

Haddock (*Melanogrammus aeglefinus*) in Division 5.b (Faroes grounds)

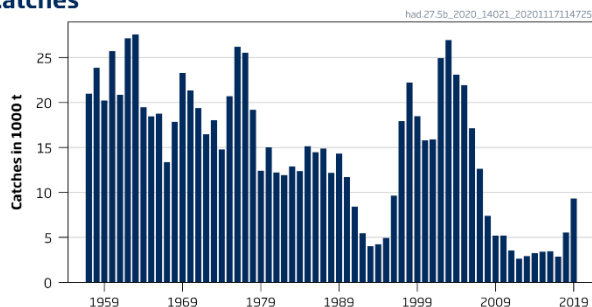
ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2021 should be no more than 11 440 tonnes. ICES is not in a position to advise on the corresponding level of fishing effort.

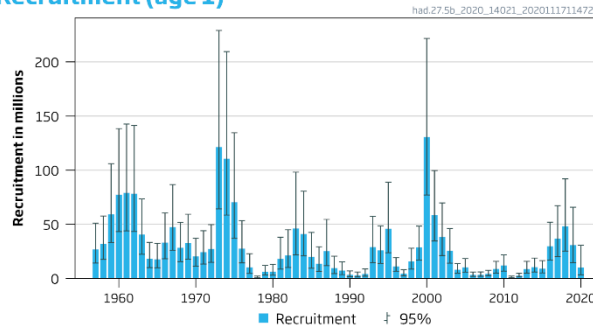
Note: This advice sheet is abbreviated due to the COVID-19 disruption. The previous advice issued for 2020 is attached as Annex 1.

Stock development over time

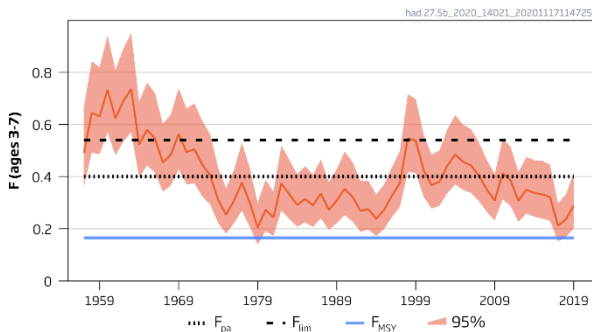
Catches



Recruitment (age 1)



F



SSB

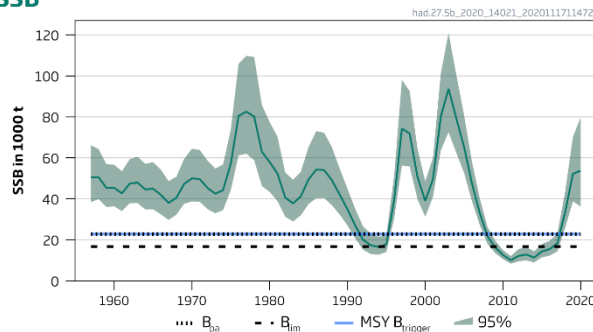


Figure 1 Haddock in Division 5.b (Faroes grounds). Summary of the stock assessment with 95% confidence intervals. Catches, recruitment (R), fishing mortality (F), and spawning-stock biomass (SSB).

Stock and exploitation status

Table 1 Haddock in Division 5.b (Faroes grounds). State of the stock and fishery relative to reference points.

	Fishing pressure			Stock size				
	2017	2018	2019	2018	2019	2020		
Maximum sustainable yield	F_{MSY}	✘	✘	✘	Above			
Precautionary approach	F_{pa}, F_{lim}	✔	✔	✔	Harvested sustainably			
Management plan	F_{MGT}	—	—	—	Not applicable			
				$MSY B_{trigger}$	✔	✔	✔	Above trigger
				B_{pa}, B_{lim}	✔	✔	✔	Full reproductive capacity
				B_{MGT}	—	—	—	Not applicable

Catch scenarios

Table 2 Haddock in Division 5.b (Faroes grounds). Assumptions made for the interim year and in the forecast. All weights are in tonnes.

