

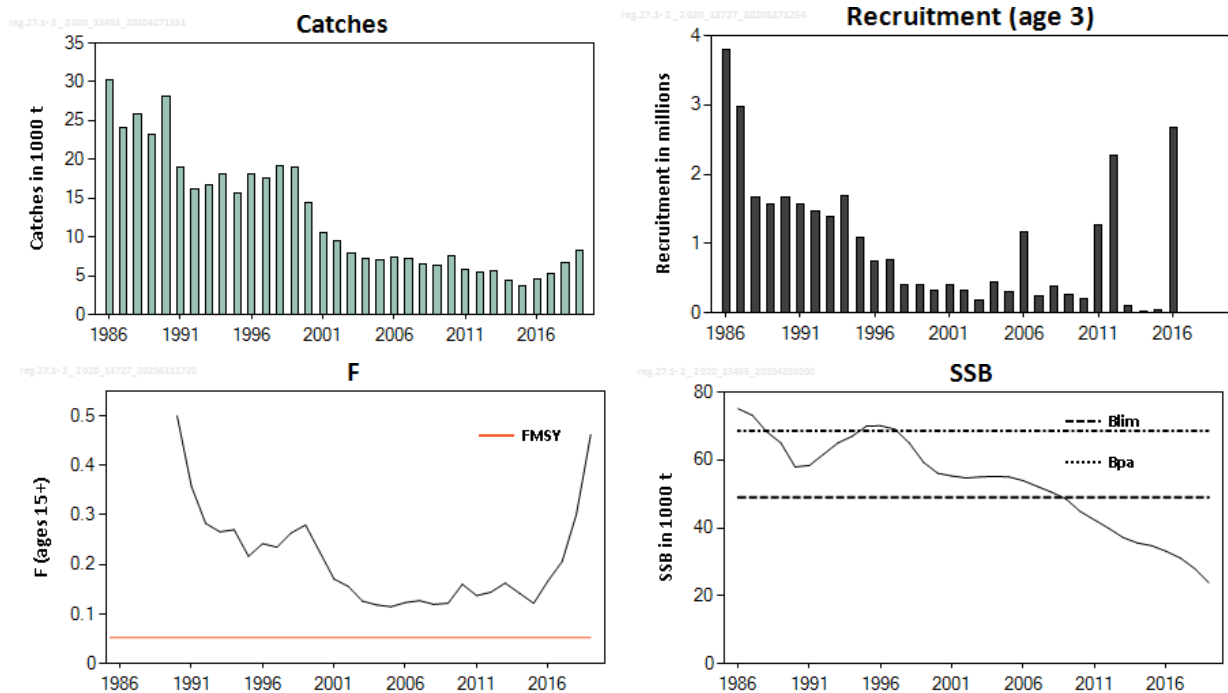
## Golden redfish (*Sebastes norvegicus*) in subareas 1 and 2 (Northeast Arctic)

### ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2021 and 2022.

Note: This advice sheet is abbreviated due to the Covid-19 disruption. The previous advice issued for 2019–2020 is attached as Annex 1.

### Stock development over time



**Figure 1** Golden redfish in subareas 1 and 2. Summary of the stock assessment (weights in thousand tonnes). Recruitment (until 2016 only), fishing mortality, and SSB are shown.

### Stock and exploitation status

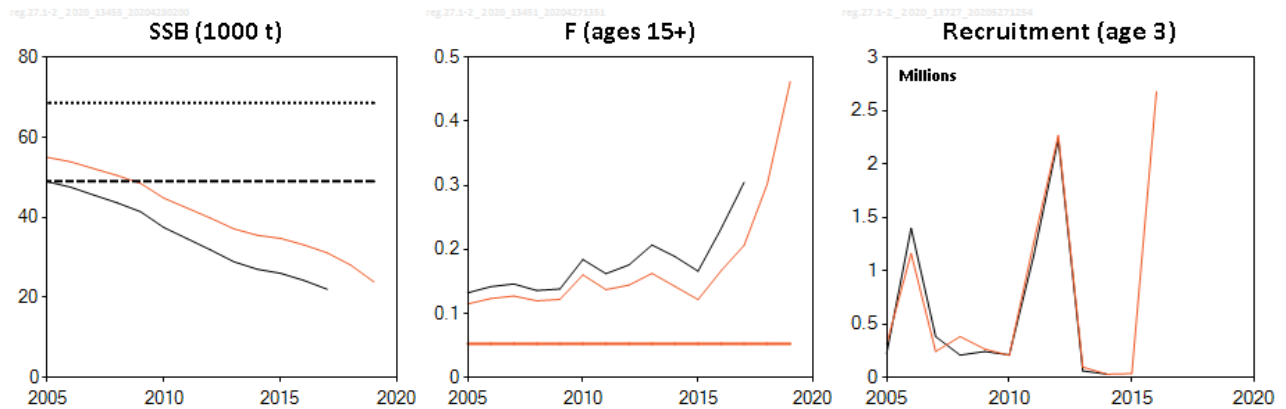
**Table 1** Golden redfish in subareas 1 and 2. State of the stock and the fishery relative to reference points.

	Fishing pressure				Stock size			
	2017	2018	2019		2017	2018	2019	
Maximum sustainable yield	$F_{MSY}$	✘	✘	✘ Above	$MSY B_{trigger}$	?	?	? Undefined
Precautionary approach	$F_{pa}, F_{lim}$	?	?	? Undefined	$B_{pa}, B_{lim}$	✘	✘	✘ Reduced reproductive capacity
Management plan	$F_{MGT}$	—	—	— Not applicable	$B_{MGT}$	—	—	— Not applicable

### Catch scenarios

ICES is not able to identify catch levels that will, with high probability, give an increase in stock size above  $B_{lim}$ . Therefore, the advice is for zero catch. This applies to both commercial and recreational fishing.

