

4.3.2 Cod (*Gadus morhua*) in Subdivision 5.b.2 (Faroe Bank)

ICES stock advice

ICES advises that when the precautionary approach is applied, there should be zero catch in each of the years 2017, 2018, and 2019.

Stock development over time

Survey indices indicate that the stock is severely depleted. Exploitation ratios (proxies for fishing mortality) have remained at very low levels in recent years, and are considered to be below possible reference points.

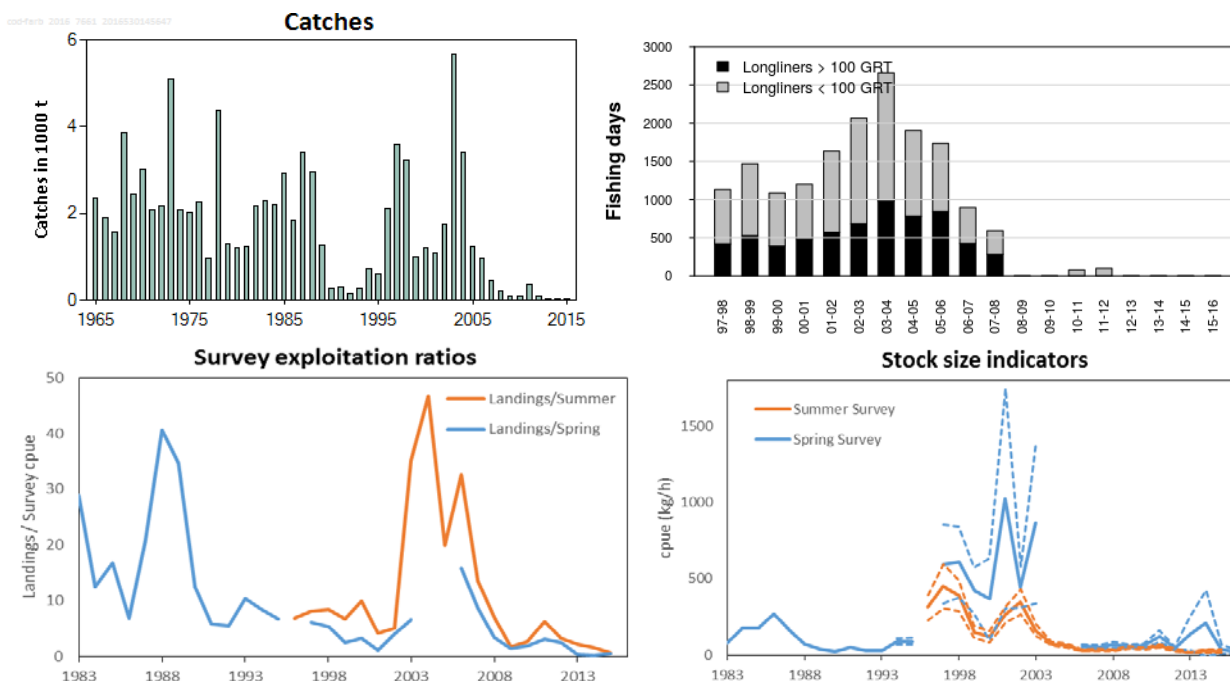


Figure 4.3.2.1 Cod in Subdivision 5.b.2 (Faroe Bank). Top left: ICES catches 1965–2015. Since 1992 catches on the Faroe Bank are considered to be taken only by Faroese and Norwegian vessels. Top right: Allocated fishing days 1997–2016 for longline gear types on the Faroe Bank. Bottom left: exploitation ratio (ratio of landings to survey cpue interpreted as an index of exploitation rate). Bottom right: Catch per unit of effort in the spring groundfish survey (1983–2016; blue line) and summer survey (1996–2015; orange line). Dashed lines show one standard error in the estimation of indexes.

Stock and exploitation status

Table 4.3.2.1 Cod in Subdivision 5.b.2 (Faroe Bank). State of the stock and fishery relative to reference points.

		Fishing pressure				Stock size				
		2013	2014	2015		2014		2015	2016	
Maximum sustainable yield	F _{MSY}	?	?	?	Undefined	MSY	?	?	?	Undefined
Precautionary approach	F _{pa} , F _{lim}	?	?	?	Undefined	B _{trigger} B _{pa} , B _{lim}	?	?	?	Undefined
Management plan	F _{MGT}	-	-	-	Not applicable	SSB _{MGT} τ	-	-	-	Not applicable
Qualitative evaluation		✓	✓	✓	Below possible reference points		✗	✗	✗	Below possible reference points

Catch options

New data on landings and indices from the annual Faroese surveys do not change the perception of the stock. ICES advises that because of the very low stock size, there should be zero catch from the stock. Given the current severely depleted status of the stock, it is likely to take several years for any possible recovery. Therefore, the advice is given for the next three years (2017–2019). Reopening the fishery should not be considered until both survey indices indicate a biomass at or above the average of the period 1996–2002.

