

Beaked redfish (*Sebastes mentella*) in Subarea 14 and Division 5.a, Icelandic slope stock (East of Greenland, Iceland grounds)

ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2022 should be no more than 7926 tonnes.

Stock development over time

ICES cannot assess the stock and exploitation status relative to maximum sustainable yield (MSY) and precautionary approach (PA) reference points, because the reference points are undefined.

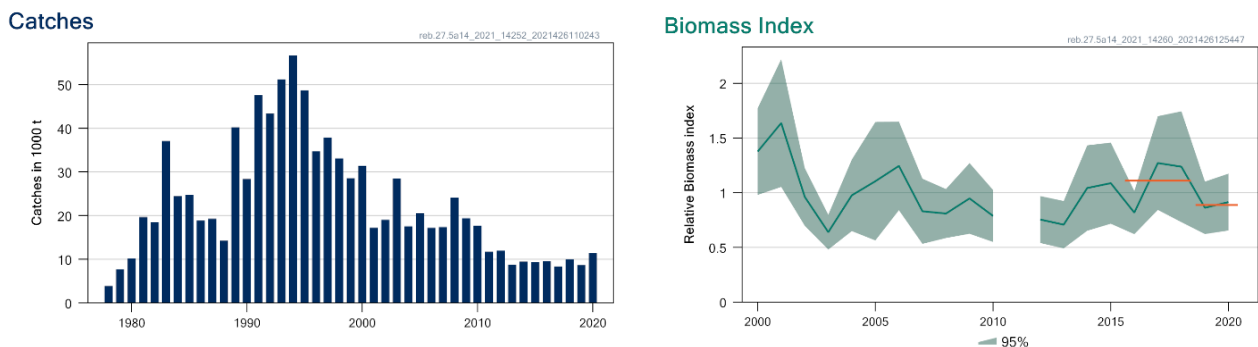


Figure 1 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. Summary of the stock assessment. Left: Catches. Right: Relative survey biomass index in Division 5.a (Icelandic Autumn Groundfish survey). The red horizontal lines indicate the average biomasses for 2016–2018 and for 2019–2020 used in the advice calculations.

Catch scenarios

The ICES framework for category 3 stocks was applied (ICES, 2012a). The Icelandic Autumn Groundfish survey index was used as the index for stock development. The advice is based on the ratio of the mean of the last two index values (index A) and the mean of the three preceding values (index B) multiplied by the recent catch advice for 2021. The precautionary buffer was applied in 2019, and was applied again this year due to the lack of incoming recruitment. Discarding is considered negligible.

Table 1 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. The basis for the catch scenarios. All weights are in tonnes.

Index A (2019–2020)		0.89
Index B (2016–2018)		1.11
Index ratio (A/B)		0.80
Uncertainty cap	Not applied	-
Advice for 2021 ¹		12 384 tonnes
Discard rate		Negligible
Precautionary buffer	Applied	0.8
Catch advice 2022 ^{**}		7926 tonnes
% Advice change		-36%

* 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 2021] × [precautionary buffer]. Advice for 2021 was issued by MFRI based on the same method agreed by ICES.

The advice for 2022 decreased due to a decrease in the stock size indicator and the application of the precautionary buffer.

¹ <https://www.hafogvatn.is/static/extras/images/61-demersalsmentella1206847.pdf>

Basis of the advice

Table 2 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. The basis of the advice.

Advice basis	Precautionary approach
Management plan	ICES is not aware of any agreed precautionary management plan for this stock.

Quality of the assessment

The lack of a long time-series of biomass indices (only available from 2000) prevents the determination of stock status of this long-lived species.

Issues relevant for the advice

Sebastes mentella is a slow-growing, late-maturing species; it is, therefore, considered particularly vulnerable to overexploitation. Since 2007, survey estimates of *S. mentella* have consistently shown very low abundance of juveniles (< 30 cm; Figure 2). This is consistent with patterns seen in a number of other redfish stocks. The absence of any indications of incoming cohorts raises concerns about the future productivity of the stock. ICES has, therefore, applied the precautionary buffer in the advice this year.

The advice is given by calendar year, though the fishing year runs from 1 September to 31 August of the following year.

Because of the COVID-19 pandemic the Ministry of Industries and Innovation in Iceland did not require advice from ICES for Icelandic slope *Sebastes mentella* for 2021. The advice was issued by the Icelandic Marine and Freshwater Research Institute (MFRI) based on the same method applied by ICES, which gave an advice of 12 384 tonnes. That figure is used in the basis for the catch scenarios (Table 1).

