ICES Advice on fishing opportunities, catch, and effort
Baltic Sea and Greater North Sea Ecoregions
dab.27.22-32

Published 31 May 2017
DOI: 10.17895/ices.pub.3105

Dab (*Limanda limanda*) in subdivisions 22–32 (Baltic Sea)

ICES stock advice

ICES advises that when the precautionary approach is applied, catches in 2018 should be no more than 2762 tonnes. If discard rates do not change from the average of the last three years (2014–2016), this implies landings of no more than 1607 tonnes.

Stock development over time

The stock size indicator from surveys has increased by a factor of three since the early 2000s and has been stable since 2010.

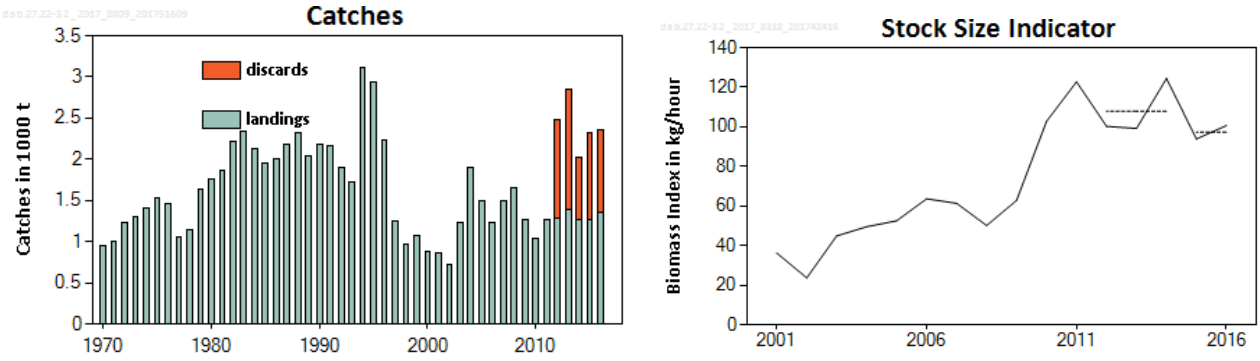

Figure 1 Dab in subdivisions 22–32. Left: ICES landings and ICES estimates of discards (in thousand tonnes). Discard data have only been included since 2012. Right: Combined biomass index (kg h^{-1}) of dab larger than 15 cm, from the Baltic International Trawl Survey (BITS – Q1 and Q4) in subdivisions 22, 23, and 24. Dashed lines indicate the average biomass index of the respective year range.

Stock and exploitation status

Table 1 Dab in subdivisions 22–32. State of the stock and fishery relative to reference points. The status evaluation is based on reference point proxies (ICES, 2017).

	Fishing pressure					Stock size				
		2014	2015	2016			2014	2015	2016	
Maximum sustainable yield	$F_{MSY\ proxy}$	✓	✓	✓	Below	MSY $B_{trigger}$	?	?	?	Undefined
Precautionary approach	F_{pa}, F_{lim}	✓	✓	✓	Below possible reference points	B_{pa}, B_{lim}	?	?	?	Undefined
Management plan	F_{MGT}	-	-	-	Not applicable	SSB_{MGT}	-	-	-	Not applicable
Qualitative evaluation	-	-	-	-	-	-	↗	↘	→	Stable

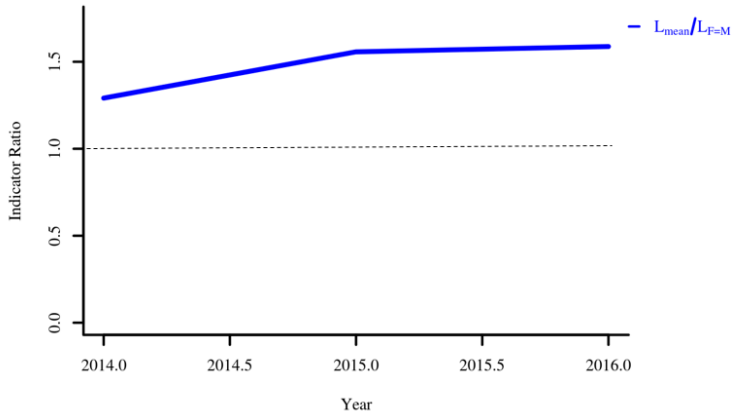

Figure 2 Dab in subdivisions 22–32. Index ratio $L_{mean}/L_{F=M}$ from the length-based indicator (LBI; ICES, 2015) method used for the evaluation of the exploitation status. The exploitation status is below the F_{MSY} proxy when the index ratio value is higher than 1.

