

Cod (*Gadus morhua*) in Division 7.a (Irish Sea)

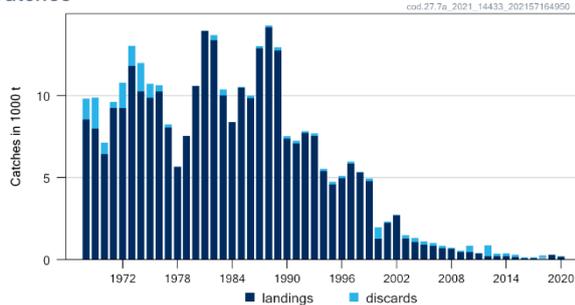
ICES advice on fishing opportunities

ICES advises that when the precautionary approach is applied, catches in 2022 should be no more than 74 tonnes.

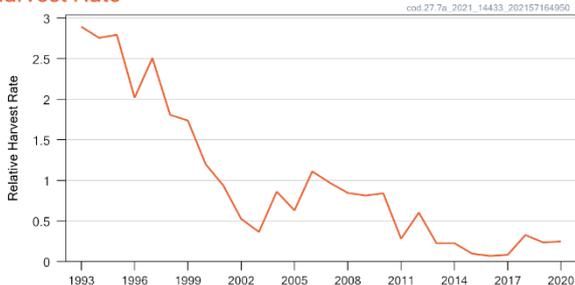
Stock development over time

ICES cannot assess the stock and exploitation status relative to the maximum sustainable yield (MSY) and precautionary approach (PA) reference points because the reference points are undefined. However, fishing pressure is considered to be below possible reference points.

Catches



Harvest Rate



Biomass index

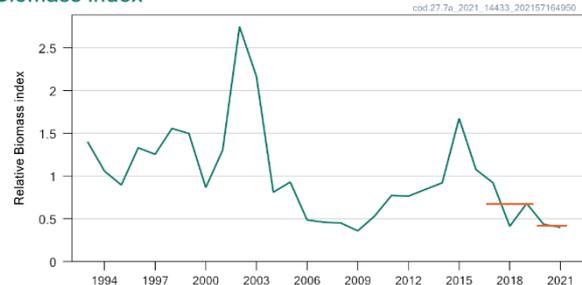


Figure 1 Cod in Division 7.a. Summary of the stock. The biomass index (NIGFS-WIBTS-Q1) is used as an indicator of stock size. The orange horizontal lines indicate the average of the biomass index for 2017 to 2019 and 2020 to 2021. Harvest rate is calculated as catches divided by survey index.

Catch scenarios

ICES framework for category 3 stocks was applied (ICES, 2012). The Northern Ireland Groundfish quarter 1 WIBTS Survey (NIGFS-WIBTS-Q1) was used as an index of stock development. The advice is based on the ratio of the mean of the last two index values (Index A) and the mean of the three preceding values (Index B), multiplied by the recent advised catches (2021). The index is estimated to have decreased by more than 20% and thus the uncertainty cap was applied. The precautionary buffer was applied in 2019 and its application has, therefore, not been considered again. The average discard rate (2016–2020) was 23% of total catch.

Table 1 Cod in Division 7.a. The basis for catch scenarios.*

Index A (2020, 2021)		0.42
Index B (2017, 2018, 2019)		0.67
Index ratio (A/B)		0.62
Uncertainty cap	Applied	0.8
Advised catch for 2021		93 tonnes
Precautionary buffer	Not applied	-
Catch advice **		74 tonnes
Discard rate (2016–2020)		0.23
Projected landings corresponding to advice		57 tonnes
% change in advice ***		-20

* The figures in the table are rounded. Calculations were done with unrounded inputs, and computed values may not match exactly when calculated using the rounded figures in the table.

** [Advised catch for 2021] × [uncertainty Cap].

*** Advice for 2022 relative to the advice for 2021.

The advised catch for 2022 is lower than the 2021 advice because of the decrease in the index ratio.

Basis of the advice

Table 2 Cod in Division 7.a. The basis of the advice.

Advice basis	Precautionary approach
Management plan	ICES is aware of the multiannual management plan (MAP) which has been adopted by the EU for this stock (EU, 2019) and which ICES considers to be precautionary. There is no agreed shared management plan with the UK for this stock, and ICES provides advice according to ICES precautionary approach.

Quality of the assessment

This advice is based on the biomass of the NIGFS-WIBTS-Q1, including 2021 as an indicator of stock size under a category 3 approach. This survey index demonstrates adequate year class tracking and is broadly consistent with the composition of the catches.

Issues relevant for the advice

The advice is for Division 7.a, excluding the rectangles 33E2 and 33E3 in the Irish Sea.

