

Audit of (Celtic Sea herring MP)

Date May 31st, 2015

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Audience to write for: advice drafting group, on request of the ICES Secretariat.

Aim is to audit:

- The update of the Management Plan according to the most recent HAWG assessment. No records in the HAWG Report Annex.

General

A long term management plan (LTMP) was proposed by the Pelagic AC in 2012 and has been used by managers since 2013. The harvest control rule (HCR) in the plan was evaluated by ICES in 2012 and found to be consistent with the precautionary approach. It was also found to deliver long term sustainable yield, at the expense of maximising yield in any one year (ICES ADGCSHER, 2012). The proposed target F is 0.23 and the trigger biomass point is 61 000 t.

The plan was re-evaluated, by HAWG 2014, in the light of the new benchmark of the stock in that year. It was judged to still be consistent with the precautionary approach, based on simulations conducted (ICES HAWG 2014). A further benchmark was conducted in 2015. The assessment conducted at the Benchmark in February 2015 (ICES WKWEST, 2015) was found to be invalid, due to erroneous natural mortality estimates having been provided by DTU-AQUA. An updated assessment was conducted by HAWG 2015, and the LTMP audited here is based on this assessment.

For single stock summary sheet advice:

Short description of the assessment: extremely useful for reference of ACOM!

- 1) **Assessment type: based on recent benchmark WKWEST**
- 2) **Assessment:** analytical
- 3) **Forecast:** presented
- 4) **Assessment model:** XSA + VPA Bayesian assess – tuning by 3 comm + 2 surveys
- 5) **Stock status:** SSB > biomass reference points, $F < F_{msy}$ and F_{mgt}
- 6) **Man. Plan.:** *The proposed target F is 0.23 and the trigger biomass point is 61 000 t. The main elements in the plan are a 30% constrain on TAC change between years; if the SSB was below 41 000 t the fishery would be closed and a sentinel fishery would be put in place. Plan was evaluated by ICES in 2014 and considered precautionary.*

General comments

The LTMP HCR is robust to the new benchmarked assessment. This simulation shows that the current HCR has low risk to B_{lim} . A 10% implementation bias was included in the simulations for precautionary purposes, following the procedure agreed at ICES ADGCSHER 2012.

Technical comments

The MP was tested by simulations performed using HCS 10-3 (Skagen, 2010). This stochastic projection programme allows for various sources of precision and bias to be considered, including retrospective bias and implementation error.

The results were presented on Tables, plots of predicted SSB and Cis in the projections, together with associated risks would have facilitated the auditing.

Conclusions

The evaluation has been performed correctly.

The result of a sensitivity analysis conducted showed that the uncertainty in the current assessment is not detrimental to the performance of the LTMP.

The results of this evaluation show that performance of the LTMP is sensitive to downward SSB revisions in the assessment. In the absence of implementation error, the LTMP is robust to downward revisions of 16% applied consistently during 20 years. This is certainly an extreme scenario. It was noted that the assessment in 2015 resulted in a positive (upward) revision of SSB.

Checklist for review process

General aspects

- Has the EG answered those TORs relevant to providing advice?
- Is the assessment according to the stock annex description?
- Is general ecosystem information provided and is it used in the individual stock sections.
- If a management plan has been agreed, has the plan been evaluated?

For update assessments

- Have the data been used as specified in the stock annex?
- Has the assessment, recruitment and forecast model been applied as specified in the stock annex?
- Is there any **major** reason to deviate from the standard procedure for this stock?
- Does the update assessment give a valid basis for advice? If not, suggested what other basis should be sought for the advice?