**Quality of the assessment**



**Figure 2** Golden redfish in subareas 1 and 2 (Northeast Arctic). Historical assessment results (Recruitment until 2016 only).

**History of the advice, catch, and management**

**Table 2** Golden redfish in subareas 1 and 2. History of ICES advice, the agreed TAC, and the official and ICES catches. Weights are in tonnes.

Year	ICES advice	Predicted catch corresponding to advice	Agreed TAC	Official catches*	ICES catches
1987	Precautionary TAC	-	-	34595	24075
1988	Reduction in F; TAC	15000	-	41494	25908
1989	Status quo F; TAC	24000	-	46746	23234
1990	Status quo F; TAC	23000	-	63142	28072
1991	Precautionary TAC	24000	-	67768	19041
1992	If required, precautionary TAC	25000	-	31775	16185
1993	Precautionary TAC	12000	12000	29465	16651
1994	If required, precautionary TAC	-	-	30841	18120
1995	If required, precautionary TAC	-	-	25900	15616
1996	If required, precautionary TAC	-	-	26118	18043
1997	If required, precautionary TAC	-	-	26109	17511
1998	Management plan required as a prerequisite to continued fishing	-	-	33200	19155
1999	Management plan required as a prerequisite to continued fishing	-	-	30195	18986
2000	Management plan required as a prerequisite to continued fishing	-	-	24536	14461
2001	Management plan required as a prerequisite to continued fishing	-	-	28969	10551
2002	Management plan required as a prerequisite to continued fishing	-	-	16504	9511
2003	Management plan required as a prerequisite to continued fishing	-	-	10361	7841
2004	No directed trawl fishery and low bycatch limits	-	-	12802	7309
2005	More stringent protective measures	-	-	15502	7037
2006	More stringent protective measures	-	-	40609	7348
2007	More stringent protective measures	-	-	27525	7306
2008	No directed fishery and low bycatch limits	-	-	19652	6557
2009	No directed fishery and low bycatch limits	-	-	16507	6261
2010	No directed fishery and low bycatch limits	-	-	19426	7502
2011	Same advice as last year	-	-	18756	5794

Year	ICES advice	Predicted catch corresponding to advice	Agreed TAC	Official catches*	ICES catches
2012	Same advice as last year	-	-	16573	5517
2013	No fishery	-	-	15083	5609
2014	No fishery	-	-	23216	4436
2015	No fishery	-	-	29485	3629
2016	No fishery	-	-	40321	4674
2017	Precautionary approach: zero catch advice	0	-	36190	5256
2018	Precautionary approach: zero catch advice	0	-	45395	6656
2019	Precautionary approach: zero catch advice	0	-	54239**	8284**
2020	Precautionary approach: zero catch advice	0	-		
2021	Precautionary approach: zero catch advice	0			
2022	Precautionary approach: zero catch advice	0			

\* Includes both *Sebastes mentella* and *S. norvegicus*. The working group has allocated redfish catches by species.

\*\* Provisional figures.

**Table 3** Golden redfish in subareas 1 and 2. Catches inside and outside the NEAFC Regulatory Area (RA) as estimated by ICES.

Year	Inside the NEAFC RA (tonnes)	Outside the NEAFC RA (tonnes)	Total catches (tonnes)	Proportion inside the NEAFC RA (%)
2017	5	5251	5256	0.1%
2018	0	6656	6656	0%
2019	0	8284	8284	0%

### Summary of the assessment

**Table 4** Golden redfish in subareas 1 and 2. Assessment summary. Weights are in tonnes.

Year	Recruitment age 3 thousands	SSB	Landings	F ages 15+
1986	3788	75094	30203	
1987	2967	73163	24077	
1988	1665	68341	25908	
1989	1572	64984	23234	
1990	1662	57942	28072	0.50
1991	1576	58398	19041	0.36
1992	1464	61699	16185	0.28
1993	1393	65025	16651	0.27
1994	1691	66985	18120	0.27
1995	1088	69984	15616	0.22
1996	749	70054	18043	0.24
1997	758	69034	17511	0.24
1998	405	65002	19155	0.26
1999	412	59333	18986	0.28
2000	314	56077	14461	0.23
2001	398	55276	10551	0.171
2002	317	54703	9511	0.156
2003	193	54993	7841	0.126
2004	437	55178	7309	0.118
2005	312	55007	7037	0.115
2006	1162	53900	7348	0.123
2007	243	52164	7306	0.127
2008	382	50484	6557	0.120
2009	266	48483	6261	0.122
2010	206	44812	7502	0.160
2011	1266	42317	5794	0.137

Year	Recruitment age 3 thousands	SSB	Landings	F ages 15+
2012	2268	39832	5517	0.144
2013	97	37148	5609	0.163
2014	30	35544	4436	0.142
2015	36	34754	3629	0.122
2016	2678	33131	4675	0.167
2017		31134	5256	0.21
2018		28107	6656	0.30
2019		23887	8284	0.46

### Sources and references

ICES. 2020. Arctic Fisheries Working Group (AFWG). ICES Scientific Reports. 2:52. <http://doi.org/10.17895/ices.pub.6050>

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