Variable	Value	Notes
F _{ages 3-7} (2020)	0.162	Based on catch estimate of 7146 tonnes in 2020.
SSB ₂₀₂₁	90392	Based on F = 0.162; in tonnes.
R _{age 1} (2021)	10170	Median of resampled estimates from 2000–2019; in thousands.
Landings (2020)	7146	Catch estimate for 2020 based on catch statistics to the end of September adjusted for the entire year; in tonnes.
Discards (2020)	0	Discarding is considered negligible; in tonnes.

Table 3 Haddock in Division 5.b (Faroes grounds). Annual catch scenarios. All weights are in tonnes.

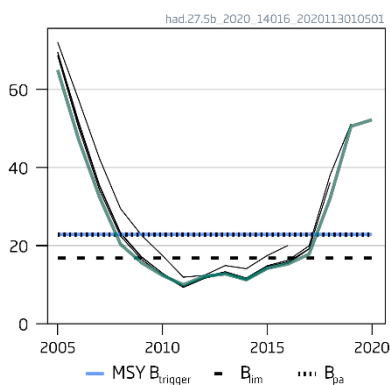
Basis	Total catch (2021)	F _{total} (2021)	SSB ₂₀₂₂	% SSB change *	% Advice change **
ICES advice basis					
MSY approach: F _{MSY}	11440	0.165	94854	+5	-1
Other scenarios					
F = 0	0	0	110764	+23	-100
F = F ₂₀₂₀	11250	0.162	94950	+5	-3
F = F _{pa}	24277	0.40	79692	-12	+109
F = F _{lim}	30378	0.54	72440	-20	+162

* SSB₂₀₂₂ relative to SSB₂₀₂₁ (90 392 tonnes).

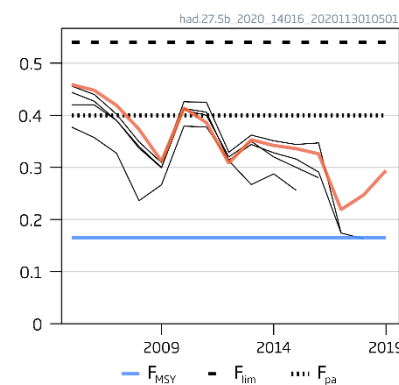
** The advice value for 2021 relative to the advice value for 2020 as issued in 2019 (11 590 tonnes).

Quality of the assessment

SSB (1000 t)



F (ages 3-7)



Rec (age 1; Millions)

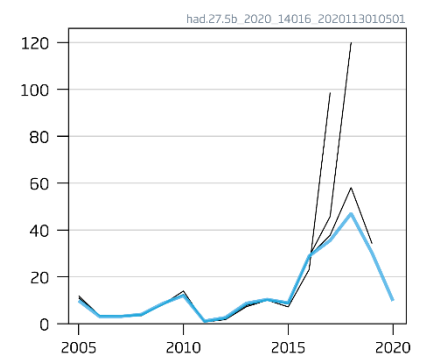


Figure 2 Haddock in Division 5.b (Faroes grounds). Historical assessment results. Results of the last five assessments are plotted, with the solid coloured line representing the current assessment.

