

## Belgium request for a revision of catch advice in 2019 for sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea)

### Advice summary

ICES advises that when the MSY approach is applied using the assessment conducted in spring 2019, which incorporates the 2019 interbenchmark settings, catches in 2019 should be no more than 1488 tonnes.

ICES notes that the advice provided in June 2019 for 2020 for this stock assumed that catches in 2019 would be equal to the established TAC for 2019 of 841 tonnes. ICES advises that if the TAC for 2019 is revised to 1488 tonnes, the advice for 2020 from June 2019 would no longer be valid. If the TAC for 2019 is revised to 1488 tonnes, ICES advises that when the EU multiannual plan (MAP) for Western waters and adjacent waters is applied, catches in 2020 that correspond to the F ranges in the MAP are between 918 and 2402 tonnes. According to the MAP, catches higher than those corresponding to  $F_{MSY}$  (1559 tonnes) can only be taken under conditions specified in the MAP, while the entire range is considered precautionary when applying the ICES advice rule.

### Request

The present advice is in response to a request from Belgium received on 31st July 2019. Belgium requested a revision of advice 2019 on Sole VII f, g taking into account the latest information of the interbenchmark.

### Elaboration on the advice

In June 2019, ICES provided advice on fishing opportunities for sole in divisions 7.f and 7.g in 2020 based on a stock assessment that incorporated the assessment protocol agreed during the interbenchmark held 29–31 January 2019 (ICES, 2019a) and updated reference points (ICES, 2019b). To respond to the request from Belgium, a prediction of catches for 2019 – based on the results of the 2019 assessment (ICES, 2019b) and using the maximum sustainable yield (MSY) approach instead of the established TAC of 841 tonnes – have been used to provide this revised advice for 2019 for the stock. ICES advises that when the MSY approach is applied, catches in 2019 should be no more than 1488 tonnes.

**Table 1** Sole in divisions 7.f and 7.g. Predicted catch at  $F = F_{MSY} = 0.297$  for 2019 using the 2019 assessment of the stock (ICES, 2019b) that incorporates the most recent interbenchmark conducted 29–31 January 2019.

Basis	Catch (2019)	Wanted catch * (2019)	Unwanted catch * (2019)	F wanted catch ** (2019)	SSB (2020)	% SSB change ***	% TAC change ^	% Advice change ^^
MSY approach: $F_{MSY}$	1488	1356	132	0.297	4869	10.1%	62%	60%

\* Total catches are calculated from wanted catch (fish that would be landed in the absence of the EU landing obligation), based on the average discard rate in 2016–2018 (8.9% in weight).

\*\* “Wanted” and “unwanted” catch are used to describe fish that would be landed and discarded, respectively, in the absence of the EU landing obligation.

\*\*\* SSB 2020 relative to SSB 2019.

^ Total catch in 2019 relative to the TAC in 2018 (920 t).

^^ Advice value for 2019 relative to the advice value for 2018 (931 t).

The advice for 2020 issued by ICES in June 2019 (ICES, 2019c) assumed that catches in 2019 would be equal to the established TAC for 2019 of 841 tonnes (EU, 2019). If the TAC for 2019 is not revised, then the advice for the stock issued in June 2019 for 2020 is still valid. If the TAC for 2019 is revised upwards to 1488 tonnes and is caught, the spawning biomass for the stock will be lower at the beginning of 2020 than predicted in the June 2019 advice for 2020, which assumed catches of 841 tonnes in 2019. Therefore, if the TAC for 2019 is revised to 1488 tonnes, ICES advises that when the EU multiannual plan (MAP) for Western waters and adjacent waters is applied, catches in 2020 that correspond to the F ranges in the MAP are between 918 and 2402 tonnes. According to the MAP, catches higher than those corresponding to  $F_{MSY}$  (1559 tonnes) can only be taken under conditions specified in the MAP, while the entire range is considered precautionary when applying the ICES advice rule.

**Table 2** Sole in divisions 7.f and 7.g. Catch scenarios for 2020 assuming catches at  $F = F_{MSY}$  of 1488 t in 2019. Weights are in tonnes.