Basis of the advice

Table 4.3.2.2 Cod in Subdivision 5.b.2 (Faroe Bank). The basis of the advice.

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

Quality of the assessment

The assessment is based on catch rates in two research surveys, and on exploitation ratios derived from landings data and survey indices. The uncertainty in the spring survey indices is large, while the summer survey has lower uncertainty. The recent depletion of the stock is confirmed by both surveys.

The landings estimates for this stock are uncertain as the vessels since 1996 have been allowed to fish both on the Faroe Plateau and on the Faroe Bank during the same trip.

Issues relevant for the advice

If the fishery management agency intends to manage the fisheries of the two stocks (Faroe Plateau cod and Faroe Bank cod) to protect the productive capacity of each individual stock, then it is necessary to identify the catch removed from each stock from all components of the fleet.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 4.3.2.3 Cod in Subdivision 5.b.2 (Faroe Bank). The basis of the assessment.

ICES stock data category	3 (ICES, 2016)
Assessment type	Qualitative based on survey trends.
Input data	Landings and Faroese groundfish bottom trawl surveys (spring and summer)
Discards and bycatch	Considered negligible.
Indicators	None
Other information	None
Working group	North-Western Working Group (NWWG)

Information from stakeholders

There is no information available.

History of the advice, catch, and management

Table 4.3.2.4 Cod in Subdivision 5.b.2 (Faroe Bank). History of ICES advice, the agreed TAC, and landings.

Year	ICES advice	Predicted catch corresponding to advice	Agreed TAC**	Landings*
1987	No assessment	-		3.500
1988	No assessment	-		3.100
1989	Addition to Faroe Plateau TAC	~2.0		1.400
1990	Access limitation may be required	-		0.600
1991	Access limitation may be required			0.400
1992	No fishing	0.3		0.154
1993	TAC	0.5		0.266
1994	TAC	0.5		0.725
1995	Precautionary TAC	0.5		0.601
1996	Precautionary TAC	0.5	1.0	2.106
1997	Effort at present levels	0.7		3.594
1998	Effort at present levels	-		3.239
1999	Effort not to exceed that exerted in 1996–1997	-		1.001
2000	Effort not to exceed that of 1996–1998	-		1.194
2001	Effort not to exceed that of 1996–1999	-		1.080
2002	Effort not to exceed that of 1996–2000	-		1.756
2003	Effort not to exceed that of 1996–2001	-		5.676
2004	Effort not to exceed that of 1996–2002	-		3.411
2005	Effort not to exceed that of 1996–2002	-		1.232
2006	Effort not to exceed that of 1996–2002	-		0.955
2007	Effort not to exceed that of 1996–2002	-		0.450
2008	No fishing	0		0.218
2009	No fishing	0		0.080
2010	Same advice as last year	0		0.105
2011	Same advice as last year	0		0.370
2012	Same advice as last year	0		0.108
2013	Same advice as last year	0		0.038
2014	Same advice as last year	0		0.038
2015	Same advice as last year	0		0.017
2016	Same advice as last year	0		
2017	Precautionary approach	0		
2018	Precautionary approach	0		
2019	Precautionary approach	0		

Weights in thousand tonnes.

* Prior to 1992 official landings are presented, thereafter ICES estimates (catches on the Faroe Bank are considered to be taken only by Faroese and Norwegian vessels).

** Not applicable since 1997.

History of catch and landings

Table 4.3.2.5 Cod in Subdivision 5.b.2 (Faroe Bank). Catch distribution by fleet in 2015 as estimated by ICES.

Total catch (2015)	Landings	Discards
	100% Jigging	
17 t	17 t	Negligible

Table 4.3.2.6 Cod in Subdivision 5.b.2 (Faroe Bank). Nominal catches (tonnes) by country 1986–2015 as officially reported to ICES. From 1992 catches by the Faroe Islands and Norway are used in the assessment.

