

Golden redfish (*Sebastes norvegicus*) in subareas 5, 6, 12, and 14 (Iceland and Faroes grounds, West of Scotland, North of Azores, East of Greenland)

ICES advice on fishing opportunities

ICES advises that when the maximum sustainable yield (MSY) approach is applied, catches in 2026 should be no more than 41 345 tonnes.

Non-fisheries conservation considerations

Conservation aspects and associated management measures may exist at a national or regional level but were not reviewed by ICES.

Stock development over time

Fishing pressure on the stock is below F_{MSY} and F_{PA} , and spawning-stock size is above MSY $B_{trigger}$, B_{PA} , and B_{lim} .

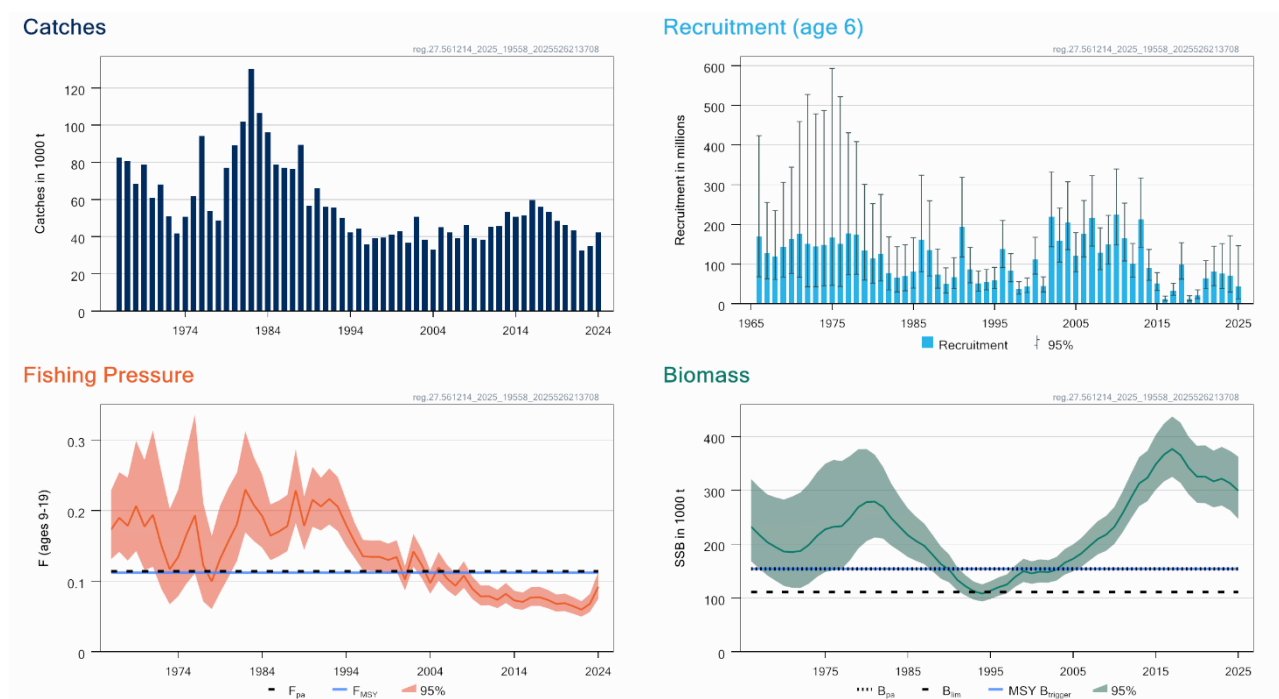


Figure 1 Golden redfish in subareas 5, 6, 12, and 14. Summary of the stock assessment.

Catch scenarios

Table 1 Golden redfish in subareas 5, 6, 12, and 14. Values in the forecast and for the interim year.

