

Annex 5: Audits

Review of ICES Scientific Report, (expert group/workshop title) (year) (dates): WGDEEP, 22-28 April 2021

Reviewers: James Bell

Expert group Chair: Ivone Figueiredo (POR) & Elvar Hallfredsson (NOR)

Secretariat representative: David Miller

Stock: lin.27.1-2

Assessment type:

Update

1) Assessment:

Accepted

2) Forecast:

Not presented

3) Assessment model:

ICES category 3 stocks using a standardized CPUE index from Norwegian longline target fishery (where ling >30% of catch), data since 2000.

Length-based Indicator ($L_{\text{mean}}/L_{F=M}$) as F_{MSY} proxy, data since 2001

4) Consistency:

Advice based on a standardized CPUE series from the Norwegian longline reference fleet which covers the main area of the stock's distribution.

Age structure consistent between years (2002-19). No age data for most recent year but length-frequencies consistent (modal length consistently between ~88-97 cm for the period 2002-20).

5) Stock status:

The estimated biomass index have decreased by 16 % (index ratio= 0.84). Abundance indices have different steepness, but both increased steadily

until a peak in 2017, declining thereafter. Indices now at lowest levels since 2013 but remain well above the mean for the full time-series.

Assessment against LBI reference points suggests a small improvement in 2020 ($L_{\max 5\%}/L_{\text{INF}}$ now above target, other indicators as in previous years). The MSY indicator ($L_{\text{mean}}/L_{F=M}$) is greater than 1 for almost the whole period.

6) Management plan:

None.

There is no quota or minimum landing size for the Norwegian ling fishery but any vessels participating in the directed fishery for either ling or tusk in Subareas 1 & 2 must have a specific license.

Quota for ling in EU and international waters historically very small (36 t in 2020).

General comments

The assessment appears to have carried out according to the agreed protocol and the most recent advice.

It should be noted that decreasing Barents Sea cod quotas may lead to increased pressure upon ling in the future.

Gillnetting now accounts for the bulk of the catch, at 59% of total weight, and longlining, upon which the CPUE trends assessment is based, only 37%. It may be worth investigating a CPUE index based on records from this fishery in future.

Technical comments

Table 5: According to the first sentence, 2022-2023 advice catch should be “10 479” tons instead of “10 478”.

Conclusions

The assessment has been completed correctly.

Review of ICES Scientific Report, (WGDEEP2021, 22-28 April 2021)

Reviewers: Bruno Almón

Expert group Chair: Elvar H. Hallfredsson and Ivone Figueiredo

Secretariat representative: David Miller and Eirini Glyki

Audience to write for: advice drafting group, ACOM, and next year's expert group

General

The advice is based on an analytical length-based approach (ICES category 1) and is delivered annually.

For advice other than single-stock summary fisheries advice

Section: Report chapter and Stock Annex.

Short description

Both the report and Stock Annex are well documented. I would only suggest some mention of the absence of advice in 2020, either in the report or in the Stock Annex, to facilitate the monitoring of what has been done over time.

Comments

Last update of the Stock annex was in May 2017. Since the assessment is annual and the same method has been used in 2018, 2019 and 2020 only some suggestions have been made regarding small typos in the text.

For single-stock summary sheet advice

Stock

Short description of the assessment as follows (examples in grey text):

- 1) Assessment type: Update
- 2) Assessment: accepted- analytical length-based (ICES category 1)
- 3) Forecast: accepted- short-term forecast to the end of 2022
- 4) Assessment model: gadget model
- 5) Consistency: Annual advice under a management plan (from 1st September till the next year end of August). The model was benchmarked in 2014. Due to the Covid 19 disruption, no advice was requested from ICES by Iceland in 2020, but it was accepted in 2019.
- 6) Stock status: Fishing pressure on the stock is at/below FMSY and spawning-stock size is at/above MSY Btrigger, Bpa, and Blim.
- 7) Management plan: The Icelandic Ministry of Industries and Innovation's fisheries management plan for Icelandic ling has been evaluated by ICES in 2017. It was considered to be precautionary and conforms to the ICES MSY approach.

General comments

Is well documented and consistent with previous advices. It was easy to follow and interpret.

Technical comments

Spawning stock biomass shows a downward revision of recent biomass levels, causing an upward revision in harvest rate, which falls within the expected bounds of model uncertainty.