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The geometric mean of the biomass per hour of dab larger than or equal to 15 cm from the Baltic International Trawl Survey in quarters 1 and 4 (BITS–Q1 and Q4) was used as the index of stock development. The advice is based on a comparison of the two latest index values (index A) with the three preceding values (index B), multiplied by the recent advised catch.

The index is estimated to have decreased by less than 20% and thus the uncertainty cap was not applied in estimating the catch advice. Fishing mortality is below proxies of the MSY reference points (as indicated by a length-based analysis). The stock size relative to reference points is unknown. The stock size indicator has been stable since 2010 after a threefold increase since the early 2000s. Therefore, no additional precautionary buffer was applied. Discarding is known to take place; the discard ratio is variable and has been estimated based on a three-year average.

Table 2 Dab in subdivisions 22–32. The basis for the catch options.*

Index A (2015, 2016)		97 kg/hour
Index B (2012, 2013, 2014)		108 kg/hour
Index ratio (A/B)		0.90
Uncertainty cap	Not applied	-
Advised catch for 2017		3069 tonnes
Discard rate (2014, 2015, 2016)		0.42
Precautionary buffer	Not applied	-
Catch advice**		2762 tonnes
Landings corresponding to the catch***		1607 tonnes

* 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 2017] × [Index ratio].
*** [Catch advice] × [1 − discard rate].

Basis of the advice

Table 3 Dab in subdivisions 22–32. The basis of the advice.

Advice basis	Precautionary approach.
Management plan	There is no management plan for dab in this area.

Quality of the assessment

Only survey data for subdivisions 22–24 are used. These subdivisions are considered to contain the bulk of the stock.

Issues relevant for the advice

Catches are mainly taken as bycatch, and this stock is currently not regulated by a TAC.

Reference points

Table 4 Dab in subdivisions 22–32. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{trigger_{proxy}}$			
	$F_{MSY_{proxy}}$	21 cm	Length-based indicator (LBI); expected mean length of catch (above the length at first catch) when F = M.	ICES (2017)
Precautionary approach	B_{lim}			
	B_{pa}			
	F_{lim}			
	F_{pa}			
Management plan	SSB_{mgt}			
	F_{mgt}			

Basis of the assessment

Table 5 Dab in subdivisions 22–32. Basis of assessment and advice.

ICES stock data category	3 (ICES, 2016).
Assessment type	Survey trends (ICES, 2017).
Input data	Commercial landings and survey data from the Baltic International Trawl Survey (BITS–Q1 and Q4).
Discards and bycatch	Discard data from 2012 onwards were used in the advice.
Indicators	Length-based indicator (LBI; ICES, 2015)
Other information	This stock was benchmarked in 2014 (WKBALFLAT; ICES, 2014).
Working group	Baltic Fisheries Assessment Working Group (WGBFAS)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 6 Dab in subdivisions 22–32. ICES advice and official landings. All weights are in thousand tonnes.

Year	ICES advice	Predicted landings corresp. to advice	Agreed TAC	Landings (ICES estimates)	Catches (ICES estimates)
2000	No advice	-	-	876	
2001	No advice	-	-	861	
2002	No advice	-	-	715	
2003	No advice	-	-	1233	
2004	No advice	-	-	1894	
2005	No advice	-	-	1495	
2006	No advice	-	-	1228	
2007	No advice	-	-	1504	
2008	No advice	-	-	1648	
2009	No advice	-	-	1268	

Year	ICES advice	Predicted landings corresp. to advice	Agreed TAC	Landings (ICES estimates)	Catches (ICES estimates)
2010	No advice	-	-	1041	
2011	No advice	-	-	1268	
2012	Catches should not be increased	-	-	1285	2476
2013	No more than 20% catch increase	≤ 1400	-	1384	2842
2014	No more than 20% landings increase	≤ 1400	-	1267	2026
2015	Increased landings by no more than 3%	≤ 1428	-	1268	2323
2016	Precautionary approach (≤ 12% increase in catch)	≤ 2980*	-	1356	2363
2017	Precautionary approach (≤ 3% increase in catch)	≤ 3069*	-		
2018	Precautionary approach (≥ 10% decrease in catch)	≤ 2762*			

* Catch advice.

