

2.3.13 Beaked redfish (*Sebastes mentella*) in ICES subareas 5, 12, and 14 (Iceland and Faroes grounds, north of Azores, east of Greenland) and NAFO subareas 1 and 2 (shallow pelagic stock < 500 m)

ICES stock advice

ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2017 and 2018.

Stock development over time

The biomass index from the acoustic surveys in 2009–2013 indicates that the stock has declined to less than 5% of the estimates at the beginning of the survey time-series in the early 1990s. The exploitation rate for this stock is unknown. No survey biomass estimates are available after 2013. The area covered by the survey increased from 1997 to 2001. Though it has since declined, it remains much higher than the initial coverage in the early part of the time-series. The stock size indicator is for the biomass in the area covered and has not been corrected for these changes. This may result in an underestimation of the stock decline.

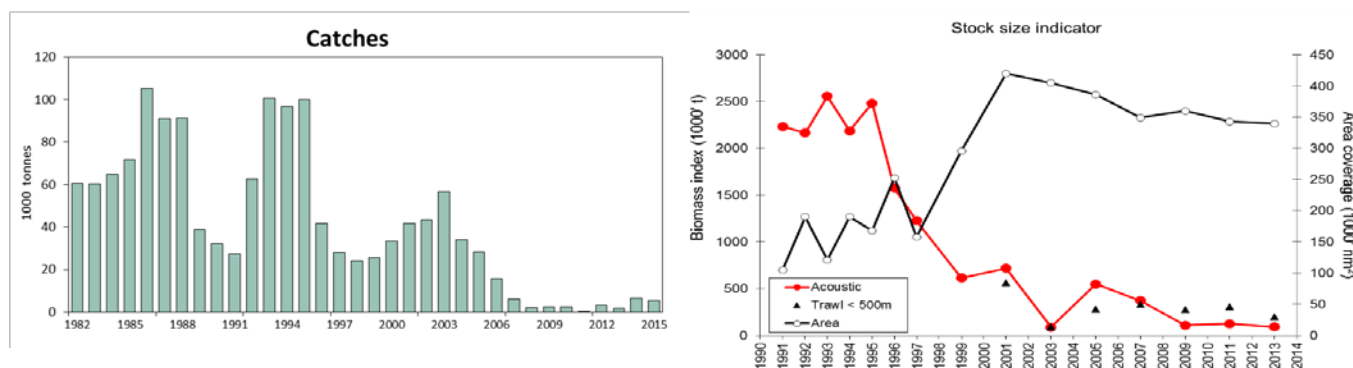


Figure 2.3.13.1 Beaked redfish in ICES subareas 5, 12, and 14 and in NAFO subareas 1 and 2 (shallow pelagic stock < 500 m). Top: Catches (thousand tonnes). Bottom: Results of acoustic survey indices (thousand tonnes) from above the scattering layer (red filled circle), trawl estimates within the scattering layer and shallower than 500 m (black triangle), and area coverage (NM²) of the survey (black open circle) in the Irminger Sea and adjacent waters.

Stock and exploitation status

Table 2.3.13.1 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). State of the stock and fishery relative to reference points.

	Fishing pressure				Stock size					
		2013	2014	2015		2013	2014	2015		
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	$B_{trigger}$?	?	?	Undefined
Precautionary approach	F_{pa} , F_{lim}	?	?	?	Undefined	B_{pa} , B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	⊗	⊗	⊗	Likely below potential reference points

Catch options

The stock is at a very low level and there is no information on exploitation rates. Therefore, ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2017 and 2018.

Basis of the advice

Table 2.3.13.2 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). The basis of the advice.

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

Quality of the assessment

The assessment would benefit from consistent survey coverage and a recruitment index. No estimate from the acoustic survey was obtained in 2015 because the Russian Federation cancelled its participation in the survey and no alternatives could be arranged to make up for the corresponding loss in survey coverage. The geographical distribution of the shallow pelagic redfish stock was therefore not covered.

ICES again did not obtain catch estimates disaggregated by depth from all countries (ICES, 2016a). ICES recommends that all countries should report depth information on a haul basis in accordance with the NEAFC logbook format. There is a need for action through NEAFC and NAFO to provide ICES with timely and complete information that may lead to more reliable catch statistics.