Variable	Value	Notes
$F_{ages\ 9-19}$ (2025)	0.132	Based on assumed catch in 2025
Spawning-stock biomass (SSB; 2026)	277 646	Short-term forecast; tonnes
$R_{age\ 6}$ (2025)	42 905	From the assessment; thousands
$R_{age\ 6}$ (2026)	67 314	Median, resampled from the years 2021–2025; thousands
Total catch (2025)	46 911	Catch corresponding to advice; tonnes

Table 2 Golden redfish in subareas 5, 6, 12, and 14. Annual catch scenarios. All weights are in tonnes.

Basis	Total catch (2026)	F_{9-19} (2026)	Spawning-stock biomass (SSB; 2027)	% SSB change*	% advice change**
ICES advice basis					
MSY approach, $F = F_{MSY}$	41 345	0.112	265 015	-4.6	-11.9
Other scenarios					
$F_{2026} = 0$	0	0	294 064	5.9	-100
$F_{2026} = F_{2024}$	34 230	0.092	269 930	-2.8	-27

* SSB 2027 relative to SSB 2026.

** Advice value for 2026 relative to the advice value for 2025 (46 911 tonnes).

The advised catch has decreased because the stock size decreased.

Basis of the advice

Table 3 Golden redfish in subareas 5, 6, 12, and 14. The basis of the advice.

Advice basis	Maximum sustainable yield (MSY) approach
Management plan	ICES is aware of a management plan agreed between Greenland and Iceland for golden redfish

Quality of the assessment

The spawning-stock biomass (SSB) and fishing pressure estimates in 2025 are consistent with the previous two assessments.

Because of the aggregating behaviour of the species, survey indices are often largely dominated by a few large hauls. This causes high uncertainties in the survey indices and large interannual fluctuation in estimates of the biomass index.

Subarea 6 catches are not included in the stock assessment because they are only reported as *Sebastes* sp.. These account for around 1% of total catch.

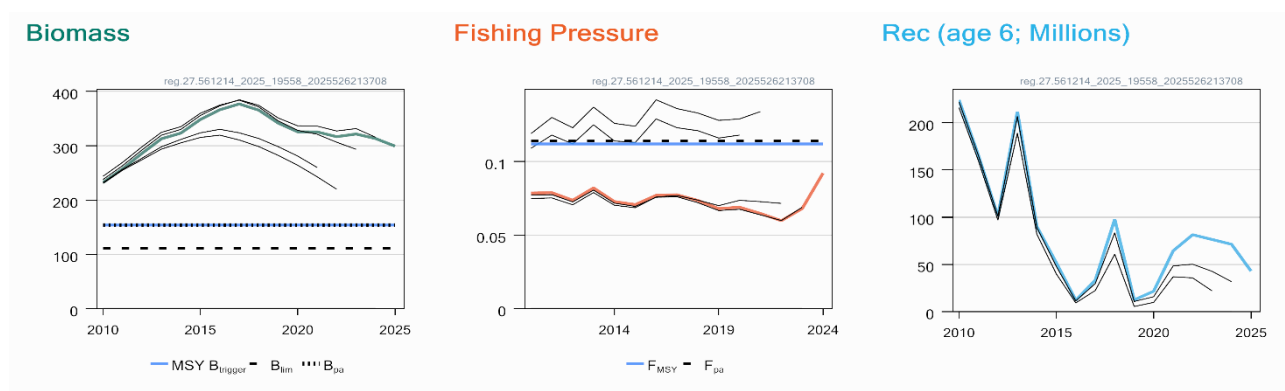


Figure 2 Golden redfish in subareas 5, 6, 12, and 14. Historical assessment results. The reference points were revised in 2023 following a benchmark and only assessment results for 2023 onwards should be compared to the reference points indicated. Prior to the benchmark, recruitment was estimated at age 5 and is not shown.

Issues relevant for the advice

Since 2009, surveys of golden redfish have consistently shown very low abundance of small fish (≤ 30 cm). While current estimates of SSB were revised upwards with the change in assessment model, they have been on a decreasing trend since 2017. Recruitment since 2014 has been at a low level compared to the stock history. This raises concerns about the productivity of the stock. Without substantial recruitment, stock levels are likely to continue to decline for several years.

