

HERRING ASSESSMENT WORKING GROUP FOR THE AREA SOUTH OF 62° N (HAWG)

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i Executive summary

The ICES herring assessment working group (HAWG) met on an interactive virtual platform for eight days in March 2020 to assess the state of five herring stocks and three sprat stocks. HAWG also provided advice for four sandeel stocks but reported on those prior to this meeting in February. The working group conducted update assessments for the five herring stocks. An analytical assessment was performed for the combined North Sea and Division 3.a sprat, and a data limited assessment (ICES category 3) was conducted for English Channel sprat (spr.27.7de).

The **North Sea autumn spawning herring (her.27.3a47d)** SSB in 2019 was estimated at 1.7 mill tonnes while F_{2-6} in 2019 was estimated at 0.18, which is below F_{MSY} . Recruitment in 2019 is comparable to the 2018 value and remains within the low recruitment regime observed since 2015. Year classes since 2002 are estimated to be consistently weak with year classes 2014 and 2016 some of the weakest on record. ICES considers that the stock is still in a low productivity phase.

The **Western Baltic spring-spawning herring (her.27.20-24)** assessment was updated. The SSB and recruitment in 2019 are record low. SSB is estimated to be around 56 600 tonnes which is below both B_{pa} and B_{lim} . Recruitment has been low since 2006 and it has been further deteriorating with time. Fishing mortality has decrease in 2019 to 0.382 but is still well above F_{MSY} (0.31). The stock has decreased consistently during the second half of the 2000s and given the continued low recruitments the stock is not able to recover above B_{lim} unless a drastic reduction in fishing effort is applied.

The **Celtic Sea autumn and winter spawning stock (her.27.irls)** is estimated to be at a very low level. SSB is currently estimated to be at the lowest level in the time-series and has been below B_{lim} (34 000 t) since 2016. Mean $F_{(2-5 \text{ rings})}$ was estimated at 0.49 in 2019, having decreased from the peak of 1.15 in 2017. Recruitment has been consistently below average from 2013-2018. Recruitment in 2019 is estimated to be above average.

The assessment of the combined stocks of herring in **6.aN and 6.aS/7.b, c (her.27.6a7bc)** went through an interbenchmark procedure in 2019 and the advice is based on trends from an analytical assessment. SSB and recruitment have been declining since around 2000 and are currently at the lowest level in the time-series. Fishing mortality has reduced since 2016 when catches have been limited to a scientific monitoring TAC but recovery of the stock is hampered by the very low recruitment.

Irish Sea autumn spawning herring (her.27.nirs) assessment shows a stable SSB in 2019 compared to previous years at around 24 700 tonnes. The stock has experienced large incoming year classes in recent years. Fishing mortality (F_{4-6}) is estimated at 0.18, one of the lowest in the time-series and below F_{MSY} (0.266). Catches have been relatively stable since the 1980s, and close to the TAC in recent years.

North Sea and 3.a Sprat (spr.27.3a4) were combined into a single assessment unit during the 2018 benchmark. Perception of the status of the stock is dominated by the dynamics in Subarea 4 where most of the catches occur. Despite the fact that fishing mortality in the last years has fluctuated at high levels between 0.6–2.2, recruitments slightly but consistently above the average during recent years have contributed to an increase in SSB well above $MSY B_{escapement}$. The estimates for 2020 show an SSB of 266 000 t which is more than double of B_{pa} (125 000 t).

Catch advice for **sprat in the English Channel (7.d, e) (spr.27.7de)** was based on criteria for an ICES category 3-based method. Data available are landings and a short time-series of acoustic

biomass (2013–2019). The acoustic biomass has fluctuated over time and the 2019 biomass has increased from the 2018 estimate.

The HAWG reviewed the assessments performed on four sandeel stocks and the related advice of these stocks. Section 9 of this report contains the assessments of sandeel in Division 3.a and Subarea 4.

Standard issues such as the quality and availability of data, estimating the amounts of discarded fish, availability of data through industry surveys and scientific advances particularly with respect to stock discrimination relevant to small pelagic fish were discussed.

All data and scripts used to perform the assessments and the forecast calculations are available at https://github.com/ICES-dk/wg_HAWG and accessible to anyone.

ii Expert group information

Expert group name	Herring Assessment Working Group for the Area South of 62° N (HAWG)
Expert group cycle	Annual
Year cycle started	2020
Reporting year in cycle	1/1
Chair(s)	Afra Egan, Ireland
	Valerio Bartolino, Sweden
Meeting venue(s) and dates	HAWG Sandeel: 22-24 January 2020, Copenhagen, Denmark (6 participants)
	HAWG: 17-24 March 2020, virtual meeting (26 participants)