Issues relevant for the advice

The Russian Federation has decided on a unilateral quota since 2011 that considered both redfish management units (shallow and deep pelagic redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1+2) as a single stock. In recent years the sum of all quotas allocated by management has considerably exceeded the sum of ICES advised catch for both stocks.

Sebastes mentella is a slow-growing, late-maturing species, and recovering from a low stock level will therefore extend over many years. Simulations show that even at the present low catch levels there is a high probability that the pelagic redfish stock will not increase over the next decade (ICES, 2014).

This stock is sometimes caught as bycatch in the fishery targeting the deep pelagic stock in the same area and in fisheries in adjacent areas. These bycatches should be kept as low as possible.

No new survey data will be available until June/July 2018. Therefore, advice is given for both 2017 and 2018.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 2.3.13.3 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). The basis of the assessment.

ICES stock data category	3 (ICES, 2016b)
Assessment type	Qualitative assessment, survey-based trends.
Input data	Commercial catches (international landings); one survey index (International Trawl and Acoustic Survey).
Discards and bycatch	Discarding is assumed negligible and not included in the assessment.
Indicators	Life history knowledge
Other information	The stock was benchmarked in 2012; no specific assessment method was accepted.
Working group	North-Western Working Group (NWWG)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 2.3.13.4 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). History of ICES advice, the agreed TAC, and ICES estimates of catches.

Year	ICES advice*	Predicted catch corresponding to advice*	TAC*	ICES catch Total^	ICES catch shallow pelagic stock
1987	No assessment	-		91	91
1988	No assessment	-		91	91
1989	TAC	90–100		39	39
1990	TAC	90–100		32	32
1991	TAC	66		28	27
1992	Preference for no major expansion of the fishery	-		66	63
1993	TAC	50		116	100
1994	TAC	100		148	97
1995	TAC	100		176	97
1996	No specific advice	-	153	180	41
1997	No specific advice	-	153–158	123	28
1998	TAC not over recent (1993–1996) levels of 150 000 t		153	117	24
1999	TAC to be reduced from recent (1993–1996) levels of 150 000 t		153	110	26
2000	TAC set lower than recent (1997–1998) catches of 120 000 t	85	120	126	33
2001	TAC less than 75% of catch 1997–1999	< 85	95	129	41
2002	TAC less than 75% of catch 1997–1999 – Revised to be below current catch levels	< 85	Not agreed NEAFC proposal (95)	146	43
2003	TAC not exceed current catch levels	119	Not agreed NEAFC proposal (119)	161	57
2004	TAC not exceed current catch levels	120	Not agreed NEAFC proposal (120)	126	34
2005	Limit catch to 41 kt	41	Not agreed NEAFC proposal (75) / (116**)	74	28
2006	Catch less than 41 kt	41	Not agreed NEAFC proposal (62) / (99**)	83	16
2007	No fishery until clear indications of recovery of the stock	0	Not agreed NEAFC proposal (46) / (73**)	64	6

Year	ICES advice*	Predicted catch corresponding to advice*	TAC*	ICES catch Total [^]	ICES catch shallow pelagic stock
2008	Starting point for adaptive management strategy	20	Not agreed NEAFC proposal (46) / (64**)	32	2
2009	Starting point for adaptive management strategy	20	Not agreed NEAFC proposal (0) / (72**)	54	2.7
2010 ¹⁾	No directed fishery and bycatch as low as possible	-	Not agreed NEAFC proposal (0) / (72**)	59	2.4
2011	Same advice as last year	-	Not agreed NEAFC proposal (0)/(60** / (30)***)	48	0.5
2012	Same advice as last year	-	Not agreed NEAFC proposal (0)/(54** / (30)***)	36	3.2
2013	Same advice as last year	-	Not agreed NEAFC proposal (0)/(48** / (27)***)	48	1.5
2014	Same advice as last year	-	Not agreed NEAFC proposal (0)/(48** / (27)***)	30	6.4
2015	Same advice as last year	-	Not agreed NEAFC proposal (0)/(35** / (27)***)	33	5.6
2016	No directed fishery and minimize bycatch	-	Not agreed NEAFC proposal (0)/(35** / (27)***)		
2017	Precautionary approach: zero catch advice	0			
2018	Precautionary approach: zero catch advice	0			

Weights in thousand tonnes.

