery below the advice for that single stock, in order to avoid overfishing other stocks caught in the same fishery or depriving other parts of the ecosystem, such as seabirds, of their food source.

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Overview of scientific advice on fishing opportunities

ICES has developed a framework to translate the legal requirements and objectives into concrete scientific catch advice figures. ICES' approach depends a) on the available knowledge and data for the stock in question and b) on whether a precautionary management plan or strategy has been agreed by the relevant management parties (e.g. the EU and third countries). The two key approaches used are the 'ICES MSY approach' (when the available data allow for a full, MSY-based stock assessment), and the 'ICES precautionary approach' (when data are more limited).

Both of these are closely linked to the use of two biological key indicators, (1) the mortality caused by fishing, 'fishing mortality', represented by the abbreviation 'F', and (2) the size of the stock, or 'spawning stock biomass' ('SSB'). F is a measure of the fishing pressure, and the SSB refers to adult fish contributing to the reproduction of the stock. These two indicators are the concrete scientific expression of what Article 2(2) of the CFP Regulation is talking about when it refers to "*exploitation of marine biological resources*" and "*biomass levels of capable of producing maximum sustainable yield*" – which means decision-makers have to pay close attention to them to respect the law.

In order to assess whether a stock is in a healthy, productive state and exploited sustainably, and to provide scientific advice on how much catch can be taken, different biological reference points are used against which the status of these two indicators, F and SSB, is measured. This gives an idea where a stock or its exploitation is in relation to a desirable situation (i.e. sustainable fishing and stock size capable of producing the MSY) or an undesirable situation (i.e. unsustainable fishing or stock size, or even at risk of collapse). [ClientEarth's briefing on biological reference points](#) provides a more in-depth explanation on this topic.⁹

ICES provides its official headline catch advice at the top of the advice sheet it creates. This headline catch advice is based on the advice basis agreed between ICES and its client. But in addition to this, ICES often provides a table with additional so-called 'catch scenarios' or 'catch options' further down in the same document. Like for our bank customer looking for a good option for her pension, these scenarios complicate things. Moreover, ICES occasionally issues responses to 'special requests' from its clients, such as the EU. These responses provide further catch scenarios not covered in the official stock-specific advice on fishing opportunities (imagine our bank customer asking for scenarios if she goes on expensive holidays every three months). [ClientEarth's briefing on different catch scenarios for bycatch stocks](#) looks at this topic in more detail.¹⁰

The resulting catch options, scenarios or replies to special requests often differ considerably from the official headline advice, both in the catch levels that they would allow for, and in the sustainability of the

⁹ 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/>

¹⁰ ClientEarth (2020). Ask the right question, get the right answer: Scientific advice for bycatch or non-targeted stocks that have zero catch advice.

<https://www.documents.clientearth.org/library/download-info/ask-the-right-question-get-the-right-answer-scientific-advice-for-bycatch-or-non-targeted-stocks-that-have-zero-catch-advice/>

corresponding exploitation and the impact on the stock. So, which of these scenarios is the 'best available scientific advice' to be followed in line with the legal requirements?

ICES headline advice = best available scientific advice

The simple answer: the best scientific advice is that following the ICES MSY approach (where available) or the ICES precautionary approach (where data are more limited). This is generally found in ICES' headline advice. These figures represent the maximum advised catch level, meaning that the TAC should not exceed, but can – and in many cases should – be set below this level. Setting the TAC below the level of the advice serves to:

- avoid overfishing other, less abundant stocks caught in the same fishery;
- factor in ecosystem dynamics, such as additional pressures on the stock or ecosystem as a whole, like climate change, or food supply needs of other parts of the ecosystem, such as seabirds;
- exercise caution where information is limited or uncertain.

The EU decision-maker setting TACs is not so different from our basil-loving chef (who would do well to keep a few extra leaves on his favourite basil plant), or our bank customer seeking the best pension fund. Both have to balance the present and the future. And both have to focus on the core of the advice.

In the case of EU decision-makers, so much is at stake: not only preserving biodiversity, but also ensuring a bright future for producers and consumers of seafood in the EU in the long-term.

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