

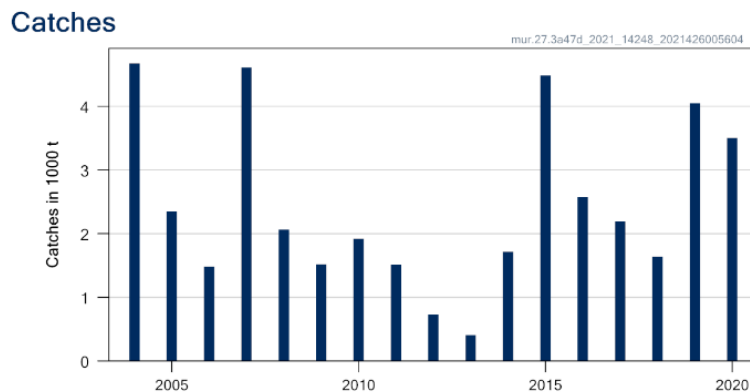
## Striped red mullet (*Mullus surmuletus*) in Subarea 4 and divisions 7.d and 3.a (North Sea, eastern English Channel, Skagerrak and Kattegat)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach (PA) is applied, catches should be no more than 1950 tonnes in each of the years 2022 and 2023. All catches are assumed to be landed.

### Stock development over time

Fishing pressure on the stock is above  $F_{MSY}$  (Figure 2); No reference points for stock size have been defined for this stock.



**Figure 1** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. Summary of the stock assessment.

### Catch scenarios

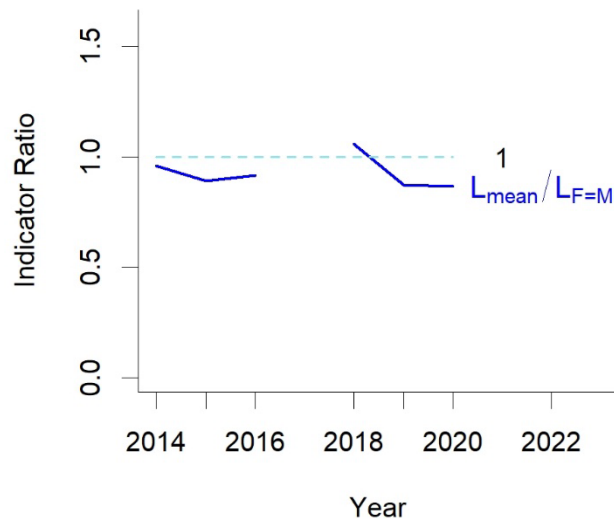
ICES framework for category 5 stocks was applied (ICES, 2012). For stocks without information on abundance or exploitation, ICES considers that a precautionary reduction of catches should be implemented where there is no ancillary information clearly indicating that the current level of exploitation is appropriate for the stock. Discarding is considered negligible.

The PA buffer was last applied in 2017 and therefore was applied this year.

**Table 1** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. The basis for the catch options.\*

Average catch (2004–2020)			2438 tonnes
Discard rate			Negligible
Precautionary buffer	Applied		0.8
Catch advice*			1950 tonnes
Landings corresponding to the catch advice			1950 tonnes

\* Average catch (2004–2020) × precautionary buffer



**Figure 2** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. The indicator ratio  $L_{mean} / L_{F=M}$  from the length-based indicator (LBI; ICES, 2015a) method is used for the evaluation of the exploitation status. The exploitation status is below the  $F_{MSY proxy}$  when the indicator ratio value is higher than 1 (shown by a dotted light blue line).

### Basis of the advice

**Table 2** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. The basis of the advice.

Advice basis	Precautionary approach
Management plan	The EU multiannual plan (MAP) for stocks in the North Sea (EU, 2018) and adjacent waters applies to bycatches of this stock. UK and Norway have not requested ICES to provide advice based on the EU MAP. The MAP stipulates that when the $F_{MSY}$ ranges are not available, fishing opportunities should be based on the best available scientific advice.

### Quality of the assessment

The previous assessment relied on information collected in the eastern English Channel, on age-structured data provided by France, and on length data provided by France, UK, and Netherlands. Eight percent of landings are covered by length and age sampling in 2020. Because of incomplete survey sampling in 2020, issues with the calculation of survey indices, the lack of length and age samples from the main fleets (including other areas and nations), and problems with model formulation, the stock was downgraded from category 3 to category 5.

### Issues relevant for the advice

Landings are assumed to be catches, because there is no minimum landing size and there is a market for small fish.