Landings have been adjusted since 2003 to exclude those taken from the southern rectangles (33E2 and 33E3) in the Irish Sea; these landings are not believed to be part of this stock (Table 6) but rather of the stock in divisions 7.e–k (western English Channel and southern Celtic Seas). The advice thus excludes these two southern rectangles for cod in Division 7.a but includes them in the assessment and advice for cod in divisions 7.e–k. This should be considered when setting TACs for the two management areas for cod in both 7.a and 7.e–k. This amounts to an average of 26.5% of total Irish Sea landings being re-allocated over the past five years and accounts for 3% of official landings in divisions 7.e–k over the past five years.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 3 Cod in Division 7.a. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2021a)
Assessment type	Survey trends (ICES, 2021b)
Input data	Northern Ireland Groundfish Survey quarter 1 (NIGFS-WIBTS-Q1 [G7144]) survey biomass index (ages 1–4)
Discards and bycatch	Discard information available since 2007, prior to 2007 estimated through raising procedures (ICES, 2017).
Indicators	None
Other information	This stock was benchmarked in 2017 (ICES, 2017) and classified as category 3 in 2019.
Working group	Working Group for the Celtic Seas Ecoregion (WGCSE)

History of the advice, catch, and management

Table 4 Cod in Division 7.a. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice, with single-stock exploitation boundaries since 2004	Catch corresponding to advice	Agreed TAC	Official landings	ICES landings ***	ICES discards
1987	No increase in F; interaction with <i>Nephrops</i>	10300	15000	13200	12900	
1988	No increase in F; interaction with <i>Nephrops</i>	10100	15000	15800	14200	
1989	No increase in F	13400	15000	11300	12800	
1990	F at F_{med} ; TAC	15300	15300	9900	7400	
1991	Stop SSB decline; TAC	6000	10000	7000	7100**	
1992	20% of F(90) ~ 10 000 tonnes	10000	10000	7400	7700**	
1993	F_{med} ~ 10 200 tonnes	10200	11000	5900	7600**	
1994	60% reduction in F	3700	6200	4500	5400**	
1995	50% reduction in F	3900	5800	4500	4600**	
1996	30% reduction in F	5400	6200	5303	4964**	
1997	30% reduction in F	5900	6200	4441	5859**	
1998	No increase in F	6200	7100	4962	5318**	
1999	Reduce F below F_{pa}	4900	5500	2875	4784**	
2000	Lowest possible F	0	2100	1417	1274	
2001	Lowest possible F	0	2100	2026	2252	
2002	Establish recovery plan	-	3200	2715	2695	
2003	Closure of all fisheries for cod	-	1950	1477	1285	
2004	Zero catch	0	2150	1179	1072	
2005	Zero catch	0	2150	967	910	
2006	Zero catch	0	1828	948	840	
2007	Zero catch	0	1462	1117	702	148
2008	Zero catch	0	1199	1224	661	62
2009	Zero catch	0	899	765	468	60
2010	Zero catch	0	674	594	464	377
2011	Zero catch	0	506	485	368	43
2012	Zero catch	0	380	326	198	658
2013	No directed fisheries, minimize bycatch and discards	0	285	281	206	118
2014	No directed fisheries, minimize bycatch and discards	0	228	236	213	149

Year	ICES advice, with single-stock exploitation boundaries since 2004	Catch corresponding to advice	Agreed TAC	Official landings	ICES landings ***	ICES discards
2015	No directed fisheries, minimize bycatch and discards	0	182	199	161	224
2016	No directed fisheries, minimize bycatch and discards	0	146	122	82	60
2017	MSY approach	0	146	103	84	59
2018	MSY approach	≤ 1073	695	235	215	42
2019	MSY approach	≤ 807	807	302*	295	7
2020	Precautionary approach	≤ 116	257	252*	181	25
2021	Precautionary approach	≤ 93	206			
2022	Precautionary approach	≤ 74				

* Preliminary.

** Includes sample-based estimates of landings into three ports.

*** Excludes landings reported from rectangles 33E2 and 33E3 since 2004.

History of the catch and landings

Table 5 Cod in Division 7.a. Catch distribution by fleet in 2020 as estimated by ICES.

Catch	Landings				
	Otter trawls		Mid-water trawl	Beam trawls	Other gear types
206 tonnes	<i>Nephrops</i> directed 25%	Demersal fish directed 40%	17%	18%	< 1%
	181 tonnes				
	Discards				
	Otter trawls		Mid-water trawl	Beam trawls	Other gear types
	<i>Nephrops</i> directed 54%	Demersal fish directed <1%	< 1%	45%	< 1%
	25 tonnes				

Table 6 Cod in Division 7.a. History of commercial catches; official landings by country and ICES estimates of total landings and discards. All weights are in tonnes, minor differences in total value are due to rounding.