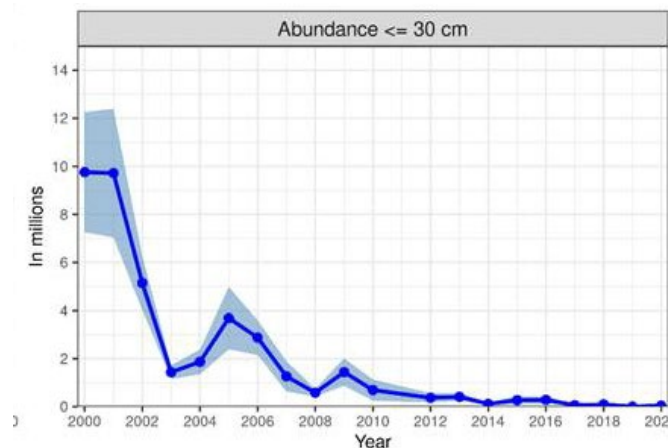


Figure 2 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. Recruitment index based on abundance of fish ≤ 30 cm from the Icelandic Autumn Groundfish survey (IS-SMH).

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 3 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2021a).
Assessment type	Survey trend-based assessment (ICES, 2021b).
Input data	Icelandic bottom trawl survey - Autumn (IS-SMH; G4493) - Hausrall survey biomass index; fishery catches (landings).
Discards and bycatch	Not included; considered negligible.
Indicators	Icelandic bottom trawl survey - Autumn (IS-SMH; G4493) - Hausrall juvenile (≤ 30 cm) abundance index.
Other information	The stock was benchmarked in 2012 (ICES, 2012b).
Working group	Northwestern Working Group (NWWG).

History of the advice, catch, and management

Table 4 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. ICES advice and catch. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Agreed TAC	ICES catch
1987	Precautionary TAC	41 000–58 000	95 000*	19 293
1988	Precautionary TAC	41 000–58 000	85 000*	14 290
1989	TAC *	117 000 *	77000*	40 269
1990	TAC *	116 000 *	80 000*	28 429
1991	Precautionary TAC	(40 000) 117 000 *	55 000 *, #	47 651
1992	Precautionary TAC	(40 000) 116000 *	90 000 *, ##	43 414
1993	Precautionary TAC	120 000 *	104 000 *, ##	51 221
1994	Precautionary TAC, if required	100 000 *	90 000 *, ##	56 720
1995	TAC	90 000 *	77 000 *, ##	48 708
1996	Precautionary TAC (45000 t in Division 5.a; 23 000 t in subareas 6 and 14)	68 000 **	65 000 *, ##	34 741
1997	Effort 75% of 95-value	39 000 **	65 000 *, ##	37 876
1998	Fishing mortality to be further reduced towards the 1986–1990 levels		65 000 *, ##	33 125
1999	Fishing mortality to be further reduced towards the 1986–1990 levels		65 000 *, ##	28 590
2000	Fishing effort to be further reduced by 25%		60 000 *, ##	31 393
2001	Fishing effort to be reduced by 25% from the 1998 level	22 000 ^	570 00 *, ##	17 230
2002	Status quo fishing effort	36 000 ^^	65 000 *, ##	19 045
2003	Not higher fishing effort than recent average	30 000 ^^	60 000 *, ##	28 478
2004	Not higher fishing effort than recent average	26 400 ^^	57 000 *, ##	17 564
2005	Reduce catch to 2001 level in Subarea 5	22 500 ^^	57 000 *, ##	20 563
2006	Reduce catch to 2001 level in Subarea 5	22 000 ^^	57 000 *, ##	17 208
2007	Same advice as last year	22 000 ^^	57 000 *, ##	17 373
2008	Same advice as last year	22 000 ^^	57 000 *, ##	24 123
2009	Develop management plan and reduce catch	< 10 000 #	50 000 *, ##	19 430
2010	Develop management plan and reduce catch	< 10 000 #	50 000 *, ##	17 642
2011	Same advice as last year	< 10 000 #	12 500 **, ##	11 738
2012	Same advice as last year	< 10 000 #	12 000 **, ##	11 965
2013	Same advice as last year	< 10 000 #	12 000 **, ##	8761
2014	10.5% decrease with an additional 20% reduction	≤ 9875	10 000 **, ##	9500
2015	Same catch advice as last year	≤ 9875	10 000 **, ##	9311
2016	Precautionary approach	$\leq 10 768$	10 000 **, ##	9536
2017	Precautionary approach	$\leq 12 922$	12 922 **, ##	8371
2018	Precautionary approach	$\leq 11 786$	11 786 **, ##	9995
2019	Precautionary approach	$\leq 13 012$	13 012 **, ##	8716
2020	Precautionary approach	$\leq 12 492$	12 492 **, ##	11 375

Year	ICES advice	Catch corresponding to advice	Agreed TAC	ICES catch
2021	No advice requested [§]	-	12 384 **, ##	
2022	Precautionary approach	≤ 7926		

* Deep-sea *S. mentella* and *S. norvegicus* combined.