Recent catches of this stock mainly consist of age 0 and age 1 fish. The stock status would benefit from improved technical measures such as sorting grids, increased mesh size, and spatial and temporal closures. These measures could reduce the catches of small fish and contribute to more stable yields.

## Reference points

**Table 3** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{\text{trigger proxy}}$	Not defined		
	$F_{\text{MSY proxy}}$	$\frac{L_{\text{mean}}}{L_{F=M}} = 1^*$	Relative value from LBI analysis, assuming $M/K = 1.5$ . $L_{F=M}$ is based on $L_c$ (length at 50% of modal abundance) which varies each year	(ICES, 2015)
Precautionary approach	$B_{\text{lim}}$	Not defined		
	$B_{\text{pa}}$	Not defined		
	$F_{\text{lim}}$	Not defined		
	$F_{\text{pa}}$	Not defined		
Management plan	$SSB_{\text{MGT}}$	Not defined		
	$F_{\text{MGT}}$	Not defined		

\* No reference points are defined for this stock in terms of absolute values. The LBI-estimated values of the ratio  $L_{\text{mean}}/L_{F=M}$  are used to estimate exploitation status relative to the proxy MSY reference point.

## Basis of the assessment

**Table 4** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. Basis of the assessment and advice.

ICES stock data category	5 (ICES, 2021a)
Assessment type	No assessment
Input data	Commercial landings (length frequencies from landings sampling in Division 7.d and Subarea 4)
Discards and bycatch	Not included; are considered negligible
Additional indicators	LBI assessment based on lengths from commercial landings data (2014–2016 and 2018–2020)
Other information	Benchmarked in 2015 (ICES, 2015b)
Working group	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)

## History of the advice, catch, and management

**Table 5** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Official landings	ICES estimates
2004		-	5445	4674
2005		-	2997	2350
2006		-	1724	1483
2007		-	5328	4610
2008		-	5366	2066
2009		-	2026	1518
2010		-	2167	1920
2011		-	1815	1512
2012	No increase in catch	-	892	726
2013	No increase in catches (average 2009–2010)	< 1700	462	409
2014	Reduce catches by 36% compared to 2012	< 460	2002	1718
2015	No new advice, same as for 2014	< 460	5327	4487
2016	Precautionary approach (increase catches by no more than 20%)	< 552	3438	2579
2017	Precautionary approach (same advised catch value as given for 2016)	< 552	2856	2195
2018	Precautionary approach	≤ 465	2036	1640
2019	Precautionary approach	≤ 465	4043*	4048
2020	No catch advice requested		3482*	3503
2021	No catch advice requested			
2022	Precautionary approach	≤ 1950		
2023	Precautionary approach	≤ 1950		

\* Preliminary

## History of the catch and landings

**Table 6** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings			Discards
	Danish seine 77 %	Otter trawl 17 %	Others 6 %	
3503 tonnes	3503 tonnes			Negligible

**Table 7** Striped red mullet in Subarea 4 and divisions 7.d and 3.a. History of commercial landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

Year	Belgium	France	Netherlands	UK	Total official landings	ICES estimated landings
2004	31	4137	1148	129	5445	4674
2005	29	1918	914	136	2997	2350
2006	16	1145	466	97	1724	1483
2007	17	3982	1147	182	5328	4610
2008	20	3723	1270	353	5366	2066
2009	17	827	889	293	2026	1518
2010	80	947	802	338	2167	1920
2011	97	704	771	243	1815	1512
2012	51	170	525	146	892	726
2013	40	122	260	40	462	409
2014	79	765	912	246	2002	1718
2015	250	1741	2657	679	5327	4487
2016	184	690	2024	540	3438	2579
2017	120	887	1443	406	2856	2195
2018	92	665	1112	167	2036	1640
2019	232*	1401*	1821*	589*	4043*	4048
2020	220*	723*	1752*	787*	3482*	3503

\* Preliminary

## Summary of the assessment

There is no assessment for striped red mullet in this area.

## Sources and references

- EU. 2018. Regulation (EU) 2018/973 of the European Parliament and of the council of 4 July 2018 establishing a multiannual plan for demersal stocks in the North Sea and the fisheries exploiting those stocks, specifying details of the implementation of the landing obligation in the North Sea and repealing Council Regulations (EC) No 676/2007 and (EC) No 1342/2008. Official Journal of the European Union, L 179: 1–13. <http://data.europa.eu/eli/reg/2018/973/oj>.
- ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp.
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[Download the stock assessment data and figures.](#)

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