No formal agreement on the management of fisheries on golden redfish exists among the three coastal states of Greenland, Iceland, and the Faroe Islands. An agreement exists between Iceland and Greenland since July 2023 on the management of the golden redfish fishery based on ICES MSY approach.

Reference points

Table 4 Golden redfish in subareas 5, 6, 12, and 14. Reference points, values, and their technical basis. All weights are in tonnes.

Framework	Reference point	Value	Technical basis	Source
Maximum sustainable yield (MSY) approach	MSY $B_{trigger}$	154 094	B_{PA} ; tonnes	ICES (2023a)
	F_{MSY}	0.112	Fishing mortality that leads to MSY; estimated using stochastic simulations	ICES (2023a)
Precautionary approach	B_{lim}	110 893	B_{loss} . Lowest SSB (1994); tonnes	ICES (2023a)
	B_{PA}	154 094	$B_{lim} \times e^{(\sigma \times 1.645)}$; $\sigma = 0.2$; tonnes	ICES (2023a)
	F_{PA}	0.114	F_{P05} , maximum F at which the probability of spawning-stock biomass (SSB) falling below B_{lim} is < 5%	ICES (2023a)

Basis of the assessment

Table 5 Golden redfish in subareas 5, 6, 12, and 14. Basis of assessment and advice.

ICES stock data category	1 (ICES, 2023b).
Assessment type	Age-based analytical assessment (SAM; Nielsen and Berg, 2014) that uses catches in the model and in the forecast (ICES, 2025)
Input data	Catch-at-age and age-disaggregated survey indices. Landings data and length distributions of catches from Iceland, Greenland, and the Faroes; survey data from the Icelandic Spring Groundfish Survey (IS-SMB [G3239]), Icelandic Autumn Groundfish Survey (IS-SMH [G4493]), German Groundfish Survey in Greenland (GGG [G3244]), Faroes Spring Groundfish Survey (FO-GFS-Q1 [G1264]) and Faroes Summer Groundfish Survey (FO-GFS-Q3 [G3284]); age data from Icelandic catches and the Icelandic Autumn Groundfish Survey (IS-SMH [G4493]). Natural mortality fixed at 0.05 for ages up to 25, and 0.1 for ages 25+, in all years. Weights and maturities from the Icelandic Spring Groundfish Survey.
Discards	Considered negligible
Indicators	None
Other information	Benchmarked in 2023 (ICES, 2023a)
Working group	Northwestern Working Group (NWWG)

History of the advice, catch, and management

Table 6 Golden redfish in subareas 5, 6, 12, and 14. ICES advice, total allowable catches (TACs), and ICES catch. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Iceland TAC*, ##	Greenland TAC†	ICES catch**
1987	No increase in F	83 000	95 000		77 127
1988	No increase in F	84 000	85 000		89 989
1989	TAC*	117 000*	77 000		57 050
1990	TAC*	116 000*	80 000		66 632
1991***	Precautionary TAC	77 000 (117 000*)	55 000#		56 364
1992***	Precautionary TAC	76 000 (116 000*)	90 000		55 710
1993	Precautionary TAC*	120 000*	104 000		50 350
1994	Precautionary TAC, if required*	100 000*	90 000		42 515
1995	TAC*	90 000*	77 000		44 765
1996	TAC for Division 5.a (28000 tonnes); precautionary TAC for Division 5.b and Subarea 14 (4000 tonnes)	32 000	65 000		36 597
1997	Effort 75% of 1995 value	32 000	65 000		39 761
1998	Effort reduced in steps of 25% from the 1995 level	37 200	65 000		39 825