History of the advice, catch, and management

Table 4 Haddock in Division 5.b (Faroes grounds). ICES advice and catch. All weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Agreed TAC *	ICES catch
1987	No increase in F	17000		14882
1988	No increase in F	18000		12178
1989	No increase in F	11000		14325
1990	No increase in F	11000		11726
1991	TAC	11000		8429
1992	TAC	13000–15000		5476
1993	Reduction in F	8000		4026
1994	No fishing	0	6200	4252
1995	No fishing	0	6200	4948
1996	TAC	8300	12600	9642
1997	F = F(95)	9300		17924
1998	F = F(96)	16000		22210
1999	F < proposed F_{pa} (0.25)	9000		18482
2000	F < proposed F_{pa} (0.25)	22000		15799
2001	F < proposed F_{pa} (0.25)	20000		15891
2002	No fishing	0		24929
2003	F < proposed F_{pa} (0.25)	12000		26942
2004	F < proposed F_{pa} (0.25)	21000		23100
2005	F < proposed F_{pa} (0.25)	19000		21944
2006	F < proposed F_{pa} (0.25)	18000		17154
2007	F < 0.20	16000		12630
2008	F_{pa}	14000		7388
2009	No fishing and recovery plan	0		5196
2010	No fishing and recovery plan	0		5202
2011	No direct fishing; minimize bycatch, implement recovery plan	0		3546
2012	No direct fishing; minimize bycatch, implement recovery plan	0		2634
2013	No direct fishing; minimize bycatch, implement recovery plan	0		2924
2014	No direct fishing; minimize bycatch, implement recovery plan	0		3252
2015	No direct fishing; minimize bycatch, implement recovery plan	0		3421
2016	No direct fishing; minimize bycatch, implement recovery plan	0		3470
2017	MSY approach (F ≤ 0.17)	≤ 3500		2863
2018	MSY approach (F ≤ 0.165)	≤ 4570		5549
2019	MSY approach	≤ 7366		9334 **
2020	MSY approach	≤ 11590		
2021	MSY approach	≤ 11440		

* Not applicable since 1997.

** Preliminary.

Summary of the assessment

Table 5 Haddock in Division 5.b (Faroes grounds). Assessment summary.

Year	Recruitment			SSB			Catch	F		
	Age 1	97.5 percentile	2.5 percentile	SSB	97.5 percentile	2.5 percentile		Mean F _{ages 3-7}	97.5 percentile	2.5 percentile
	Thousands			Tonnes						
1957	26820	51017	14099	50418	66163	38420	20995	0.49	0.67	0.36
1958	31703	57612	17446	50614	64275	39857	23871	0.64	0.84	0.49
1959	59229	105893	33129	45313	56972	36039	20239	0.63	0.82	0.49
1960	77343	138341	43241	45384	56662	36351	25727	0.73	0.94	0.57
1961	79034	142556	43817	42668	53477	34044	20831	0.62	0.81	0.48
1962	78269	141355	43338	47440	59375	37905	27151	0.69	0.89	0.53
1963	40403	73345	22256	47955	60573	37965	27571	0.74	0.95	0.57
1964	18221	33315	9966	44624	57081	34886	19490	0.52	0.69	0.40
1965	17660	32356	9639	44963	57909	34911	18479	0.58	0.76	0.44
1966	33079	60506	18084	41982	54265	32479	18766	0.55	0.72	0.42
1967	47321	86617	25853	38015	48649	29705	13381	0.45	0.60	0.34
1968	28342	51776	15514	40519	50840	32293	17852	0.48	0.64	0.37
1969	32483	59217	17819	47315	59551	37593	23272	0.56	0.74	0.43
1970	20273	37055	11092	49985	64466	38757	21361	0.49	0.66	0.37
1971	24127	44056	13213	49672	63849	38643	19393	0.51	0.68	0.37
1972	27140	49693	14822	45366	58757	35027	16485	0.45	0.61	0.32
1973	121306	229078	64236	42510	54809	32971	18035	0.41	0.56	0.29
1974	110652	209584	58420	44251	56769	34494	14773	0.31	0.43	0.22
1975	70384	134511	36829	57234	73924	44312	20715	0.25	0.36	0.181
1976	27558	53426	14215	80503	105922	61184	26211	0.31	0.43	0.22
1977	10193	22733	4570	82523	109790	62028	25555	0.38	0.53	0.27
1978	957	2170	422	80178	109241	58847	19200	0.30	0.43	0.21
1979	6091	11981	3096	62983	85784	46243	12424	0.21	0.30	0.140
1980	6189	13058	2934	57950	77448	43361	15016	0.27	0.39	0.190
1981	18038	38076	8545	52313	70325	38914	12233	0.24	0.34	0.173
1982	21259	44959	10052	40659	52890	31256	11937	0.37	0.52	0.27
1983	46165	98130	21718	37790	49320	28955	12894	0.33	0.47	0.24
1984	41009	80526	20884	41236	53171	31981	12378	0.29	0.41	0.21
1985	19889	42397	9330	49483	65354	37467	15143	0.31	0.44	0.22
1986	13608	29112	6361	54297	73062	40352	14477	0.29	0.41	0.21
1987	25284	54471	11736	54040	72263	40412	14882	0.34	0.47	0.24
1988	9518	20448	4430	49075	65248	36911	12178	0.27	0.38	0.195
1989	7185	15294	3376	42115	54830	32349	14325	0.31	0.43	0.22
1990	3259	6908	1538	34870	44978	27034	11726	0.35	0.50	0.25
1991	2767	5846	1310	26963	35138	20690	8429	0.32	0.46	0.23
1992	4091	8697	1924	20106	26584	15206	5476	0.27	0.38	0.188
1993	28915	57344	14580	17332	22960	13083	4026	0.28	0.39	0.196
1994	25899	48501	13830	16566	21528	12748	4252	0.24	0.33	0.172
1995	45828	88783	23655	17756	22376	14090	4948	0.27	0.37	0.199
1996	11088	19129	6428	39355	51068	30328	9642	0.33	0.44	0.25
1997	4345	7998	2361	74261	98088	56222	17924	0.38	0.50	0.28
1998	15483	27871	8601	71880	92562	55820	22210	0.55	0.72	0.42
1999	28580	48262	16924	50779	64682	39865	18482	0.54	0.70	0.41
2000	130661	221664	77020	38998	48587	31300	15799	0.43	0.56	0.32
2001	58546	99582	34421	49607	60037	40988	15891	0.37	0.49	0.28
2002	38312	69746	21045	80146	101095	63539	24929	0.38	0.50	0.29
2003	25407	46022	14027	93699	120944	72591	26942	0.44	0.58	0.34
2004	8036	13810	4676	79205	100560	62385	23100	0.49	0.64	0.37
2005	10170	18324	5644	65202	80769	52635	21944	0.46	0.60	0.35
2006	3201	5778	1773	47723	58420	38985	17154	0.44	0.58	0.34
2007	3282	5912	1822	33274	40505	27335	12631	0.40	0.53	0.31
2008	4222	7395	2410	21829	26345	18087	7393	0.35	0.46	0.26