** Deep-sea *S. mentella* only.

^ In Division 5.a only.

^^ For the entire Subarea 5.

Year ending 31 August.

Quota year September–August.

§ No advice was requested for 2021. Advice for 2021 was issued by MFRI based the same method agreed by ICES (12 384 tonnes).

History of the catch and landings

Table 5 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. Catch distribution by fleet in 2020 as estimated by ICES.

Catch (2020)	Landings	Discards
11 375 tonnes	Bottom trawl 100%	Discarding is considered negligible
	11 375 tonnes	

Table 6 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. History of commercial catch in the Icelandic EEZ; ICES estimated values are presented. All weights are in tonnes.

Year	Iceland	Other countries	Total
1978	3693	209	3902
1979	7448	246	7694
1980	9849	348	10 197
1981	19 242	447	19 689
1982	18 279	213	18 492
1983	36 585	530	37 115
1984	24 271	222	24 493
1985	24 580	188	24 768
1986	18 750	148	18 898
1987	19 132	161	19 293
1988	14 177	113	14 290
1989	40 013	256	40 269
1990	28 214	215	28 429
1991	47 378	273	47 651
1992	43 414	0	43 414
1993	51 221	0	51 221
1994	56 674	46	56 720
1995	48 479	229	48 708
1996	34 508	233	34 741
1997	37 876	0	37 876
1998	32 841	284	33 125
1999	27 475	1115	28 590
2000	30 185	1208	31 393
2001	15 415	1815	17 230
2002	17 870	1175	19 045
2003	26 295	2183	28 478
2004	16 226	1338	17 564
2005	19 109	1454	20 563
2006	16 339	869	17 208
2007	17 091	282	17 373
2008	24 123	0	24 123
2009	19 430	0	19 430
2010	17 642	0	17 642
2011	11 738	0	11 738
2012	11 965	0	11 965

Year	Iceland	Other countries	Total
2013	8761	0	8761
2014	9500	0	9500
2015	9311	0	9311
2016	9536	0	9536
2017	8371	0	8371
2018	9995	0	9995
2019	8716	0	8716
2020	11 375	0	11 375

Summary of the assessment

Table 7 Beaked redfish in Subarea 14 and Division 5.a, Icelandic slope stock. Assessment summary. Weights are in tonnes.

Year	Relative survey biomass (Icelandic Autumn Groundfish survey)	Relative survey biomass upper 95th percentile	Relative survey biomass lower 5th percentile	Catches
2000	1.38	1.77	0.98	31 393
2001	1.64	2.2	1.05	17 230
2002	0.96	1.23	0.70	19 045
2003	0.64	0.80	0.48	28 478
2004	0.98	1.30	0.65	17 564
2005	1.10	1.65	0.56	20 563
2006	1.24	1.65	0.84	17 208
2007	0.83	1.13	0.53	17 373
2008	0.81	1.03	0.59	24 123
2009	0.95	1.27	0.62	19 430
2010	0.79	1.02	0.55	17 642
2011*				11 738
2012	0.76	0.97	0.54	11 965
2013	0.71	0.92	0.49	8 761
2014	1.04	1.43	0.65	9 500
2015	1.09	1.46	0.72	9 311
2016	0.82	1.01	0.62	9 536
2017	1.27	1.70	0.84	8 371
2018	1.24	1.74	0.73	9 995
2019	0.86	1.10	0.62	8 716
2020	0.91	1.17	0.65	11 375

* No survey was conducted in 2011.

Sources and references

ICES. 2012a. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp. <https://doi.org/10.17895/ices.pub.5322>.

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ICES. 2021a. Advice on fishing opportunities. *In* Report of the ICES Advisory Committee, 2021. ICES Advice 2021, section 1.1.1. <https://doi.org/10.17895/ices.advice.7720>.

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[Download the stock assessment data and figures.](#)

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