* Up to 2009 advice and TAC were given for both shallow and deep stocks.

** Sum of all quotas in force for both shallow and deep pelagic.

*** Unilateral Russian Federation TAC for both shallow and deep pelagic stocks.

[^] Total catch includes catches for both shallow and deep pelagic stocks.

History of catch and landings

Table 2.3.13.5 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). Catch distribution by fleet in 2015 as estimated by ICES.

Total catch (2015)	Landings	Discards
5 595 t	100% pelagic trawl	Negligible
	5 595 t	

Table 2.3.13.6 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). History of commercial catch (t), ICES estimated values are presented by area.

Year	ICES 5.a	ICES 12	ICES 14	NAFO 1F	NAFO 2J	NAFO 2H	Total
1982	0	39783	20798	0	0	0	60581
1983	0	60079	155	0	0	0	60234
1984	0	60643	4189	0	0	0	64832
1985	0	17300	54371	0	0	0	71671
1986	0	24131	80976	0	0	0	105107
1987	0	2948	88221	0	0	0	91169
1988	0	9772	81647	0	0	0	91419
1989	0	17233	21551	0	0	0	38784
1990	0	7039	24477	385	0	0	31901
1991	0	9689	17048	458	0	0	27195
1992	106	22976	38709	0	0	0	62564
1993	0	66458	32500	0	0	0	100771
1994	665	77174	18679	0	0	0	96869
1995	77	78895	17895	0	0	0	100136
1996	16	22474	18566	0	0	0	41770
1997	321	18212	8245	0	0	0	27746
1998	284	21976	1598	0	0	0	24150
1999	165	23659	827	534	0	0	25512
2000	3375	17491	687	11052	0	0	33216
2001	228	32164	1151	5290	8	1751	41825
2002	10	24004	222	15702	0	3143	43216
2003	49	24211	134	26594	325	5377	56688
2004	10	7669	1051	20336	0	4778	33951
2005	0	6784	281	16260	5	4899	28229
2006	0	2094	94	12692	260	593	15734
2007	71	378	98	2843	175	2561	6126
2008	32	25	422	1580	0	0	2059
2009	0	210	2170	0	0	0	2380
2010	15	686	423	1074	0	0	2198
2011	0	0	234	0	0	0	234
2012	28	0	0	3113	32	0	3173
2013	32	13	40	1443	1	0	1529
2014	153	5068	489	713	0	0	6423
2015	161	2281	0	3119	34	0	5595

1982–1991: All pelagic catches assumed to be of the shallow pelagic stock.

1992–1996: Estimates based on different sources and expert judgement.

1997–2015: Calculations based on joint catch by depth database from some countries and total catch of “deep” and “shallow” pelagic *S. mentella*.

Table 2.3.13.7 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). Catches inside and outside the NEAFC Regulatory Area (RA) as estimated by ICES. Weights are in tonnes.

Year	Inside the NEAFC RA (t)	Outside the NEAFC RA (t)	Catches (t)
2012	0	3173	3173
2013	53	1476	1529
2014	5557	866	6423
2015	2281	3314	5595

Table 2.3.13.8 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). History of commercial catch (t), ICES estimated values are presented by country.