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999		
Faroe Islands	1836	3409	2966	1270	289	297	122	264	717	561	2051	3459	3092	1001		
Norway	6	23	94	128	72	38	32	2	8	40	55	135	147	88		
UK (E/W/Ni)	-	-	-	-	2**	1**	74**	186**	56**	43**	126***	61***	27***	-		
UK (Scotland)***	63	47	37	14	205	90	176	118	227	551	382	277	265	51		
Total	1905	3479	3097	1412	568	426	404	570	1008	1195	2614	3932	3531	210		
Used in assessment					289	297	154	266	725	601	2106	3594	3239	1350		
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015*
Faroe Islands		1094	1840	5957	3607	1270	1005	471	231	81	111	393	115	40	40	18
Norway	49	51	25	72	18	37	10	7	1	4	1		0			0
Greenland	-	-	-	-	-	-	-	-	-	-	5		1			
UK (E/W/Ni)***	18	50	42	15	15	24	1									
UK (Scotland)	245***	288***	218***	254***	244***	1129***	278***	53	32	38	54				270	
Total	312	1483	2125	6298	3884	2460	1294	531	264	123	171	393	116	40	302	
Correction of Faroe catches in Subdivision 5.b.2		-65	-109	-353	-214	-75	-60	-28	-14	-5	-7	-23	-7	-2	-2	-1
Used in assessment	1194	1080	1756	5676	3411	1232	955	450	218	80	105	370	108	38	38	17

* Preliminary.

** Included in Subdivision 5.b.1.

*** Reported as Division 5.b.

Summary of the assessment

Table 4.3.2.7 Cod in Subdivision 5.b.2 (Faroe Bank). Catch per unit of effort in the spring groundfish survey and summer survey and exploitation ratios (ratios of landings to survey cpue, interpreted as an index of exploitation rate). When no survey index value was available, cells are left blank.

Year	Spring survey (kg h ⁻¹)	low (-1 × SE)	high (+1 × SE)	Exploitation ratio (Landings/ Spring survey)	Summer survey (kg h ⁻¹)	low (-1 × SE)	high (+1 × SE)	Exploitation ratio (Landings/ Summer survey)
1983	78.99			28.91				
1984	175.21			12.49				
1985	173.47			16.79				
1986	266.09			6.90				
1987	164.04			20.78				
1988	73.11			40.57				
1989	36.55			34.74				
1990	23.24			12.43				
1991	50.97			5.83				
1992	28.43			5.42				
1993	25.76			10.33				
1994	86.74	68.53	104.94	8.36				
1995	90.17	68.70	111.65	6.66				
1996					226.86	310.50	394.14	6.78
1997	593.42	337.49	849.34	6.06	305.29	449.16	593.02	8.00
1998	607.41	375.03	839.79	5.33	285.55	387.07	488.58	8.37
1999	421.00	270.88	571.11	2.38	111.99	149.54	187.10	6.69
2000	364.51	94.02	634.99	3.28	81.21	119.90	158.60	9.96
2001	1022.31	302.86	1741.76	1.06	210.80	262.59	314.38	4.11
2002	443.88	311.16	576.60	3.96	263.33	347.16	430.98	5.06
2003	867.09	338.03	1396.15	6.55	124.37	161.77	199.17	35.09
2004					61.22	73.04	84.86	46.70
2005					47.97	61.88	75.79	19.91
2006	60.51	51.19	69.82	15.78	24.57	29.27	33.97	32.62
2007	52.06	41.32	62.80	8.64	27.21	33.31	39.41	13.51
2008	64.02	44.76	83.28	3.41	26.28	31.17	36.07	6.99
2009	55.50	43.52	67.47	1.44	39.58	49.27	58.95	1.62
2010	58.08	39.33	76.82	1.81	34.67	41.64	48.61	2.52
2011	122.40	83.15	161.65	3.02	48.01	58.54	69.08	6.32
2012	44.54	35.49	53.59	2.42	26.26	34.25	42.24	3.15
2013	138.98	30.92	247.04	0.27	13.99	17.37	20.75	2.19
2014	209.20	-7.17	425.57	0.18	13.82	25.75	37.68	1.48
2015	37.19	6.66	67.71	0.46	14.41	24.82	35.23	0.68
2016	19.09	8.67	29.51					

Table 4.3.2.8 Cod in Subdivision 5.b.2 (Faroe Bank). Allocated fishing days 1997–2016 for longline gear types on the Faroe Bank.

Season	Large longliners (≥100 GRT)	Small longliners (< 100 GRT)
1997/1998	418	714
1998/1999	528	939
1999/2000	392	694
2000/2001	484	717
2001/2002	570	1065
2002/2003	684	1382
2003/2004	981	1678
2004/2005	781	1123
2005/2006	844	892
2006/2007	423	473
2007/2008	281	310
2008/2009	0	0
2009/2010	0	0
2010/2011	0	78
2011/2012	0	100
2012/2013	0	0
2013/2014	0	0
2014/2015	0	0
2015/2016	0	0

Sources and references

ICES. 2016a. General context of ICES advice. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2016b. Report of the North-Western Working Group (NWWG), 27 April–4 May, 2016, ICES Headquarters, Copenhagen. ICES CM 2016/ACOM:08.