

6.3.13 Horse mackerel (*Trachurus trachurus*) in Divisions IIIa, IVb,c, and VIId (Skagerrak and Kattegat, Southern and Central North Sea, Eastern English Channel)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in 2016 should be no more than 15 200 tonnes.

Stock development over time

The available information, while broadly informative, is insufficient to evaluate 2014 biomass and exploitation status. Both the IBTS Q3 and the CGFS indices of 2+ horse mackerel indicate that the adult stock is relatively stable at a low level. Recruitment has been low with some indications of increases in the last few years. Catches in recent years have been declining slowly with an average around 23 kt (2011–2013), dropping to 13.4 kt in 2014.

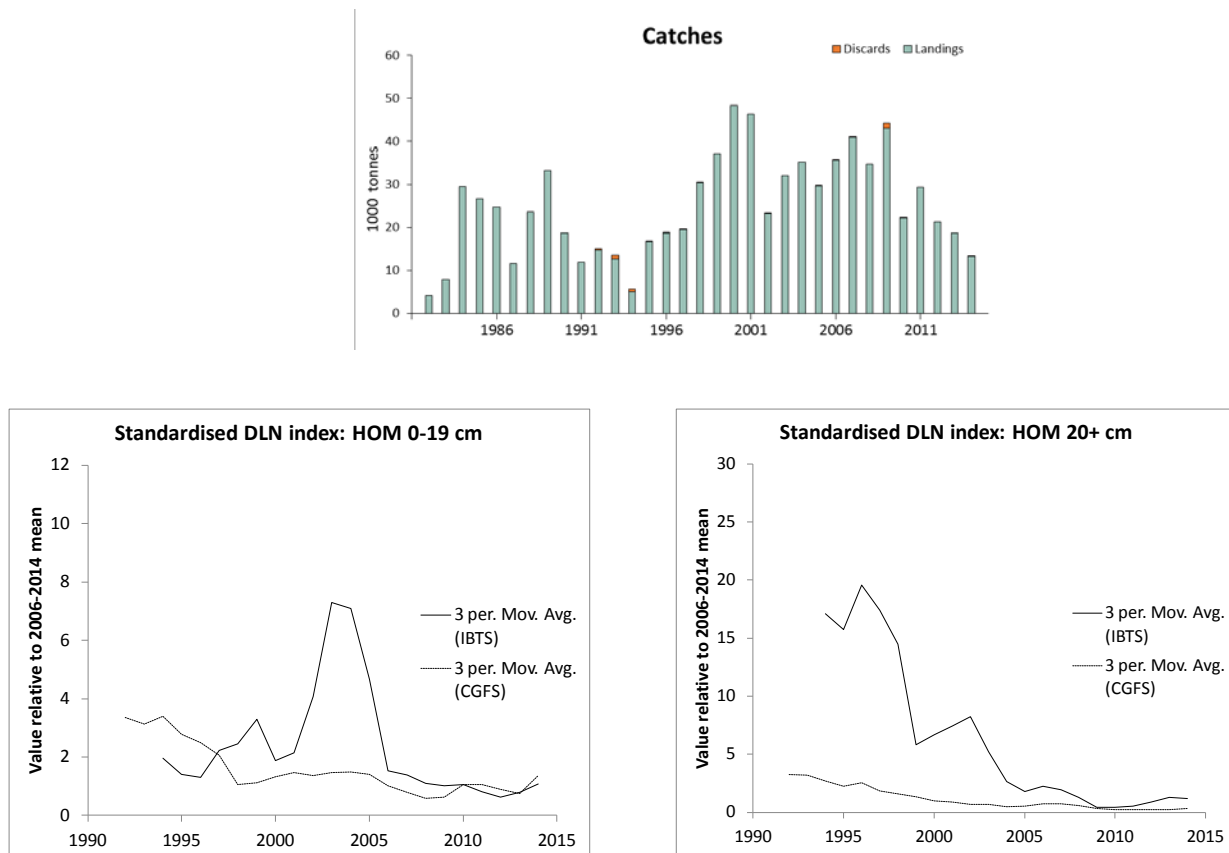


Figure 6.3.13.1 Horse mackerel in Divisions IIIa, IVb,c, and VIId. Top: Catches in quarters 1 and 2 from Divisions IIIa and IVa, and in all quarters from Divisions IVb,c, and VIId. Bottom: Delta-lognormal indices derived from the IBTS and CGFS surveys in the North Sea (Divisions IVb,c) and eastern English Channel (Division VIId), respectively. Left: young fish 0–19 cm. Right: older fish (20+ cm ~ age 2+). The abundance index values are standardized to the 2006–2014 mean. The plots show the three-year running mean trend-line.