Year	Recruitment			SSB			Catch	F		
	Age 1	97.5 percentile	2.5 percentile	SSB	97.5 percentile	2.5 percentile		Mean F _{ages 3-7}	97.5 percentile	2.5 percentile
	Thousands			Tonnes						
2009	8709	15685	4835	16285	19608	13526	5197	0.31	0.41	0.23
2010	11986	21789	6594	12614	14995	10610	5203	0.41	0.55	0.31
2011	1117	2095	596	10054	12085	8364	3546	0.39	0.52	0.29
2012	2594	4732	1422	12173	15515	9551	2634	0.31	0.42	0.23
2013	8665	15681	4788	12839	16544	9964	2924	0.35	0.48	0.26
2014	10385	18728	5758	11364	14395	8972	3252	0.34	0.46	0.25
2015	9007	16371	4956	14346	17971	11453	3421	0.33	0.46	0.24
2016	29690	51903	16983	15493	19529	12291	3470	0.32	0.45	0.23
2017	36812	67126	20187	18282	23186	14416	2863	0.21	0.30	0.151
2018	48034	91863	25116	33685	43695	25968	5549	0.24	0.33	0.168
2019	30788	65741	14418	52245	70306	38824	9334 *	0.29	0.41	0.20
2020	9946	30514	3242	53760	79871	36185				

* Preliminary.

Sources and references

ICES. 2020. North-Western Working Group (NWWG). ICES Scientific Reports, 2:51. 431 pp. <http://doi.org/10.17895/ices.pub.6051>.

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