Year	ICES advice	Catch corresponding to advice	Iceland TAC*, ##	Greenland TAC†	ICES catch**
1999	Effort not increased compared to 1997	35 000	65 000		42 040
2000	Catch not increased compared to 1998	35 000	60 000		43 550
2001	Effort not increased compared to 1999	33 000^	57 000		37 326
2002	25% reduction in effort	29 000^^	65 000		51 092
2003	25% reduction in effort (2001)	31 000^^	60 000		39 220
2004	25% reduction in effort (2002)	37 400^^	57 000		33 451
2005	Maintain fishable biomass above U_{pa}^{***}	37 000^^	57 000		45 329
2006	Maintain fishable biomass above U_{pa}^{***}	37 000^^	57 000		42 211
2007	Maintain fishable biomass above U_{pa}^{***}	37 000^^	57 000	5 000	39 134
2008	Maintain fishable biomass above U_{pa}^{***}	37 000^^	57 000	1 000	46 251
2009	Maintain fishable biomass above U_{pa}^{***}	< 30 000	50 000		39 177
2010	Maintain fishable biomass above U_{pa}^{***}	< 30 000	50 000	6 000	38 648
2011	Same advice as last year	< 30 000	37 500	8 500	45 354
2012	Maintain catches	< 40 000	40 000	8 500	45 635
2013	Maintain catches	< 40 000	45 000	8 500	53 263
2014	20% increase in catches (relative to 2010–2012)	< 51 980	52 000	8 500	50 736
2015	Management plan	< 47 300	45 600	8 500	51 645
2016	Management plan	< 51 000	48 500	8 500	59 707
2017	Management plan	≤ 52 800	47 205	7 520	56 141
2018	Management plan	≤ 50 800	45 450	6 222	53 227
2019	Management plan	≤ 43 600	39 240	5 274	48 530
2020	Management plan	≤ 43 568	38 896	5 271	46 197
2021	Management plan	≤ 38 343	34 379	4 748	43 426
2022	Management plan	≤ 31 855	28 554	3 186	32 873
2023	Management plan	≤ 25 545	22 615	5 109	35 988
2024	F_{MSY}	≤ 41 286	36 462	4 509	42 279
2025	F_{MSY}	≤ 46 911	41 848	5 127††	
2026	F_{MSY}	≤ 41 345			

* Deep-sea *S. mentella* and *S. norvegicus* combined until 2010.

** Includes *Sebastes spp* landings in Subarea 6.

*** Values in parentheses are combined advice for *S. norvegicus* and *S. mentella*.

^ In Division 5.a only.

^^ Both divisions 5.a and 5.b and Subarea 14.

^^^ U_{pa} - Icelandic spring groundfish survey index.

Fishing year ending 31 August.

From 1992 onwards: fishing year 01 September–31 August.

† Demersal redfish (*S. norvegicus* and *S. mentella*).

†† Golden redfish (*S. norvegicus*)

History of the catch and landings

There are no catches taken in the NEAFC regulatory areas (RAs).

Table 7 Golden redfish in subareas 5, 6, 12, and 14. Catch distribution by fleet in 2024 as estimated by ICES. All weights are in tonnes.

Catch (2024)	Landings		Discards
42 279	Bottom trawl 96%	Other gear 4%	Considered negligible
	42 279		

Table 8 Golden redfish in subareas 5, 6, 12, and 14. History of commercial catch; ICES estimated values are presented by area in the fishery. All weights are in tonnes.