Stock and exploitation status

Table 6.3.13.1 Horse mackerel in Divisions IIIa, IVb,c, and VIId. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size					
		2012	2013	2014	2013	2014	2015			
Maximum sustainable yield	F_{MSY}	?	?	?	Undefined	MSY	?	?	?	Undefined
Precautionary approach	F_{pa} , F_{lim}	?	?	?	Undefined	B_{pa} , B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	?	?	?	Unknown	-	→	→	→	Stable and low

Catch options

ICES advised significant reduction in catches for 2015. This led to a nearly 50% reduction in the agreed TAC (2014 to 2015) for this stock. The impact of this reduction in TAC on the catch in 2015 and the stock cannot yet be observed; hence, no further change in advised catches is considered necessary for 2016.

Table 6.3.13.2 Horse mackerel in Divisions IIIa, IVb,c, and VIId. For stocks in ICES data categories 3–6, one catch option is provided.

Recent advised catch for 2015			15 200 t
Discard rate			Negligible
Precautionary buffer	Not applied		-
Catch advice*			15 200 t

*Recent advised catch.

Basis of the advice

Table 6.3.13.3 Horse mackerel in Divisions IIIa, IVb,c, and VIId. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no management plan for horse mackerel in this area. ICES evaluated a proposed harvest control rule for a multi-annual plan for horse mackerel in the North Sea (ICES, 2014). None of the options were considered as being in accordance with the precautionary approach.

Quality of the assessment

In 2015 an additional survey index was provided (the French CGFS survey in Division VIId). This additional survey indicates the abundance in the main fishing area for this stock (Division VIId). Both surveys are very uncertain and individual years are not indicative of trends.

Given the uncertainty in the indices used it is unclear how the reduction in catches to 2014 has impacted on the stock at present, and the advice is to maintain catches at a low level until the indices clearly indicate a change in stock abundance.

Issues relevant for the advice

There is no information to present for this stock.

Reference points

No reference points are defined for this stock.

Basis of the assessment

Table 6.3.13.4 Horse mackerel in Divisions IIIa, IVb,c, and VIId. The basis of the assessment.

ICES stock data category	5 (ICES 2015a).
Assessment type	No assessment.
Input data	Commercial catch.
Discards and bycatch	Not included, considered negligible.
Indicators	Juvenile and adult survey indices from areas IV (IBTS Q3) and VIId (CGFS).
Other information	This stock has not been benchmarked. It is recommended to benchmark this stock together with the Western horse mackerel stock in 2017.
Working group	Working Group on Widely Distributed Stocks (WGWIDE).

Information from stakeholders

To improve the knowledge base for North Sea horse mackerel, a project has been initiated in 2015 by the Pelagic Freezer-trawler Association (PFA) together with IMARES and University College Dublin. The project aims to provide additional information on stock boundaries and mixing between North Sea and Western horse mackerel, and to explore or develop potential new abundance indices for North Sea horse mackerel.

History of advice, catch, and management

Table 6.3.13.5 Horse mackerel in Divisions IIIa, IVb,c, and VIId. History of ICES advice, the agreed TAC, and ICES estimates of catch.

Year	ICES advice	Predicted catch corresp. to advice	Agreed TAC *	ICES catch **
1987	Not assessed	-	30	12
1988	No advice	-	50	24
1989	No advice	-	45	33
1990	No advice	-	40	19
1991	No advice	-	45	12
1992	No advice	-	55	15
1993	No advice	-	60	14
1994	No advice	-	60	6
1995	No advice	-	60	17
1996	No advice	-	60	19
1997	No advice	-	60	20
1998	Develop and implement management plan	-	60	31
1999	Develop and implement management plan	-	60	37
2000	Develop and implement management plan	-	51	48
2001	No increase in catch	-	51	46
2002	No increase in catch from 1982–1997 average	< 18	58	23
2003	No increase in catch from 1982–1997 average	< 18	50	32
2004	No increase in catch from 1982–1997	< 18	42	35
2005	No increase in catch from 1982–1997	< 18	43	29
2006	No increase in catch from 1982–1997	< 18	43	36
2007	No increase in catch from 1982–1997	< 18	43	41
2008	No increase in catch from 1982–1997	< 18	39	36
2009	Same advice as last year	< 18	39	45
2010	Same advice as last year	< 18	47	24
2011	No advice	-	40	29
2012	Reduce catches	-	44	23
2013	Reduce catches by 20%	< 25.5	38	19
2014	Same advice as last year	< 25.5	32	13
2015	Significant reduction in catches	< 15.2	15.2	
2016	Same advice value as in 2015	≤ 15.2		

Weights in thousand tonnes.

* Until 2010 the TAC is for Division IIa and Subarea IV (EU waters only), 2010 onwards the TAC is for Divisions IVb,c and VIId (EU waters only).

