

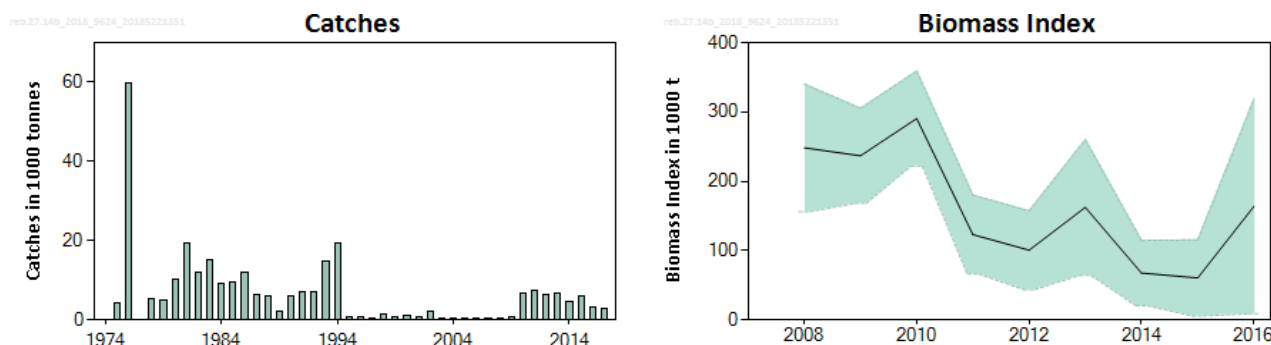
## Beaked redfish (*Sebastes mentella*) in Division 14.b, demersal (Southeast Greenland)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2019 should be no more than 914 tonnes.

### Stock development over time

After a 15-year period of no directed fishery, a directed fishery started in 2009. The survey index indicates that the biomass declined after 2010, with an increase in 2016. No 2017 survey was conducted.




**Figure 1** Beaked redfish in Division 14.b, demersal. Summary of the stock assessment. Left: Catches in 1974–2017. Right: Biomass index of *S. mentella* > 17 cm from the Greenland Shallow Water survey (0–600 m); median (solid line) and 95% confidence intervals (shaded area) are plotted.

### Stock and exploitation status

ICES cannot assess the stock and exploitation status relative to MSY and PA reference points because the reference points are undefined.

**Table 1** Beaked redfish in Division 14.b, demersal. State of the stock and fishery relative to reference points.

Table 1 Depleted Redfish in Division 14-B, Generalized State of the Stock and Fishery Relative to Reference Points.

		Fishing pressure				Stock size				
		2015	2016	2017		2016	2017	2018		
Maximum sustainable yield	$F_{MSY}$	?	?	?	Undefined	$MSY B_{trigger}$	?	?	?	Undefined
Precautionary approach	$F_{pa}, F_{lim}$	?	?	?	Undefined	$B_{pa}, B_{lim}$	?	?	?	Undefined
Management plan	$F_{MGT}$	—	—	—	Not applicable	$B_{MGT}$	—	—	—	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-		?	?	Uncertain

### Catch scenarios

The ICES framework for category 3 stocks was applied. No new information on biomass was available in 2017, therefore the precautionary buffer was applied to the catch advice given for 2018 to calculate the catch advice for 2019. Discarding is considered negligible.

**Table 2** Beaked redfish in Division 14.b, demersal. The basis for the catch scenarios. \*

Index A (2016–2017)	Not Available	
Index B (2013–2015)	97	
Index ratio (A/B)	Not Available	
Uncertainty cap	Not applied	-
Advised catch for 2018	1142	
Discard rate	Negligible	
Precautionary buffer	Applied	0.80
Catch advice for 2019 **	914	
% Advice change	-20	

\* The figures in the table are rounded. Calculations were done with unrounded inputs and computed values may not match exactly when calculated using the rounded figures in the table.

\*\* [advice for 2018 × precautionary buffer]

No new survey estimate is available in 2017 and therefore there is no new information on the stock development. However, the biomass index has been declining since 2010. This fact, in combination with the decrease in the catch from 2016 to 2017 and the decline in biomass seen in the German survey (Figure 2), indicates that the biomass is still at the same or a lower level than the year before.

### Basis of the advice

**Table 3** Beaked redfish in Division 14.b, demersal. The basis of the advice.

Advice basis	Precautionary approach
Management plan	There is no management plan for this stock.

### Quality of the assessment

In 2017, the survey was aborted due to the vessel breaking down, and thus no survey index is available this year. In 2016 the survey index had large uncertainties, because one haul accounted for 70% of the total survey biomass.

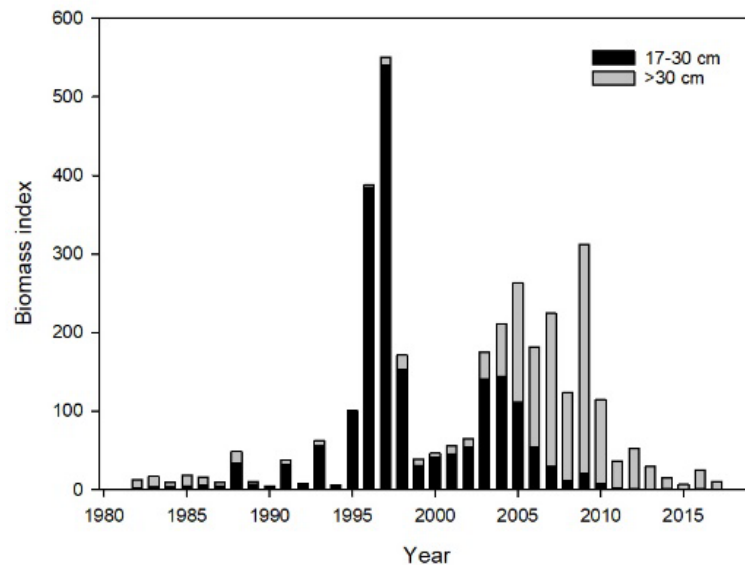
Connection to other stocks of *S. mentella* remains unresolved and their effect on survey estimates and catches is unknown.