Year	Area				Total
	Division 5.a	Division 5.b	Subarea 6**	Subarea 14	
1966	59 245	54		23 290	82 589
1967	47 413	64		33 198	80 675
1968	45 089	99		23 079	68 267
1969	48 391	33		30 367	78 792
1970	42 662	33		18 162	60 857
1971	47 498	24		20 436	67 958
1972	36 857	53		13 970	50 880
1973	33 605	206		7 899	41 710
1974	36 219	473		13 978	50 670
1975	40 029	963		20 915	61 907
1976	40 519	109		53 545	94 172
1977	38 507	767		14 433	53 707
1978	31 300	2 039	313	15 477	49 129
1979	56 616	4 805	6	15 787	77 214
1980	62 052	4 920	2	22 203	89 177
1981	75 828	2 538	3	23 608	101 977
1982	97 899	1 810	28	30 692	130 429
1983	87 412	3 394	60	15 636	106 502
1984	84 766	6 228	86	5 040	96 120
1985	67 312	9 194	245	2 117	78 868
1986	67 772	6 300	288	2 988	77 348
1987	69 212	6 143	576	1 196	77 127
1988	80 472	5 020	533	3 964	89 989
1989	51 852	4 140	373	685	57 050
1990	63 156	2 407	382	687	66 632
1991	49 677	2 140	292	4 255	56 364
1992	51 464	3 460	40	746	55 710
1993	45 890	2 621	101	1 738	50 350
1994	38 669	2 274	129	1 443	42 515
1995	41 516	2 581	606	62	44 765
1996	33 558	2 316	664	59	36 597
1997	36 342	2 839	542	37	39 760
1998	36 771	2 565	379	109	39 824
1999	39 824	1 436	773	7	42 040
2000	41 187	1 498	776	89	43 550
2001	35 067	1 631	535	93	37 326
2002	48 570	1 941	392	189	51 092
2003	36 577	1 459	968	215	39 219
2004	31 686	1 139	519	107	33 451
2005	42 593	2 484	137	115	45 329
2006	41 521	656	0	34	42 211
2007	38 364	689	0	83	39 136
2008	45 538	569	64	80	46 251
2009	38 442	462	50	224	39 178
2010	36 155	620	220	1 653	38 648
2011	43 773	493	83	1 005	45 354
2012	43 089	491	80	1 973	45 633
2013	51 330	372	92	1 485	53 279
2014	47 775	202	60	2 706	50 743
2015	48 769	270	44	2 562	51 645
2016	54 036	179	50	5 442	59 707
2017	50 119	1 418	93	4 511	56 141
2018	48 014	1 129	80	4 004	53 227
2019	44 746	1 119	101	2 665	48 631

Year	Area				Total
	Division 5.a	Division 5.b	Subarea 6**	Subarea 14	
2020	40 688	1 304	100	4 105	46 197
2021	39 616	178	100	3 532	43 426
2022	30 037	128	498	2 210	32 873
2023	32 192	182	541	3 073	35 988
2024*	38 355	250	93	3 573	42 279

* Preliminary.

** *Sebastes* spp.

Summary of the assessment

Table 9 Golden redfish in subareas 5, 6, 12, and 14. Assessment summary. Weights are in tonnes. Recruitment in thousands. “High” and “Low” correspond to 95% confidence intervals.

