

## EU standing request on catch scenarios for zero TAC stocks 2020; western Baltic spring-spawning herring (*Clupea harengus*)

### Service summary

ICES has provided estimates of the estimated catches of western Baltic spring-spawning herring (*Clupea harengus*), under the assumption that only the fleets that target other species or stocks will be fishing in 2021.

For herring (*Clupea harengus*) in subdivisions 20–24, 3308 tonnes of spring spawners (Skagerrak, Kattegat, and western Baltic) are estimated to be caught, assuming the same catch as in the intermediate year 2020 for the human-consumption fleet in the North Sea (fleet A), which targets North Sea autumn-spawning herring, and for fleet D, which targets sprat.

### 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

Given the current zero catch advice for western Baltic spring-spawning (WBSS) herring, the first request was fulfilled by running a forecast scenario, where only those fleets that catch WBSS herring, but target other stocks, were allowed to fish in 2021 (Table 1). The human-consumption fleet in the North Sea (fleet A), which targets North Sea autumn-spawning (NSAS) herring, is assumed to catch 3184 tonnes of the WBSS herring stock, based on the average catch in 2017–2019. The fleet that targets sprat in Division 3.a (fleet D) is assumed to catch 123 tonnes, based on a 5.47% utilization of the 2020 TAC (average utilization 2017–2019) and 33.81% of WBSS in the catch (average split in Division 3.a in 2017–2019).

Regarding the scenario where the spawning–stock biomass (SSB) is estimated to remain stable between 2021 and 2022, the catch scenarios (Table 1) show that fishing at  $F_{MSY}$  (0.31) in 2021 is expected to result in a slight (–1%) decline in SSB in 2022. The catch scenario when fishing at  $F_{2020}$  is expected to result in a 13% increase in SSB in 2022, and the scenarios for the Baltic Sea management plan (MAP) all result in SSB increases in 2022.

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\* 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  $F_{MSY\ Lower}$  gave negative biomass for a stock slightly above  $B_{lim}$

## Results

**Table 1** Herring (*Clupea harengus*) in subdivisions 20–24, spring spawners (Skagerrak, Kattegat, and western Baltic). Additional catch scenarios. All weights are in tonnes.

Basis	Total catch (2021)	F <sub>3–6</sub> (2021)	SSB* (2021)	SSB* (2022)	% SSB change **	% advice change ***
Catch for bycatch fleets only ^	3308	0.026	66 574	85 251	28	
F = F <sub>MSY</sub>	24 535	0.31	64 618	64 275	–1	
F = F <sub>2020</sub>	14 410	0.170	65 603	73 849	13	
MAP: F = F <sub>MSY</sub> × (SSB <sub>2020</sub> /MSY B <sub>trigger</sub> )	10 273	0.118	65 973	77 674	18	
MAP: F = F <sub>MSY lower</sub> × (SSB <sub>2020</sub> /MSY B <sub>trigger</sub> )	7291	0.082	66 230	80 610	22	
MAP: F = F <sub>MSY upper</sub> × (SSB <sub>2020</sub> /MSY B <sub>trigger</sub> )	12 393	0.144	65 786	75 602	15	

\* For spring-spawning stocks, the SSB is determined at spawning time and is influenced by fisheries and natural mortality between 1 January and spawning time (April).

\*\* SSB (2022) relative to SSB (2021).

\*\*\* The advised catch in 2020 was 0 tonnes.

^ Only the A-fleet that targets NSAS herring and the D-fleet that targets sprat are allowed to fish, assuming the same catch as in the intermediate year 2020 (C- and F-fleets have zero catch).

## Sources and references

ICES 2020. Herring in Division 3.a and subdivisions 22–24, spring spawners (Update Assessment). *In* Herring Assessment Working Group for the Area South of 62°N (HAWG), Section 3. *In prep.* Section 3 is available separately at the [HAWG](#) website.

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