WORKING GROUP ON THE BIOLOGY AND ASSESSMENT OF DEEP-SEA FISHERIES RESOURCES (WGDEEP)

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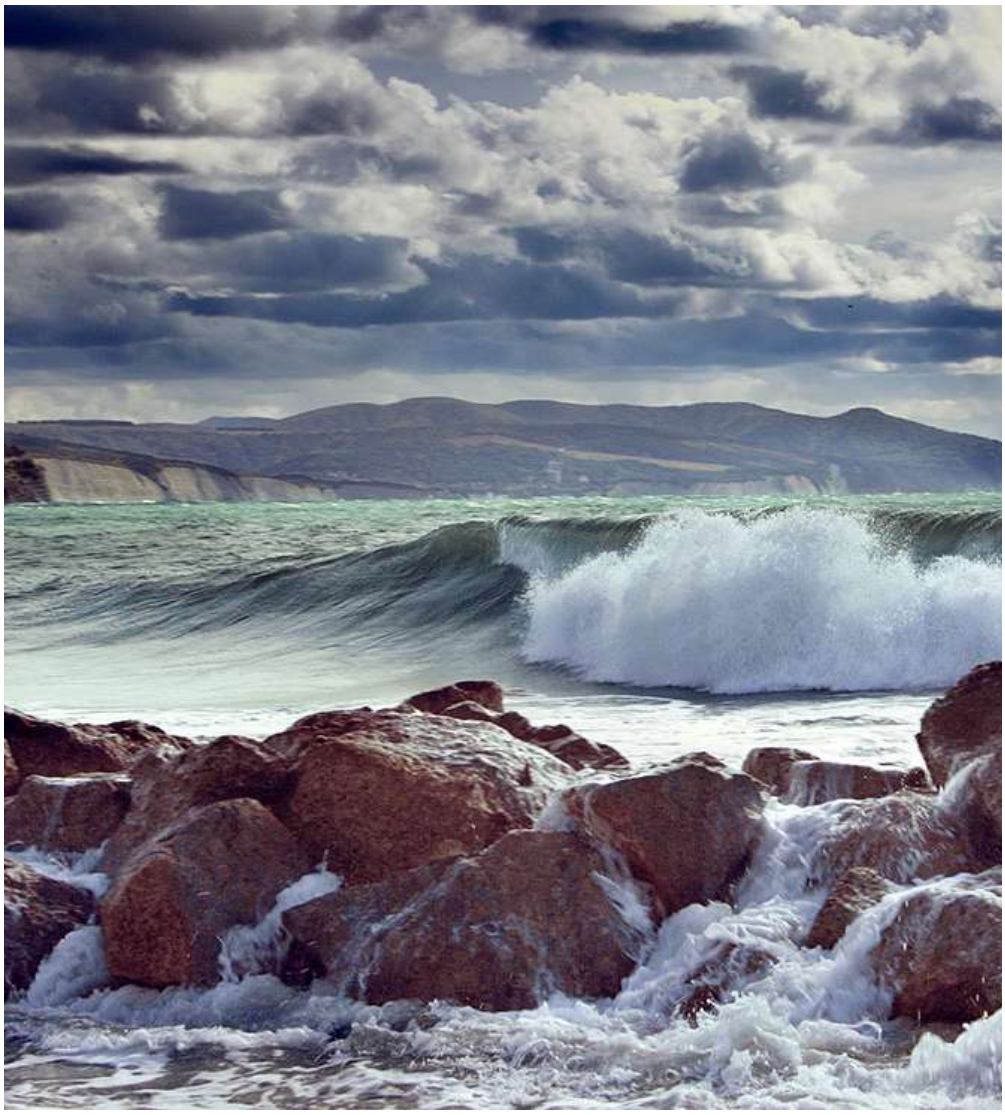

ICES INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA
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i Executive summary

The ICES working group on biology and assessment of deep-sea fisheries resources (WGDEEP) provides scientific advice on 30 assessment units including stocks of deep-water species and those on shelf areas and in deep waters.

Advice is provided in time intervals of 1 to 5 years for different stocks, with 1- and 2-years intervals as the most common.

First draft of advice was prepared for 17 stocks this year. Available time-series for international landings and discards, fishing effort, survey indices and biological information were updated for all stocks and are presented in Sections 3–15 of the report.

In 2022 Atlantic Wolffish in ICES area 5a was included in WGDEEP as a new stock for the group.

Main conclusions regarding each stock with advice in 2022 were:

The advice on alfonsinos in 1-10, 12 and 14 refers to two species, *Beryx splendens* and *Beryx decadactylus*, that are often not differentiated in the reported landings. In recent years, landings of the two species have been stable.