** Catch includes catch from Divisions IVa and IIIa (quarters 1–2 only).

History of catch and landings

Table 6.3.13.6 Horse mackerel in Divisions IIIa, IVb,c, and VIId. Catch distribution by fleet in 2014 as estimated by ICES.

Total catch	Landings			Discards
13.4 kt	37% pelagic trawlers	59% Undefined gear	4% demersal bycatch	Considered negligible (< 1%)
	13.4 kt			

Table 6.3.13.7 Horse mackerel in Divisions IIIa, IVb,c, and VIId. History of commercial catch and landings, ICES estimated values are presented by area. Weights in tonnes.

Year	IIIa	IVa	IVb,c	VIId	Discards	Total
1982	2788*		-	1247		4035
1983	4420*		-	3600		8020
1984	25893*		-	3585		29478
1985	-		22897	2715		26750
1986	-		19496	4756		24648
1987	1138		9477	1721		11634
1988	396		18290	3120		23671
1989	436		25830	6522		33265
1990	2261		17437	1325		18762
1991	913		11400	600		12000
1992			13955	688	400	15043
1993			3895	8792	930	13617
1994			2496	2503	630	5689
1995	112		7948	8666	30	16756
1996	1657		7558	9416	212	18843
1997			14078	5452	10	19540
1998	3693		10530	16194	83	30500
1999			9335	27889		37224
2000			25954	22471		48425
2001	85	69	8157	38114		46356
2002			12636	10723	20	23379
2003	48	623	10309	21098		32078
2004	351		18348	16455		35154
2005	357		13892	15460	62	29711
2006	1099	2661	7998	23790	78	35626
2007	63	2056	9118	29788	139	41164
2008	27	1003	2330	31389		34749
2009	38	72	18711	24366	1036	44223
2010	< 1	100	1965	20188	2	22255
2011	0		10458	18886		29344
2012	1	4056	2596	14722		21375
2013	< 1	17	1477	17202		18696
2014	2	2	2596	10773	8	13388

* Divisions IIIa and IVb,c combined.

Summary of the assessment

Table 6.3.13.8 Horse mackerel in Divisions IIIa, IVb,c, and VIId. Relative indices of abundance derived from the IBTS Q3 (North Sea only) and the French Channel Groundfish Survey in Q4 (CGFS, Division VIId). The DLN indices are derived as the product of the cpue in the positive (non-zero) hauls and the proportion of positive hauls.

Year	IBTS Q3 – Subarea IV			CGFS Q4 – Division VIId		
	DLN IBTS_0–19cm	DLN IBTS_20+cm	P(non-Zero)	DLN CGFS_0–19cm	DLN CGFS_20+cm	P(non-Zero)
1990				6.17	1.28	0.91
1991				3.39	5.03	1.00
1992	478	68823	0.78	12.88	3.53	0.98
1993	279	58569	0.77	4.71	0.98	0.98
1994	554	51375	0.76	5.20	3.66	0.98
1995	104	54688	0.65	8.64	2.07	0.94
1996	208	98715	0.73	2.85	1.87	0.94
1997	1184	28743	0.70	2.33	1.54	0.97
1998	245	24014	0.74	1.88	1.39	0.98
1999	774	8005	0.68	3.27	1.10	0.95
2000	241	38015	0.64	3.71	0.41	0.94
2001	420	31967	0.60	2.81	1.21	0.95
2002	2073	16119	0.64	2.63	0.46	0.96
2003	2396	6363	0.67	4.31	0.42	0.98
2004	283	5083	0.66	3.08	0.52	0.96
2005	450	7417	0.53	2.09	0.73	0.92
2006	288	10923	0.53	1.60	0.98	0.92
2007	193	2044	0.51	1.56	0.53	0.88
2008	257	789	0.51	0.72	0.24	0.86
2009	234	1500	0.50	1.86	0.20	0.92
2010	213	2361	0.49	4.43	0.23	0.90
2011	103	1554	0.39	0.79	0.32	0.80
2012	108	5562	0.32	0.79	0.14	0.87
2013	313	6301	0.28	3.48	0.28	0.86
2014	303	366	0.46	4.86	0.61	0.89

Sources and references

ICES. 2014a. The Netherlands request for evaluation of the proposal for a multi-annual plan for horse mackerel in the North Sea. *In* Report of the ICES Advisory Committee, 2014. ICES Advice 2014, Book 6, Section 6.2.3.3.

ICES 2015a. Advice basis. *In* Report of the ICES Advisory Committee, 2015. ICES Advice 2015, Book 6, Section 6.3.13.

ICES 2015b. Report of the Working Group on Widely Distributed Stocks (WGWIDE), 25–31 August, 2015, Pasaia, Spain. ICES CM 2015/ACOM:15.