

EU standing request on catch scenarios for zero TAC stocks 2020; herring (*Clupea harengus*) in divisions 6.a and 7.b–c (West of Scotland, West of Ireland)

Service summary

ICES has provided forecasts on the development of herring (*Clupea harengus*) in divisions 6.a and 7.b–c (West of Scotland, West of Ireland), with zero-catch TAC and with the current monitoring TAC of 4840 tonnes under two different uptake scenarios for the monitoring TAC in 2020. Both scenarios show an increase in spawning-stock biomass (SSB) in 2021, and a stable or small (up to +6%) increase in SSB in 2022.

Request

EU DGMARE has requested ICES to evaluate the following:

For by-catch and for target stocks where ICES is advising zero TACs but the stock is caught in mixed-fisheries with other species where non-zero catches are advised, where possible ICES will provide the EU with illustrative catch scenarios that are consistent with the advice for the main target species in the fishery.

Where the zero TAC advice is given for a target stock subject to a MAP the catch scenarios for the zero TAC stock should include scenarios consistent the F_{MSY} range in the target stock (e.g. F_{MSY} , $F_{MSY\ Lower}$ and intermediate values) and quantify the corresponding changes in biomass. Scenarios should therefore also be produced that give, as a minimum, a stable biomass and increasing biomass if F_{MSY} ranges do not†. This may involve carrying out mixed fisheries forecast or providing F -multipliers consistent with the advice for the target stocks or where forecasts are not possible the catch scenario should be based the best available scientific information. Where possible ICES should provide catch scenarios which include changes in fishing pattern if they considered likely by ICES.*

For stocks where ICES is advising zero TACs but where a monitoring fishery would be useful to monitor stock development, where possible ICES will provide catch scenarios for a monitoring TAC. This should be the minimum level of catches needed to provide sufficient data for ICES to continue providing scientific advice on the state of this stock.

Basis of the advice

The information presented here represents two stocks that are assessed as one (herring in Division 6.a (N), and herring in divisions 6.a (S) and 7.b–c). The advice is based on trends from an analytical assessment. The update assessment shows that SSB has been declining since 2000 and is at the lowest level in the time-series. Recruitment is also at a low level with no strong cohorts evident in recent years. Fishing mortality has reduced since the introduction of the zero catch advice and is currently in line with the monitoring TAC in 2016.

Given the current zero catch advice for herring in divisions 6.a and 7.b–c and that a monitoring TAC has been agreed for 2020, exploratory forecasts were carried out, with different catches assumed in the intermediate year (2020). The two scenarios considered were:

1. Full uptake of the monitoring TAC (4840 tonnes) in the intermediate year (2020).
2. Partial uptake of the monitoring TAC (3100 tonnes) in the intermediate year (2020). This assumes full uptake in Division 6.a (S), an uptake of 1360 tonnes in divisions 7.b–c, and an uptake based on the 2019 catches in Division 6.a (N) (1740 tonnes).

* This is because the safeguards in the MAPs are measured in rebuilding of biomass, not fishing mortality levels.

† E.g. northern seabass 2020 catch advice (from June 2019), where both F_{MSY} and $F_{MSY\ lower}$ yielded negative biomass for a stock slightly above B_{lim} .

All catch options show an increase in SSB in 2021. Under the zero TAC option, a further 6% increase in SSB is forecasted for 2022. Full uptake of the monitoring TAC will lead to an unchanged SSB, while a partial uptake of the monitoring TAC in 2021 will result in an SSB increase of 2% in 2022.

Results

Table 1 Herring in divisions 6.a and 7.b–c. Assumptions made for the intermediate year and in the forecast for scenario 1.

Variable	Notes
$F_{ages(wr)3-6}$ (2020)	F corresponding to the assumed total catch for 2020.
$R_{age(wr)1}$ (2020–2022)	Geometric mean 2015–2019.
SSB (2020)	Tonnes; calculated in the short-term forecast based on the assumptions for the intermediate year.
Total catch (2020)	Tonnes; Monitoring TAC 4840 tonnes.

Table 2 Herring in divisions 6.a and 7.b–c. Catch scenarios based on full uptake of the TAC.

Basis	Total catch (2021)	% SSB change 2021 relative to 2020	% SSB change 2022 relative to 2021	% TAC change 2021 relative to 2020
Precautionary approach: zero catch	0	+15	+6	–100
Other scenarios				
TAC=Monitoring TAC	4840	+9	0	0

Table 3 Herring in divisions 6.a and 7.b–c. Assumptions made for the intermediate year and in the forecast for scenario 2.

Variable	Notes
$F_{ages(wr)3-6}$ (2020)	F corresponding to the assumed total catch for 2020.
$R_{age(wr)1}$ (2020–2022)	Geometric mean 2015–2019.
SSB (2020)	Tonnes; calculated in the short-term forecast based on the assumptions for the intermediate year.
Total catch (2020)	Tonnes; monitoring TAC 3100 tonnes.

Table 4 Herring in divisions 6.a and 7.b–c. Catch scenarios based on partial uptake of the monitoring TAC.

Basis	Total catch (2021)	% SSB change 2021 relative to 2020	% SSB change 2022 relative to 2021	% TAC change 2021 relative to 2020
Precautionary approach: zero catch	0	+15	+5	–100
Other scenarios				
TAC = Partial uptake of the Monitoring TAC	3100	+12	+2	–26

Sources and references

ICES 2020. Herring Assessment Working Group for the Area South of 62°N (HAWG). ICES Scientific Reports, 2:60. 1054 pp. <http://doi.org/10.17895/ices.pub.6105>.

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