### Issues relevant for the advice

*Sebastes mentella* is a slow-growing, late-maturing species and is therefore considered vulnerable to overexploitation. Since 2013 (GRL-GFS) and 2010 (German survey; Figure 2), survey estimates of *S. mentella* have consistently shown very low abundance of juveniles. This is consistent with patterns seen in a number of other redfish stocks. The absence of indications of incoming cohorts raises concerns about the future productivity of the stock.

Until 2016, the GRL-GFS and samples from the commercial fishery were used to estimate a split of the catches between species based on morphological identification. A comparison of morphological and genetic species identification results has shown approximately 5% misclassification in the morphological identification, leading to an overestimate of *S. mentella* catches (ICES, 2016a). Due to changes in the fishing licenses the fishermen are now obligated to report the catch at species level in the logbooks. The uncertainty of the split is expected to increase because of difficulties in species identification.

From 2009 to 2015 *S. mentella* dominated the catches; in 2016 *S. norvegicus* dominated the catches for the first time. In recent years the fishery pattern has changed and the fishery is now operating in shallower waters, which may account for some of the change in species composition of the catch.



**Figure 2** *Sebastes mentella* biomass of individuals size 17–30 cm (black) and > 30 cm (grey). German survey (0–400 m).

### Reference points

No reference points are defined for this stock.

### Basis of the assessment

**Table 4** Beaked redfish in Division 14.b, demersal. Basis of the assessment and advice.

ICES stock data category	3 ( <a href="#">ICES, 2016b</a> )
Assessment type	Survey trend-based assessment (ICES, 2018)
Input data	Survey index (GRL-GFS)
Discards and bycatch	Discarding is considered negligible.
Indicators	Survey indices GER(GRL)-GFS-Q4
Other information	The stock was benchmarked in 2012 (ICES, 2012).
Working group	North-Western Working Group ( <a href="#">NWWG</a> )

### Information from stakeholders

There is no additional available information.

## History of the advice, catch, and management

**Table 5** Beaked redfish in Division 14.b, demersal. ICES advice and official landings. Advice prior to 2011 was given for beaked redfish (*S. mentella*) in Subarea 14 and Division 5.a (Icelandic slope stock). Weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Agreed TAC for demersal redfish in Greenland EEZ	ICES catch
2011	No expansion of fishery	-	6000	7376
2012	No expansion of fishery	< 1000	6800*	6243
2013	Precautionary approach	< 3500	6800*	6761
2014	No new advice same as for 2013	< 3500	6800*	4608
2015	No new advice same as for 2013	< 3500	6800*	5977
2016	Precautionary approach	< 2240	3400**	3061
2017	Precautionary approach	< 1120	2240**	3027
2018	Precautionary approach	< 1142	1142**	
2019	Precautionary approach	< 914		

\* A TAC of 8500 t was set for *S. mentella* and *S. norvegicus*. *Sebastes mentella* is expected to constitute 80% of the catch which is 6800 t.

\*\* In an agreement between Greenland and Iceland, 10% of the TAC set for *S. norvegicus* goes to Greenland. This share is then withdrawn from Greenland's mixed TAC the given year.

## History of the catch and landings

**Table 6** Beaked redfish in Division 14.b, demersal. Catch distribution by fleet in 2017 as estimated by ICES. All weights are in tonnes.

Catch (2017)	Landings		Discards
3027	Bottom trawl 99%	Longline 1%	Negligible
	3027		

**Table 7** Beaked redfish in Division 14.b, demersal. Total catch as estimated by ICES.

Year	Catch (t)	Year	Catch (t)
1974	0	2000	982
1975	4400	2001	901
1976	59700	2002	2109
1977	0	2003	446
1978	5403	2004	482
1979	5131	2005	267
1980	10406	2006	202
1981	19391	2007	226
1982	12140	2008	92
1983	15207	2009	895
1984	9126	2010	6613
1985	9376	2011	7376
1986	12138	2012	6243
1987	6407	2013	6761
1988	6065	2014	4608
1989	2284	2015	5977
1990	6097	2016	3061
1991	7057	2017	3027
1992	7022		
1993	14828		
1994	19305		
1995	819		
1996	730		
1997	199		
1998	1376		
1999	853		

## Summary of the assessment

**Table 8** Beaked redfish in Division 14.b, demersal. Assessment summary (weights are in tonnes).

Year	Biomass Index	Biomass index upper 95% confidence interval	Biomass index lower 95% confidence interval	Catches
2008	248300	340420	156180	92
2009	236700	305300	168100	895
2010	290500	359100	221900	6613
2011	123100	179940	66260	7376
2012	100600	157440	43760	6243
2013	162300	260300	64300	6761
2014	67600	114640	20560	4608
2015	60600	115480	5720	5977
2016	163700	318540	8860	3061
2017	*	*	*	3027

\* No survey index estimate available in 2017

## Sources and references

ICES. 2012. Report of the Benchmark Workshop on Redfish Stocks (WKRED), 1–8 February 2012, Copenhagen, Denmark. ICES CM 2012/ACOM:48. 291 pp.

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ICES. 2018. Report of the North-Western Working Group (NWWG), 26 April–3 May, 2018, ICES HQ, Copenhagen, Denmark. ICES CM 2018/ACOM:09.