Conclusions

The assessment has been performed correct and consistently with the previous assessment (2019).

Review of ICES Scientific Report, (*expert group/workshop title*) (*year*) (*dates*):

WGDEEP, 2021, 22-28 April

Reviewers: Guzman Diez

Expert group Chair: Ivone Figueiredo & Elvar Hallfredsson

Secretariat representative: David Miller

Audience to write for: advice drafting group, ACOM, and next year's expert group

General

Recommendations, general remarks for expert groups, etc. (use bullet points and subheadings if needed)

For advice other than single-stock summary fisheries advice

Section:

Short description

Comments

(Repeat for all sections)

For single-stock summary sheet advice

Stock: **(bli27.5a14). Blue ling (*Molva dypterygia*) in Subarea 14 and Division 5.a**

Short description of the assessment as follows (examples in grey text):

- 1) Assessment type: update
- 2) Assessment: accepted
- 3) Forecast: not presented
- 4) Assessment model: ICES category 3 stocks
- 5) Consistency: The Icelandic autumn trawl survey (IS-SMH) was used as the index for the stock. Survey covers the full depth range and geographical distribution of the stock.
- 6) Stock status: The index is estimated to have decreased by 14%,
- 7) Management plan: ICES is not aware of any agreed precautionary management plan for blue ling in this area.

General comments

The text is written according to the standards sentences and tables for the advice sheets. Catch advice calculation is clear.

Technical comments.

The last Stock Annex was updated in 2019 and the assessment data and method (survey trend) used in the advice are described in the SA.

Conclusions

The assessment has been performed correctly.

Review of ICES Scientific Report, Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP), 22-28 April 2021

Reviewers: Rui Vieira

Expert group Chair: Ivone Figueiredo (POR) & Elvar Hallfredsson (NOR)

Secretariat representative: David Miller

Tusk (*Brosme brosme*) in Subarea 14 and Division 5.a (East Greenland and Iceland grounds) (usk.27.5a14)

Short description of the assessment as follows:

- 1) Assessment type: **update**
- 2) Assessment: **accepted**
- 3) Forecast: **accepted**
- 4) Assessment model: **Analytical length-based assessment (Gadget model) that uses catches in the model and in the forecast**
- 5) Consistency: **There was retrospective analysis leading to a correction of the whole times series of biomass levels as well a revision of biomass trends estimated over the last decade.**
- 6) Stock status: **Fishing pressure above HR_{MSY} and spawning-stock size is at/above $MSY B_{trigger}$, B_{pa} , and B_{lim} .**
- 7) Management plan: **There is a Management plan for the stock component in Division 5.a (Icelandic tusk), which has been evaluated by ICES. WKICEMSE 2017 concluded that the HCR was precautionary and in conformity with the ICES MSY approach. Reference points defined for the stock are provided in the full report (ICES, 2021).**

General comments

The text is well written, and it is according to the standards sentences and tables for the advice sheets. Catch advice, quality of the assessment and related limitations are well described. Data is available in the sharepoint.

Technical comments

This advice refers only to the tusk stock component in Division 5.a. because catch data from Subarea 14 are not used in the assessment. This limitation is considered in the advice and agreed by the working group. In comparison with previous assessments, there has been a downward correction of the whole times series of biomass levels as well as a large downward revision of biomass trends estimated over the last decade.

Table 2: According to the first sentence, advice catch for 2021/2022 should be “2172” tons instead of “2171”.

Catch values in tables 7-10 don’t match up. Please revise and check report tables accordingly.

Table 10 is missing. Renumber table 11.

Conclusions

The assessment has been performed correctly, but values in tables need to be checked.

Format for audits (to be drawn up by expert groups and not review groups)

Review of ICES Scientific Report, (expert group/workshop title) (year) (dates): WGDEEP, 22th-28th April 2021

Reviewers: Ricardo Sousa

Expert group Chair: Ivone Figueiredo (POR) & Elvar Hallfredsson (NOR)

Secretariat representative: David Miller

Stock: Blackspot sea bream in subarea 10 (sbr.27.10)

1) Assessment type:

Update

2) Assessment:

Trend based assessment (ICES category 3 stock).

3) Forecast:

Not presented.

4) Assessment model:

ICES Survey trend based assessment (based on Azorean bottom longline survey).

5) Consistency:

Advice is consistent with reported data.

