

ECOREGION **Baltic Sea**
SUBJECT **EU request to ICES on the effect of increased quota flexibility for 2014 – 2015 on pelagic stocks and Baltic salmon**

Background

To mitigate the effects of the Russian ban on the import of certain fisheries products, the European Commission has been asked to allow for an increase in the proportion the 2014 quotas of mackerel, North Sea herring, Atlanto-Scandian herring, and blue whiting, as well as of herring, sprat, and salmon from the Baltic Sea, that can be carried over to 2015.

Request

ICES is asked, as a matter of urgency, to assess the level of risk (in terms of the fishing mortality exceeding F_{msy}) to those stocks if the amount of the 2014 TAC that will not be fished in 2014, and may be carried over to 2015, is increased from the current limit of 10% to either:

- a) 20%, or*
- b) 30%.*

This arrangement is exceptional and would apply only for one year; i.e. from 2014 to 2015.

For the purpose of this calculation, ICES should assume that the long-term management arrangements currently in place regarding the fixing of TACs for these stocks will be adhered to unchanged in 2015.

ICES response

Baltic sprat, Baltic herring, North Sea herring, Atlanto-Scandian herring, blue whiting, and Northeast Atlantic mackerel

Currently ICES does not evaluate risk or probability of catch options resulting in F s that exceed F_{MSY} , rather ICES gives deterministic catch options and gives the most likely outcome in terms of values of F and SSB . ICES has examined the current estimated SSB and potential changes in SSB for the relevant sprat, herring, blue whiting, and mackerel stocks; these are not expected to be of any concern. An examination of stock–recruitment plots supports the view that, for these stocks in their current state the flexibility of 20% or 30% banking of TAC in 2014, and borrowing of TAC in 2015, will not impact the expected mean recruitment for 2015. To evaluate the impact of changes in target F due to the suggested flexibility ICES examined yield-per-recruit curves for herring, mackerel, and blue whiting stocks where these are available and concluded that these curves are generally linear, close to the values of F_{MSY} or F_{MP} . Thus, a reduced yield followed by a balanced increase in yield is unlikely to substantively change the mean F over the period.

In the context of the request ICES makes the following observations:

- The proposed flexibility would, if utilized, result in reduced F in 2014. The change in F will be of a similar order as the proposed level of flexibility of either –20% or –30%. The transfer of fishing possibilities to 2015 will result in an increase in F in 2015 of a similar magnitude (approximately +20% or +30%) if these are fully utilized. Thus it is expected that F in 2014 will have a greater than 50% probability of being below F_{MSY} and F in 2015 will have a greater than 50% probability of being above F_{MSY} . It is expected that the mean F over the two years will be similar to the F that would be result from 100% of each annual TAC taken in its respective year.
- The proposed flexibility, if utilized, is expected to result in a slightly higher biomass on 1 January 2015 than would be expected from a complete taking of the TAC in 2014. For comparison, a negligible change to biomasses on 1 January 2016 would result from 100% of each annual TAC being taken in its respective year.
- The flexibility described is likely to have a slightly positive, but effectively negligible impact on precautionary considerations defined by the probability of $SSB < B_{lim}$ during the two years.

In order for ICES to give appropriate advice for 2016 it would be useful to know the effective TACs that result from the flexibility allowed for these stocks for 2015.

Baltic salmon

The Baltic salmon catch advice is given separately for two areas: salmon in Subdivisions 22–31 (Main Basin and Gulf of Bothnia) and salmon in Subdivision 32 (Gulf of Finland).

Salmon in Subdivisions 22–31 (Main Basin and Gulf of Bothnia)

ICES advises on the basis of the MSY approach that total commercial sea catch in 2015 should not exceed 116 000 salmon. Additionally, longer-term stock-specific rebuilding measures are advised for the weaker stocks.

The catch advice is not based on F_{MSY} , but on an escapement strategy aiming to reach the MSY smolt production reference point (= 75% of the potential smolt production capacity) for all wild rivers.

The TAC in 2014 is 106 587 salmon. A flexibility of 20% would mean that a quota of 21 317 salmon could be carried over from 2014 to 2015. The number for 30% flexibility is 31 976 salmon.

The consequences of transferring part of the 2014 TAC to 2015 depend on whether the reduction in 2014 and the increase in 2015 take place mostly in open sea or in coastal fisheries and, additionally, on whether they take place before or after the salmon spawning run season (a proportion of salmon die upon spawning).

The open-sea fishery at the start of the year catches salmon that may or may not mature in that year, whereas the open-sea fishery at the end of the year catches salmon that will not mature in that year. On the other hand, coastal fisheries catch mainly salmon on their spawning migration. Therefore, if the reduction in catches in 2014 (with respect to the TAC) took place towards the end of the year (after the spawning run season) and the increase in 2015 took place in the first quarter of the year, the effect on the salmon populations would be negligible.

If the reduction in catch in 2014 (with respect to the TAC) is spread throughout the year rather than occurring exclusively at the end of the year (after the spawning run season), the following considerations can be made. In recent years, more than half of the reported sea landings of salmon are taken in coastal fisheries, which catch mainly salmon on their spawning migration. Since a proportion of salmon die upon spawning, taking less catch in 2014 does not imply a corresponding increase in the number of salmon available for the fishery in 2015. However, taking less catch in 2014 will likely result in an increased number of spawners in 2014 and, hence, more smolts about 4–5 years later. This, in turn, implies a higher probability that smolt production will be at or above the MSY smolt production reference point 4–5 years after 2014.

The “Outlook for 2015” table presented in the May 2014 advice includes a scenario for which the total commercial sea catch in 2015 is 139 000 salmon, which corresponds to 20% above the advice. The predicted impact on the number of spawners in 2015 is a reduction of 5% relative to the predicted number of spawners resulting from the catch advised by ICES. This is expected to lead to a lower probability of reaching the MSY smolt production reference point than if the catch is limited to the level advised by ICES.

Therefore, if a carry-over of part of the TAC from 2014 to 2015 results in a total commercial sea catch of more than 116 000 salmon in 2015, the quota flexibility cannot be considered consistent with the MSY approach. However, the flexibility would be unlikely to have a large impact on the sustainability of the salmon stocks or the long-term probability of reaching MSY targets.

Salmon in Subdivision 32 (Gulf of Finland)

There is no analytical assessment or short-term forecast for salmon in Subdivision 32, and the ICES advice for 2015 is based on precautionary considerations. Therefore, ICES cannot assess the level of risk (in terms of the fishing mortality exceeding F_{MSY} , as requested, or in terms of the smolt production being below the MSY reference point) under the quota flexibility indicated in the request.

ICES advice for 2015 is based on precautionary considerations that the effort in fisheries catching salmon should not increase. Assuming that the amount of reared salmon released in 2014 is similar to previous years, this corresponds to a total commercial sea catch in 2015 not exceeding 11 800 salmon.

All catches of salmon are taken in fisheries exploiting salmon on their spawning migration. Since a proportion of salmon die upon spawning, taking less catch in 2014 does not imply a corresponding increase in the number of salmon available for the fishery in 2015. It is therefore likely that a catch above the ICES advice for 2015, resulting from a carry-over of part of the 2014 TAC, would require an increase in the effort in fisheries catching salmon. Such an increase would not be consistent with the precautionary considerations on which ICES bases its advice.