Year	Recruitment (age 6)			Spawning-stock biomass (SSB)			Total catch	Fishing mortality (ages 9–19)		
	Low	R	High	Low	SSB	High		Low	F	High
1966	67883	169595	423704	168720	232952	321638	82589	0.131	0.173	0.23
1967	63128	126922	255181	154827	217679	306045	80675	0.142	0.190	0.25
1968	61304	120086	235229	141822	203680	292518	68267	0.129	0.179	0.25
1969	67291	143524	306119	131936	194629	287112	78792	0.143	0.21	0.30
1970	76624	162368	344060	122521	186247	283117	60857	0.116	0.177	0.27
1971	66899	175267	459177	118990	185343	288697	67958	0.120	0.194	0.31
1972	43210	150954	527352	118597	187408	296143	50881	0.089	0.151	0.26
1973	43226	143803	478407	126437	198636	312064	41710	0.067	0.117	0.20
1974	45443	148746	486885	138978	215248	333375	50634	0.079	0.134	0.23
1975	46568	166156	592852	148338	227735	349629	61907	0.097	0.166	0.29
1976	43716	151022	521726	151421	232391	356659	94171	0.111	0.193	0.34
1977	73162	177542	430841	153909	233613	354594	53708	0.071	0.122	0.21
1978	74627	174622	408601	170189	248951	364163	48816	0.061	0.100	0.164
1979	59737	134091	300989	191742	268704	376557	77208	0.084	0.132	0.21
1980	52006	114571	252404	205541	278363	376986	89174	0.106	0.157	0.23
1981	57631	126053	275708	212592	279099	366413	101975	0.129	0.181	0.25
1982	35028	76899	168823	210337	268936	343860	130401	0.169	0.23	0.31
1983	30082	65840	144104	197147	248300	312727	106443	0.157	0.21	0.28
1984	32987	70068	148833	187119	232443	288747	96033	0.148	0.193	0.25
1985	39649	81242	166468	176141	216810	266869	78622	0.130	0.165	0.21
1986	80721	161678	323827	168955	206039	251263	77062	0.135	0.170	0.21
1987	70403	135214	259686	162784	196934	238249	76552	0.143	0.178	0.22
1988	39615	73998	138224	149470	180308	217507	89456	0.182	0.23	0.29
1989	27245	49703	90674	135846	163131	195897	56678	0.144	0.178	0.22
1990	38306	66737	116271	128961	152771	180976	66246	0.177	0.22	0.26
1991	117871	193876	318890	113649	133540	156912	56072	0.172	0.21	0.25
1992	52981	86754	142056	104303	121779	142182	55671	0.180	0.22	0.26
1993	31973	51404	82644	96885	112446	130507	50249	0.171	0.21	0.25
1994	35119	55127	86534	93523	108362	125556	42386	0.150	0.179	0.21
1995	38133	59203	91917	98126	113496	131273	44160	0.133	0.156	0.183
1996	91194	138425	210117	104199	120206	138671	35933	0.115	0.135	0.159
1997	55545	83765	126322	108711	125125	144016	39218	0.115	0.134	0.158
1998	24370	36918	55926	121015	139439	160670	39445	0.114	0.134	0.158
1999	28624	43148	65041	129722	149851	173104	41267	0.111	0.130	0.153
2000	74785	112038	167847	126391	145838	168277	42773	0.114	0.134	0.158
2001	29906	45082	67958	129126	149032	172007	36791	0.087	0.103	0.121
2002	143784	218669	332557	128627	147977	170237	50700	0.121	0.142	0.167
2003	105137	159271	241278	132358	152840	176492	38252	0.104	0.123	0.145
2004	136557	204910	307477	143521	165670	191237	32933	0.082	0.097	0.116
2005	80642	120348	179605	149565	172804	199653	45192	0.101	0.120	0.142
2006	118136	175351	260277	157858	182814	211715	42211	0.088	0.104	0.123

Year	Recruitment (age 6)			Spawning-stock biomass (SSB)			Total catch	Fishing mortality (ages 9–19)		
	Low	R	High	Low	SSB	High		Low	F	High
2007	145298	216633	322990	169669	196609	227826	39136	0.079	0.094	0.111
2008	86117	128329	191231	181076	209788	243053	46187	0.091	0.108	0.129
2009	99813	149106	222741	187658	217780	252738	39128	0.075	0.090	0.107
2010	148314	224403	339526	200340	232319	269403	38425	0.066	0.079	0.094
2011	107994	165511	253662	222117	257447	298395	45272	0.066	0.079	0.094
2012	67271	101167	152142	247133	285964	330896	45553	0.062	0.074	0.088
2013	141998	212094	316794	270485	312895	361956	53186	0.069	0.082	0.098
2014	59329	90165	137027	279863	323377	373655	50683	0.061	0.073	0.087
2015	33944	51668	78644	301016	348357	403144	51602	0.060	0.071	0.084
2016	7493	12101	19543	316521	366341	424003	59657	0.065	0.077	0.092
2017	21405	33264	51695	325022	377037	437375	56044	0.065	0.077	0.092
2018	62205	97859	153948	313785	365685	426169	53147	0.062	0.074	0.088
2019	7425	12365	20590	292396	341785	399517	48529	0.057	0.068	0.081
2020	13248	21626	35301	277043	325723	382958	46097	0.058	0.069	0.083
2021	38005	64394	109106	276210	325544	383690	43318	0.054	0.065	0.078
2022	45759	81487	145110	268359	316784	373947	32375	0.050	0.060	0.072
2023	38494	76441	151796	271662	321692	380935	35114	0.056	0.068	0.082
2024	29730	71346	171214	262932	313370	373484	42187	0.075	0.092	0.113
2025	12569	42905	146457	247046	299416	362888				

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