6) Stock status:

Stock and exploitation status are currently unknown because the reference points are undefined.

7) Management plan:

None.

General comments

The stock section is properly documented. The analyses have not been updated due to a lack of survey and fishery sampling due to the Covid-19 disruption.

Minor suggestions and comments were sent to the stock coordinator.

Technical comments

None

Conclusions

The assessment has been completed correctly.

Review of ICES Scientific Report, Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP), 22-28 April 2021

Reviewers: **Régis Santos**

Expert group Chair: **Ivone Figueiredo (POR) & Elvar Hallfredsson (NOR)**

Secretariat representative: **David Miller**

Tusk (*Brosme brosme*) in Subareas 1 and 2 (usk.27.1-2)

Short description of the assessment as follows:

- 1) Assessment type: **update**
- 2) Assessment: **accepted**
- 3) Forecast: **not presented**
- 4) Assessment model: **CPUE trends-based assessment (ICES, 2019).**
- 5) Consistency: **Consistent with the last year's assessment.**
- 6) Stock status: **Reference points are undefined for this stock.**
- 7) Management plan: **ICES is not aware of any agreed precautionary management plan for tusk in this area.**

General comments

The report was well documented and with updated data. The advice was drafted according to the correspondent report section.

Technical comments

The Stock Annex needs to be updated and completed.

Conclusions

The assessment has been performed correctly.

Review of **Ling 27.5b**, WGDEEP 2021, 22 to 28 April

Reviewers: **Wendell Medeiros Leal**

Expert group Chair: **Ivone Figueiredo and Elvar Hallfredsson**

Secretariat representative: **David Miller**

Stock: Ling (*Molva Molva*) in Division 5.b

Short description of the assessment as follows:

- 1) **Assessment type:** Benchmark
- 2) **Assessment:** Accepted
- 3) **Forecast:** Accepted
- 4) **Assessment model:** Age-based analytical assessment (SAM) that uses catches in the model and in the forecast.
- 5) **Consistency:** The assessment of ling in division 5.b was upgraded from category 3 to category 1 and the reference points estimated were approved in the WKBARFAR benchmark in February 2021.
- 6) **Stock status:** F_{pa} and $F_{lim} < \text{Fishing pressure} < F_{MSY}$; $SBB > MSY$ $B_{trigger}$ B_{pa} and B_{lim} ; R , seems back to be increase again in recent years.
- 7) **Management plan:** A harvest control rule was adopted in 2020, and applied for the first time in 2021. The number of fishing days was decided according to the stock status of cod, haddock and saithe. The management plan also opens up for the development of special bycatch rules, but this has not yet been integrated. Plan is not evaluated by ICES, but will likely be sent to review in 2021.

General comments

The text is according to the standards sentences and tables for the advice sheets. Stock development over time, catch scenarios, quality and basis of the assessment, reference points and history of the catch and landings are well described.

Technical comments

The stock annex has been updated, describing the traits of life-history and biology of ling in division 5.b, and also detailed information about the age-based analytical assessment (SAM).

Minor revision in the stock annex and report text are required.

Conclusions

The assessment has been performed correctly.

Review of ICES Scientific Report, ICES WGDEEP 2021 22-28 April

Reviewer: Juan Gil Herrera

Expert Group Chairs: Ivone Figueiredo (POR) and Elvar H. Hallfredsson (NOR)

Secretariat representative: David Miller

For single-stock summary sheet advice

Stock: Greater silver smelt (*Argentina silus*) in Subarea 14 and Division 5.a (East Greenland and Iceland grounds) – aru.27.5a14

Short description of the assessment as follows:

- 1) **Assessment type:** ICES category 1 (upgrade/update from benchmark model)
- 2) **Assessment:** Accepted
- 3) **Forecast:** Accepted
- 4) **Assessment model:** gadget model
- 5) **Consistency:** 2020 Benchmark for GSS in 5.a and 14 concluded that a length- and age-based gadget model sufficiently reduced uncertainty in the assessment and the advice could be based on the ICES MSY advice rule.
- 6) **Stock status:** $F_{\text{current}(2020)} < F_{\text{MSY}}$ while $SSB_{2021} > B_{\text{pa}} > B_{\text{lim}}$ unless is estimated to be slightly decreased from 2020 high historical level.
- 7) **Management plan:** No management plan.