Basis	Total catch * (2020)	Wanted catch ** (2020)	Unwanted catch ** (2020)	F Wanted (2020)	SSB (2021)	% SSB change ***	% TAC change ^	% Advice change ^^
ICES advice basis								
EU MAP <sup>^^^</sup> : $F_{MSY}$	1559	1420	139	0.297	4734	-2.8	85	4.8
EU MAP $F_{MSY}$ lower	918	836	82	0.165	5309	9.0	9.2	-38
EU MAP $F_{MSY}$ upper	2402	2188	214	0.499	3982	-18.2	186	61
Other scenarios								
$F = 0$	0	0	0	0	6136	26	-100	-100
$F_{pa}$	2090	1904	186	0.420	4259	-12.6	149	40
$F_{lim}$	2691	2452	239	0.578	3724	-24	220	81
$SSB_{2021} = B_{lim}$	5146	4688	458	1.65	1592	-67	512	246
$SSB_{2021} = B_{pa} = MSY B_{trigger}$	4399	4008	391	1.21	2228	-54	423	196
$F = F_{2019}$	1559	1420	139	0.297	4734	-2.8	85	4.8

\* Total catches are calculated from wanted catch (fish that would be landed in the absence of the EU landing obligation), based on the average discard rate in 2016–2018 (8.9% in weight).

\*\* “Wanted” and “unwanted” catch are used to describe fish that would be landed and discarded, respectively, in the absence of the EU landing obligation.

\*\*\* SSB 2021 relative to SSB 2020.

^ Total catch in 2020 relative to the TAC in 2019 (841 t).

^^ Advice value for 2020 relative to the advice value assuming fishing at  $F_{MSY}$  in 2019 (1488 t).

^^^ EU multiannual plan (MAP) for the Western Waters and adjacent waters (EU, 2019).

## Basis of the advice

### Background

ICES provided advice in June 2018 on fishing opportunities for 2019 for the sole stock in divisions 7.f and 7.g. An inter-benchmark on the stock was subsequently held 29–31 January 2019, which changed the perception of the stock and resulted in an upward revision of the stock size and recruitment. In June 2019, ICES provided advice on fishing opportunities for sole in divisions 7.f and 7.g in 2020, based on a stock assessment that incorporated the assessment protocol agreed during the inter-benchmark and updated reference points. In the forecast for 2020, the assumption for catches in 2019 was based on a catch constraint corresponding to the established TAC for 2019 of 841 tonnes. This led to a fishing mortality for 2019 that was well below the updated  $F_{MSY}$  for the stock. A request for additional advice for 2019, based on the assessment results that would include the inter-benchmark settings and updated reference points, was received on 31st of July 2019. The advice provided in the response to this request is based on  $F = F_{MSY}$ .

### Methods

The results of the 2019 assessment (ICES, 2019b) were used to make an in-year prediction of the catch assuming the MSY approach ( $F = F_{MSY} = 0.297$ ) for 2019, and for a revised forecast for 2020.

**Table 3** Sole in divisions 7.f and 7.g. Main input parameters for generating the updated advice for 2019.

Variable	Value	Notes
$F_{ages\ 4-8}$ (2019)	0.297	$F_{MSY}$
$SSB_{2019}$	4420	Model output from ICES (2019b) – in tonnes.
$R_{age\ 1}$ (2019)	4975	GM(1971–2016) – in thousands.

**Table 4** Sole in divisions 7.f and 7.g. Main input parameters for generating the forecast for 2020.

Variable	Value	Notes
SSB <sub>2020</sub>	4870	Biomass at the beginning of 2020 – in tonnes.
R <sub>age 1</sub> (2020)	4975	GM(1971–2016) – in thousands.
Catch (2019)	1488	Revised advised catches 2019 (MSY approach $F_{MSY} = 0.297$ applied to landings) – in tonnes.
Wanted catch (2019)	1356	Revised advised catches 2019 minus a 8.9% discard ratio in weight – in tonnes.
Unwanted catch (2019)	132	Average ratio of 2016–2018 (8.9%) – in tonnes.

### Sources and references

EU. 2019. Council Regulation (EU) 2019/124 of 30 January 2019 fixing for 2019 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. Official Journal of the European Union, L 29: 1–166. <http://data.europa.eu/eli/reg/2019/124/oj>.

ICES. 2019a. Inter-benchmark Protocol on Sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea) (IBPBristol). ICES Scientific Reports, 1:08. 106 pp. <http://doi.org/10.17895/ices.pub.4708>.

ICES 2019b. Report of the Working Group for the Celtic Seas Ecoregion. ICES Scientific Reports, 1:29. 1078 pp. <http://doi.org/10.17895/ices.pub.4982>.

ICES. 2019c. Sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, sol.27.7fg. 7 pp. <https://doi.org/10.17895/ices.advice.4805>.

*Recommended citation:* ICES. 2019. Belgium request for a revision of catch advice in 2019 for sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea). In Report of the ICES Advisory Committee, 2019. ICES Advice 2019, sr.2019.18, <https://doi.org/10.17895/ices.advice.5591>