

ECOREGION North Sea
SUBJECT EU request on interannual quota flexibility for plaice in the North Sea

Advice summary

ICES concludes that the multiannual management plan is robust to inclusion of interannual quota flexibility in terms of the probability of the stock biomass falling below B_{lim} , and without substantial changes in average yield. This conclusion is conditional on the interannual quota flexibility being suspended when the stock is estimated to be outside safe biological limits.

Request

The EU long term management plan for plaice and sole in the North Sea has been in force since 2007 (Regulation (EC) No 676/2007). It was envisaged that this plan would be revised once both stocks had been brought within precautionary limits for two consecutive years, but it was decided to maintain the existing harvest control rules pending consultations with Norway for an agreed EU-Norway management plan for plaice, or for a jointly agreed mixed fisheries plan for the North Sea. As an interim measure, the Commission has nevertheless proposed that fishing effort on sole and plaice can be maintained at its 2012 level.

In order to explore possible options for further changes to the existing plan, ICES is requested to evaluate the impact of an inter-annual quota flexibility of +/-10% (for plaice only) on the performance of the plan with respect to long term yield and risk. For the purpose of this exercise, ICES should assume that the fishing effort ceiling for the sole and plaice fisheries will be maintained at its 2012 level.

Elaboration on the advice

ICES has evaluated the $\pm 10\%$ interannual quota flexibility scheme for plaice in the context of the plaice and sole management plan. ICES simulated some worst case examples of interannual quota flexibility implementation, based on the argument that if the plan is found to be precautionary in worst cases, the overall conclusion is that the multiannual management plan is robust to the inclusion of flexibility.

The different scenarios showed that adding the interannual quota flexibility did not substantially increase the probability of SSB falling below B_{lim} , compared to scenarios without interannual quota flexibility. Average yield did not change substantially either.

A suspension rule where the interannual quota flexibility is not allowed when the stock is estimated to be outside safe biological limits (SBL) is applied. Previous explorations with North Sea herring (ICES, 2012a) suggest that such a suspension rule is essential to the conclusion.

This advice is an addendum to the previous advice on the evaluation of the North Sea flatfish management plan (ICES, 2010) and should be read in this context. Following the evaluation of the Management Plan 2010 ICES advised that "... the proposed management plan is considered precautionary." ICES (2012b) later considered two amendments to the management plan and concluded that the proposed amendments are consistent with the precautionary approach and the principle of maximum sustainable yield.

Basis of the advice

Interannual quota flexibility is an addition to the North Sea Flatfish Multiannual Management Strategy plan (Council Regulation (EC) No. [676/2007](#)). The plan was evaluated by ICES (2010), and STECF also presented an evaluation in Simmonds *et al.* (2010). The simulations forming the basis for the present advice were performed using the same software and model formulation as in the ICES advice in 2012 (details in Coers *et al.* (2012)), and uses the precautionary criterion recommended by ICES (2013). Full details of the present evaluation can be found in Brunel and Miller (2013).

The management plan is set up for both plaice and sole in the North Sea. The impact of interannual quota flexibility for plaice was evaluated for both plaice and sole. Interannual quota flexibility is already in place for sole in the North Sea.

For all scenarios tested, the F-target for plaice is 0.30, the maximal TAC change between consecutive years is 15%, and the maximum allowable effort (MAE) is capped at the 2012 level. For most scenarios the TAC is assumed to be fully utilized (no mixed-fisheries interactions considered). Two additional scenarios were examined to illustrate mixed-

fisheries implications: where the fishery stops as soon as one of the TACs for plaice or sole are caught (no over-quota catch), and where fishery continues until both TACs are fished (over-quota catch). None of these scenarios demonstrated a negative effect of interannual quota flexibility on the performance of the management plan.

The use of interannual quota flexibility is based on considerations that are beyond the ICES simulation-testing studies and is largely a socio-economic decision. For this reason, and because the implementation of the regulation is at the Member State level and the decision to use the interannual quota flexibility option in a given year may vary between Member States, it is not possible to assign probabilities of occurrence to the different scenarios that were considered. As noted earlier, the scenarios tested are meant to represent some worst case examples of interannual quota flexibility implementation, where the amount banked or borrowed always reaches 10% of the total stock TAC (i.e. the maximum possible).

ICES has studied the following scenarios:

- Scenario 1 (“null”): No banking or borrowing in any year.
- Scenario 2 (“banking”): Banking 10% every year (using it in the following year).
- Scenario 3 (“borrowing”): Borrowing 10% every year (paying back in the following year).
- Scenario 4 (“alternate”): 10% banking and borrowing in alternate years (e.g. bank in year 1; borrow in year 2; bank in year 3; borrow in year 4;...).
- Scenario 5 (“worst case”): Following a period of successive poor recruitments, 10% banking in year 1; 10% borrowing in each subsequent year.
- Scenario 6 (“yield stability”): Use the interannual quota flexibility scheme to keep the yield as close as possible (within the limits of the banking and borrowing flexibility) to the actual yield in the previous year.

The interannual quota flexibility rules were interpreted as follows:

Interannual quota flexibility

The percentage (maximum 10%) that can be banked or borrowed in year y (to be used or paid back in year $y+1$), will be **calculated based on the initial quota** for year y , without taking into account modifications of the year y quota arising from banking or borrowing in year $y-1$.

For example, if in year 2013 a quantity X was banked to or borrowed from 2014, this quantity X can be used or must be paid back in 2014. Subsequent banking or borrowing that is done in 2014 (relating to 2015) will be based on the **initial 2014 quatum** (the country’s quatum share of the TAC), without adding or subtracting quantity X .

Implementation error

The evaluation assumes no implementation error will take place (i.e. landings will adhere to the interannual quota flexibility rules, and will not exceed whatever these rules dictate).

Thresholds

The threshold rule to suspend interannual quota flexibility will be the stock being **outside safe biological limits** (SBL) which means that, according to the assessment performed in year y , either $F(y-1) > F_{pa}$ or $SSB(y) < B_{pa}$, or both.

Timing of suspending the interannual quota flexibility

If the stock is outside SBL in year y according to advice for year $y+1$, flexibility is allowed in year y (banking to/borrowing from $y+1$), but suspended between $y+1$ and $y+2$. Flexibility is reinstated when the stock is in good condition again.

For example, if the 2013 advice for 2014 considers the stock **outside SBL in 2013** (F_{2012} , SSB_{2013}):

- no interannual quota flexibility will be allowed between **2014 and 2015**;
- interannual quota flexibility will still be allowed to continue in year 2013, and whatever amount is banked or borrowed during year 2013 can be used or must be paid back in year 2014.

Timing of reopening the interannual quota flexibility

If the stock is inside SBL in year y according to advice for year $y+1$ (after a period of being outside SBL), interannual quota flexibility is allowed from year $y+1$ onwards (in year $y+1$ banking to/borrowing from year $y+2$ is allowed).

For example, if the 2013 advice for 2014 considers the stock **inside SBL in 2013** (F_{2012} , SSB_{2013}) after a period of no interannual quota flexibility:

- interannual quota flexibility will be allowed again between **2014 and 2015**.

Sources

- Brunel, T., and Miller, D. C. M.. 2013. An Evaluation of the Impact of Interannual Quota Flexibility (Banking and Borrowing) on the Performance of the North Sea Flatfish Long-Term Management Plan. ICES CM 2013/ACOM:64.
- Coers, A., Miller, D. C. M., and Poos, J. J. 2012. Evaluation of Proposed Amendments to the North Sea Flatfish Multiannual Plan. ICES ADGFLAT Report. ICES CM 2012/ACOM:70. 83 pp.
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