General comments: Stock benchmarked quite recently, in 2020 ... so the Stock Annex is up to date. Data and info (Advice sheet, Stock annex and Report chapter) are available at the SharePoint. Its text, figures and tables follows ICES standards. Quality of the assessment and issues relevant for the advice are clearly described.

The usual mess with “calendar” and (Icelandic) “fishing year” ... but, it is what it is!!

There’s an interesting suggestion (from the Stock Annex): it was planned that short-term projection in advice sheets will include different scenarios as F_{pa} , F_{lim} and no fishing and not only at F_{msy} as implemented in the advice rule.

Technical comments:

Catches in Figure 1 includes Division 5a and also Subarea 14 from 2014: it would be useful split bars in two colours since then (just a suggestion!!).

Tables should be renumbered from 3 because “*basis of the advice*” and “*reference points*” Tables has 3 both. “Reference points” Table should be number 4 and so on ... till 9 instead 8.

Conclusions: The assessment has been completed correctly, following the 2020 Benchmark.

Review of ICES Scientific Report, (WGDEEP, 22-28 April 2021

Reviewers: Elisa Barreto

Expert group Chair: Ivone Figueiredo and Elvar Hallfredsson

Secretariat representative: David Miller

Audience to write for: advice drafting group, ACOM, and next year's expert group

For single-stock summary sheet advice

Stock: **lin.27.3a4a6-91214**

Short description of the assessment as follows (examples in grey text):

- 1) Assessment type: update
- 2) Assessment: accepted
- 3) Forecast: not presented
- 4) Assessment model: a standardized cpue series from the Norwegian long-line fleet
- 5) Data issues: Data are as described in stock annex.
- 6) Consistency: The stock size relative to candidate reference points is unknown, but the stock has been increasing since 2004. The precautionary buffer was applied this year. The average discard rate in the three last years was 4.4% and this has been used to provide landings advice.
- 7) Stock status: no reference have been defined for this stock.
- 8) Management Plan: ICES is not aware of any agreed management plan for this stock in this area.

General comments

The ICES framework for category 3 stocks was applied. The basis for the advice is the precautionary approach.

It is well documented and easy to follow and interpret.

Technical comments

Minor typos in the report, stock annex and advice sheet section were carried out.

Conclusions

The assessment has been performed correctly.

Review of ICES Scientific Report, (WGDEEP, 22-28 April 2021)

Reviewers: Martin Pastoors

Expert group Chair: Ivone Figueiredo and Elvar Hallfredsson

Secretariat representative: David Miller

Audience to write for: advice drafting group, ACOM, and next year's expert group

For single-stock summary sheet advice

Stock: **aru.27.6b7_1012**

Short description of the assessment as follows (examples in grey text):

- 7) Assessment type: update
- 8) Assessment: accepted
- 9) Forecast: not presented
- 10) Assessment model: a survey series (Spanish Porcupine survey)
- 11) Data issues: Data are as described in stock annex.
- 12) Consistency: The stock size relative to candidate reference points is unknown. According to the survey, the combined index of greater and lesser Silver smelt has been fluctuating over time between 2000 and 2020. Recent index values are lower than the index values of 2-4 years ago. The uncertainty cap was applied. The precautionary buffer was applied this year. The discard rate in 2020 was 77% and this has been used to provide landings advice.
- 13) Stock status: no reference have been defined for this stock.
- 14) Management Plan: ICES is not aware of any agreed management plan for this stock in this area.

General comments

The ICES framework for category 3 stocks was applied, using the Spanish Porcupine biomass index for Greater Silver smelt. The basis for the advice is the precautionary approach.

Technical comments

The assessment and advice are appropriately documented. However, it would be good to be more clear on what data is available and what data has been used for the advice. E.g.:

- The WG report does not contain a table with all catches by area (although that does appear in the advice document)
- Several survey indices from the Spanish Porcupine survey are presented in the report (kg/haul, individuals/haul for either ARU, ARY and ARG). It is not made clear which index is finally being used. A table with survey values is not presented in the report (but it is presented in the advice).
- The calculation of the 2/3 rule is based on the ARU index in kg/haul, but the survey plot in advice document is the ARG index in kg/haul. This is an inconsistent use of the survey information.
- The 'advice' table is constructed based on the premise of a landings advice, but in practice, ICES has issued catch advice for this stock. The basis for the advice is not specified in the stock annex. However, due to the very low landings in recent years, relative to the overall catch, application of the 2/3 rule on the basis of landings generates a very different catch (44 tonnes), compared to the application of the 2/3 rule on the catches (123 tonnes). It is recommended to be more specific on these choices in the stock annex.