Year	Belgium	France	Ireland	Netherlands	Spain	UK (England Wales, & NI)	UK (Isle of Man)	UK (Scotland)	Total	Landings in rectangles 33E2 & 33E3 ***	Landings	Discards
1996	142	148	2476	25	-	2359	27	126	5303		4964**	
1997	183	268	1492	29	-	2370	19	80	4441		5859**	
1998	316	269	1739	20	-	2517	34	67	4962		5318**	
1999	150	n/a	966	5	-	1665	9	80	2875		4784**	
2000	60	53	455	1	-	799	11	38	1417		1274	
2001	283	74	751	-	-	885	1	32	2026		2252	
2002	318	116	1111	-	-	1134	7	29	2715		2695	
2003	183	151	594	-	14	505	7	23	1477		1285	
2004	104	29	380	-	-	646	5	15	1179	108	1072	
2005	115	35	220	-	-	594	n/a	3	967	54	910	
2006	60	18**	275	-	-	589	n/a	6	948	103	840	
2007	67	17**	608	-	-	423	n/a	2	1117	527	702	148
2008	26	3	618**	-	-	543	22	12	1224	558	661	62
2009	19	12	323**	-	-	387	12	12	765	193	468	60
2010	21	1	289	-	-	282	1	-	594	143	464	377
2011	36	3	275	-	-	169	1	-	485	147	368	43
2012	23	1	193	-	-	109	< 1	-	326	85	198	658
2013	13	< 1	160	-	-	107	< 1	-	281	76	206	118
2014	9	< 1	148	-	-	79	< 1	-	236	24	213	149
2015	12	< 1	137	-	-	50	< 1	-	199	39	161	224
2016	3	< 1	84	-	-	35	< 1	-	122	40	82	60
2017	5	< 1	57	-	-	41	< 1	< 1	103	19	84	59
2018	2	< 1	105	-	-	128	< 1	< 1	235	20	215	42
2019*	10	< 1	129	-	-	195	< 1	< 1	334	37	295	7
2020*	10	0	76	-	-	95	< 1	< 1	252	71	181	25

* Preliminary official landings.

** Includes sample-based estimates of landings into ports.

*** Landings in the southern part of Division 7.a (rectangles 33E2 and 33E3) are not included in the assessment and are considered to be part of the cod stock in divisions 7.e–k.

Summary of the assessment

Table 7 Cod in Division 7.a. Assessment summary. Weights are in tonnes.

Year	Relative biomass index	Landings	Discards*	Relative harvest rate
1968		8541	1285	
1969		7991	1898	
1970		6426	708	
1971		9246	363	
1972		9234	1546	
1973		11819	1222	
1974		10251	1749	
1975		9863	857	
1976		10247	381	
1977		8054	201	
1978		5662	0	
1979		7548	0	
1980		10599	0	
1981		13958	0	
1982		13381	313	
1983		10015	372	
1984		8383	2	
1985		10483	61	
1986		9852	154	
1987		12894	128	
1988		14168	109	
1989		12751	202	
1990		7379	159	
1991		7095	163	
1992		7735	98	
1993	1.40	7555	155	2.9
1994	1.06	5402	142	2.8
1995	0.90	4587	166	2.9
1996	1.33	4964	140	2.0
1997	1.25	5859	120	2.5
1998	1.56	5318	29	1.80
1999	1.50	4784	159	1.70
2000	0.87	1274	699	1.20
2001	1.30	2252	64	0.94
2002	2.7	2695	46	0.53
2003	2.2	1285	215	0.37
2004	0.81	1072	254	0.86
2005	0.93	910	204	0.63
2006	0.49	840	185	1.11
2007	0.46	702	148	0.98
2008	0.45	661	62	0.85
2009	0.36	468	60	0.77
2010	0.53	464	377	0.83
2011	0.77	368	43	0.28
2012	0.76	198	658	0.59
2013	0.84	206	118	0.20

Year	Relative biomass index	Landings	Discards*	Relative harvest rate
2014	0.92	213	149	0.20
2015	1.67	161	224	0.121
2016	1.08	82	60	0.070
2017	0.92	84	59	0.082
2018	0.41	215	42	0.33
2019	0.68	295	7	0.23
2020	0.44	181	25	0.25
2021	0.40			

* Discards prior to 2007 are reconstructed.

Sources and references

EU. 2019. Regulation (EU) 2019/472 of the European Parliament and of the Council of 19 March 2019 establishing a multiannual plan for stocks fished in the Western Waters and adjacent waters, and for fisheries exploiting those stocks, amending Regulations (EU) 2016/1139 and (EU) 2018/973, and repealing Council Regulations (EC) No 811/2004, (EC) No 2166/2005, (EC) No 388/2006, (EC) No 509/2007 and (EC) No 1300/2008. Official Journal of the European Union, L 83: 1–17. <http://data.europa.eu/eli/reg/2019/472/oj>

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp. <https://doi.org/10.17895/ices.pub.5322>.

ICES. 2017. Report of the Benchmark Workshop on the Irish Sea Ecosystem (WKIrish3), 30 January–3 February 2017, Galway, Ireland. ICES CM 2017/BSG:01. 165 pp.

ICES. 2021a. Advice on fishing opportunities. In Report of the ICES Advisory Committee, 2021. ICES Advice 2021, section 1.1.1. <https://doi.org/10.17895/ices.advice.7720>.

ICES. 2021. Working Group for the Celtic Seas Ecoregion (WGCSE). Draft report. ICES Scientific Reports. 3:56. 1082 pp. <http://doi.org/10.17895/ices.pub.8139>. Publication of the full report is expected at the end of October 2021.

[Download the stock assessment data and figures.](#)

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