Atlantic Wolffish in 5a. As part of a harvest control rule evaluation in 2022, the basis of advice was set as a statistical catch at age model category 1 assessment. Advice was drafted for this stock for the first time at the meeting.

Black scabbardfish in the Northeast Atlantic showed a slight reduction in abundance in the last three years. Fishing effort, and catches, on this species have been decreasing probably associated with the ban of trawling in deeper areas.

Blackspot seabream in Subareas 6, 7 and 8 abundances strongly declined in the mid-1970's and it is considered to be seriously depleted. Landings are mainly by-catches and surveys show persistent low occurrence of the species. Catch advice has been zero since 2017.

Blackspot seabream in Subarea 9 has been assessed based on biomass index from a targeted fishery in the Strait of Gibraltar, mostly operating out of Subarea 9. Preliminary genomic studies presented to the meeting suggest genetic differentiation between the Strait of Gibraltar and locations further north in Iberian waters.

Blackspot seabream in subarea 10. There was no new information regarding samples from the fishery in 2021 in area 10. Survey abundance indices are lower in 2021 than in 2019. Current landings are relatively low and below advice.

The recruitment of blue ling in division 5.a and subarea 14 has been low since 2010. Biomass indices have decreased slightly in recent years. Advised catch for the next fishing year was lower due to application of the rfb rule.

Catches of blue ling in Division 5.b and subareas 6 and 7 increased markedly to more than 5000 tonnes in 2000. This is however only half of the maximum catch when the MSY approach is applied. The stock assessment became more uncertain because of insufficient sampling (in 2021 the 20% of landings from longlines were not sampled) associated to a shift in length distribution resulting from recruitment in 2019-20.

Greater forkbeard is a bycatch species in longline and trawl mixed fisheries in subareas 1–10, 12, and 14. Reported landings have decreased in the last two years, and in 2021 reached the lowest value since 2011. Discards are considered high but could not be fully quantified. The combined

biomass-index from six surveys representative of the stock area decreased between 2018 and 2020, but the estimated increase in 2021 means that biomass is at same levels of 2015 and 2017.

For greater silver smelt in division 5.a and subarea 14, the spawning stock biomass reached a historical high and fishing mortality remains relatively low. Recruitment estimates are low in the past two years but were relatively high prior to these.

For greater silver smelt in 5b and 6a fishing mortality is below F_{MSY} and the spawning biomass is above MSY $B_{trigger}$. The recruitment is very constant. When the MSY approach is applied the advice of catch advice decrease compared to last year's advice.

As part of a harvest control rule evaluation, the basis of advice changed for ling in division 5.a to be based on a statistical catch at age model. Biomass levels of ling in 5a are decreasing after high biomass levels attributable to a recent high period of recruitment. Current recruitment levels have returned to lower historical levels but are steady. Fishing mortality has been close to the management target in recent years.

For ling in Division 5b the spawning biomass is above MSY Btrigger and the fishing mortality is above FMSY but below Fpa and Flim. Catches are at high level, SSB has been at the highest level ever and is now decreasing and recruitment is at a low level for the last three years.

Roundnose grenadier in 3a is considered to be low level, which can be partly due to exceptionally high landings in the past, and present low levels of recruitment.

Roundnose grenadier in subareas 6-7 and divisions 5.b and 12.b landings have declined since 2004. Recent survey indices remain stable, but the implementation of the EU deep sea bottom trawling ban combined with changes in fishing location, has led to a decrease in activity.

As part of a harvest control rule evaluation, the basis of advice changed for tusk in division 5.a and subarea 14 to be based on a statistical catch at age model. Biomass is shown to have been decreasing slowly over the past decade, and reached a low level in 2019 and 2020 due to a period of historically low recruitment. That period was followed by higher recruitment, which has now reached a fishable size, so biomass levels increased substantially this year. Fishing mortality levels have in recent years been close to the target fishing mortality.

Only landings data were available for tusk in 6b in 2021. No fisheries were conducted by Norway in 2021 due to lack of agreement on quota sharing between Norway, the UK, and the EU. The landings have been declining since 2001.

ii Expert group information

Expert group name	Working Group on the Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP)
Expert group cycle	Annual
Year cycle started	2022
Reporting year in cycle	1/1
Chair(s)	Elvar H. Hallfredsson, Norway
	Ivone Figueiredo, Portugal
Meeting venue and dates	28 April – 4 May 2022, Copenhagen, Denmark (21 participants)