Conclusions

The assessment has been performed correctly, but some the interpretation of which survey index and which catch basis is used for the advice would benefit from better descriptions.

6 May 2021, Martin Pastoors

Review of ICES Scientific Report, (WGDEEP2021, 22-28 April 2021)

Reviewers: Erik Berg

Expert group Chair: Elvar H. Hallfredsson and Ivone Figueiredo

Secretariat representative: David Miller and Eirini Glyki

Audience to write for: advice drafting group, ACOM, and next year's expert group

General

The advice is based on an analytical assessment (SAM)(ICES category 1) and is delivered annually from 2022 (previously each second year).

For advice other than single-stock summary fisheries advice

Section: Report chapter and Stock Annex.

Short description

Both the report and the advice are well documented.

Stock annex updated according to the new assessment model (from 2021). New reference points from 2021.

Comments

Only small comments which are corrected by authors.

For single-stock summary sheet advice

Stock

Short description of the assessment as follows (examples in grey text):

- 1) Assessment type: Analytical
- 2) Assessment: accepted- analytical SAM (ICES category 1)
- 3) Forecast: accepted- short-term forecast to the end of 2022
- 4) Assessment model: SAM
- 5) Consistency: New model from 2021. Benchmarked 2020/2021.
- 6) Stock status: Fishing pressure below FMSY and spawning-stock size above Bpa.
- 7) Management plan: NA.

General comments

Conclusions

The assessment and the forecast are performed correct. New model and new reference points makes it impossible to check the consistently with previous assessments.

Review of ICES Scientific Report
WGDEEP 2021 (22nd-28th April)

Reviewers: Inês Farias

Expert group Chair: Elvar Hallfredsson and Ivone Figueiredo

Secretariat representative: David Miller

Audience to write for: advice drafting group, ACOM, and next year's expert group

General

Data sets have been updated with available information.

For advice other than single-stock summary fisheries advice

Section:

Short description

Comments

(Repeat for all sections)

For single-stock summary sheet advice

Stock **aru.27.123a4**

Short description of the assessment as follows (examples in grey text):

- 1) Assessment type: benchmark
- 2) Assessment: accepted
- 3) Forecast: not presented
- 4) Assessment model: SPiCT assessment
- 5) Consistency: SPiCT assessment was examined but not recommended due to uncertainty in the results in retrospective analysis. However, the biomass outputs from SPiCT were considered indicative of stock trends and proposed as input to ICES two-over-three rule.
- 6) Stock status: Fishing pressure on the stock is below F_{MSY} ; No reference points for stock size have been defined for this stock.
- 7) Management plan: ICES is not aware of any agreed precautionary management plan for greater silver smelt in these areas.

General comments

The advice sheet was easy to follow and interpret. Data have been updated with available information. Minor formatting changes were made in this audit.

Technical comments

The assessment is in accordance to the WKGSS 2020 benchmark workshop.

Conclusions

(Single tables or figures can be added in the text, longer texts should be added as annexes.)

The assessment has been performed correctly.

Review of ICES Scientific Report, Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP), 22-28 April 2021

Reviewers: **Vladimir Khlivnoi**

Expert group Chair: **Ivone Figueiredo (POR) & Elvar Hallfredsson (NOR)**

Secretariat representative: **David Miller**

Tusk (*Brosme brosme*) in subareas 4 and 7–9, and in divisions 3.a, 5.b, 6.a, and 12.b (Northeast Atlantic)

Short description of the assessment as follows:

- 1) Assessment type: **update**
- 2) Assessment: **accepted**
- 3) Forecast: **not presented**
- 4) Assessment model: **CPUE trends-based assessment (ICES, 2019).**
- 5) Consistency: **Consistent with the last year's assessment.**
- 6) Stock status: **Reference points are undefined for this stock.**
- 7) Management plan: **ICES is not aware of any agreed precautionary management plan for tusk in this area.**

General comments

The ICES framework for category 3 stocks was applied. The basis for the advice is the precautionary approach.

The report was well documented and with updated data. The advice was drafted according to the correspondent report section.

Technical comments

Minor typos were found in the report.

Conclusions

The assessment has been performed correctly.