Year	Bulgaria	Canada	Estonia	Faroes	France	Germany	Greenland	Iceland	Japan	Latvia	Lithuania	Netherlands	Norway	Poland	Portugal	Russia*	Spain	UK	Ukraine	Total
1982														581		60000				60581
1983						155										60079				60234
1984	2961					989								239		60643				64832
1985	5825					5438								135		60273				71671
1986	11385			5		8574								149		84994				105107
1987	12270			382		7023								25		71469				91169
1988	8455			1090		16848										65026				91419
1989	4546			226		6797	567	3816						112		22720				38784
1990	2690					7957		4537					7085			9632				31901
1991			2195	115		201		8724					6197			9747				27179
1992	628		1810	3765	2	6447	9	12080		780	6656		14654			15733				62564
1993	3216		6365	812		16677	710	10167		6803	7899		14112			25229			2782	100771
1994	3600		17875	2896	606	15133		5897		13205	7404		6834		1510	16349			5561	96869
1995	2660	421	11798	3667	158	10714	277	8733	841	3502	16025	9	4288		2170	28314	1934		2230	100136
1996	1846	343	3741	2523		5696	1866	5760	219	572	5618		1681		476	9348	1671	137	273	41770
1997		102	3405	3510		9276		4446	28				330	776	367	3693	1812			27746
1998			3892	2990		9679	1161	1983	30		1734		701	12	60	89	1819			24150
1999			2055	1190		8271	998	3662					2098	6	62	6538	447	183		25512
2000			4218	486		5672	956	3766			430		2124		37	14373	1154			33216
2001			9	4364		4755	1083	14745			8269		947		256	5964	1433			41825
2002				719		5354	657	5229		1841	12052		1094	428	878	13958	1005			43216
2003				1955		3579	1047	4274		1269	21629		3214	917	1926	15418	1461			56688
2004				777		1126	750	5728		1114	3698		2721	1018	2133	13208	1679			33951
2005				210		1152		3086		919	1169		624	1170	2780	15562	1557			28229
2006				334		994		1293		1803	466		280	663	1372	4953	3576			15734
2007			209	98		0		71		186	467			189	529	4037	339			6126
2008				319				63			8					1597	73			2059
2009				87				5			138					649	1438			2380
2010				653				22			551		12		377	567	16			2198

Year	Bulgaria	Canada	Estonia	Faroes	France	Germany	Greenland	Iceland	Japan	Latvia	Lithuania	Netherlands	Norway	Poland	Portugal	Russia*	Spain	UK	Ukraine	Total	
2011				162				72													234
2012								28								3145					3173
2013								72								1457					1529
2014								355			287					5781					6423
2015								161								5434					5595

* Prior to 1991, the figures represent USSR and include Russian Federation, Estonian, Latvian, Lithuanian, and Ukrainian catches.

Summary of the assessment

Table 2.3.13.9 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). Survey biomass estimates. No survey biomass estimates were obtained in 2015.

Year	Area covered (thousand NM ²)	Acoustic estimates (thousand tonnes)	Trawl estimates (thousand tonnes)
1991	105	2235	
1992	190	2165	
1993	121	2556	
1994	190	2190	
1995	168	2481	
1996	253	1576	
1997	158	1225	
1999	296	614	
2001	420	716	565
2003*	405	89*	92*
2005	386	550	
2007	349	372	
2009	360	108	278
2011	343	123	309
2013	340	91	201

* The 2003 biomass estimate is considered inconsistent as the survey was carried out about one month earlier than usual, and a marked seasonal effect was observed.

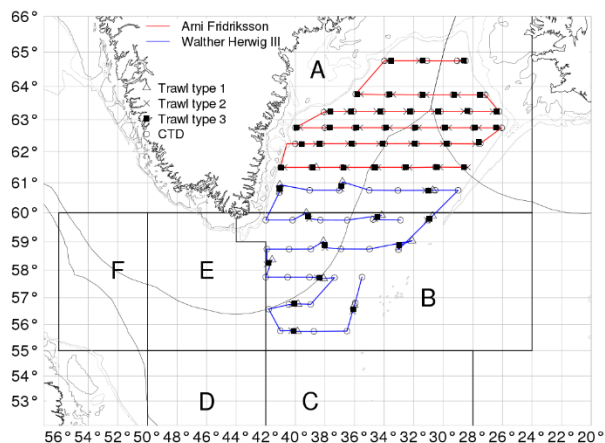


Figure 2.3.13.2 Beaked redfish in ICES subareas 5, 12, and 14 and NAFO subareas 1 and 2 (Shallow pelagic stock < 500 m). Survey cruise tracks in the international redfish survey in June/July 2015. Areas C–E are normally covered in this survey, but were not surveyed in 2015 and no biomass estimate could be obtained for the stock.

Sources and references

ICES. 2014. Report of the Workshop on Redfish Management Plan Evaluation (WKREDMP), 20–25 January, Copenhagen, Denmark. ICES CM 2014/ACOM:52. 269 pp.

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