History of the catch and landings

Table 7 Dab in subdivisions 22–32. Catch distribution by fleet in 2016 as estimated by ICES.

Catch (2016)	Landings		Discards
2363 tonnes	Active gears 90%	Passive gears 10%	1007 tonnes
	1356 tonnes		

Table 8 Dab in subdivisions 22–32. History of commercial catch and landings; both the official and ICES estimated values are presented by area for each country participating in the fishery. All weights are in tonnes.

Year	Landings									Total landings SDs 22–30	Discards	Total catch
	SD 22	SD 23	SD 24*	SD 25**	SD 26	SD 27	SD 28	SD 29	SD 30			
1970	930		20							950		
1971	985		26							1011		
1972	1182		53							1235		
1973	1223		88							1311		
1974	1314		85							1399		
1975	1424		106							1530		
1976	1369		87							1456		
1977	991		57							1048		
1978	1075		69							1144		
1979	1554		85							1639		
1980	1709		49							1758		
1981	1789		76							1865		
1982	2091		98	5		8	6		1	2209		
1983	2164		94	20		32	22		2	2334		
1984	2001		118	3		5	4		1	2132		
1985	1832		114	3		5	3		1	1958		
1986	1876		122	1		1	1			2001		
1987	1996		185	1		1	1			2184		
1988	2149		168	1		1	1			2320		
1989	1966		69	1		2	1			2039		
1990	2009		166							2175		
1991	2071		101							2172		
1992	1815		87	1		1		4		1908		
1993	1552	7	166	1				1		1727		
1994	2811	5	244	46						3106		
1995	2695	52	177	18			1			2943		
1996	1907	37	265	17	2	1				2229		
1997	1141	5	86	12		3	1			1248		
1998	849	7	98	5		1				960		
1999	1003	3	64	1						1071		
2000	824	2	49	1						876		
2001	777	4	78	2						861		
2002	675	4	36							715		
2003	1053	1	179	< 1						1233		
2004	1698	1	196	< 1						1894		
2005	1226	35	209	25						1495		
2006	894	24	138	172						1228		
2007	1332	40	126	7						1504		
2008	1264	39	119	223		1	2			1648		
2009	1108	27	129	1		1	3			1268		
2010	950	19	69	2						1041		
2011	1192	21	53	1						1268		
2012	1173	23	89							1287	1189	2476
2013	1279	18	86	< 1						1384	1456	2842
2014	1174	11	82	< 1						1269	757	2026
2015	1223	9	35	2						1268	1055	2323
2016	1295	38	23	3	1.295	< 1	< 1	< 1	-	1356	1007	2363

* For the years 1970–1981 and 1990 the Swedish catches in subdivisions 25–28 are included in Subdivision 24.
** In 1995 Danish landings in subdivisions 25–28 are included.

Summary of the assessment

Table 9 Dab in subdivisions 22–32. Assessment summary. The stock size indicator is a combined biomass index of dab larger than 15 cm, from the Baltic International Trawl Survey (BITS–Q1 and Q4) in subdivisions 22, 23, and 24. The individual indices are weighted averages per depth stratum area and the two indices are combined using the geometric mean.

Year	Stock size indicator	Landings	Discards
	kg h^{-1}	tonnes	tonnes
2001	36	861	
2002	24	715	
2003	45	1233	
2004	50	1894	
2005	53	1495	
2006	64	1228	
2007	61	1504	
2008	50	1648	
2009	63	1268	
2010	103	1041	
2011	123	1268	
2012	100	1285	1191
2013	99	1384	1458
2014	124	1269	757
2015	94*	1268	1055
2016	101	1356	1007

* Updated in 2017.

Sources and references

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM 68. 42 pp.

ICES. 2014. Report of the Benchmark Workshop on Baltic Flatfish Stocks (WKBALFLAT), 27–31 January 2014, ICES Headquarters, Copenhagen, Denmark. ICES CM 2014/ACOM:39. 316 pp.

ICES. 2015. Report of the Fifth Workshop on the Development of Quantitative Assessment Methodologies based on Life-history Traits, Exploitation Characteristics and other Relevant Parameters for Data-limited Stocks (WKLIFE V), 5–9 October 2015, Lisbon, Portugal. ICES CM 2015/ACOM:56. 157 pp.

ICES. 2016. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2017. Report of the Baltic Fisheries Assessment Working Group (WGBFAS), 19–26 April 2017, ICES Headquarters, Copenhagen, Denmark. ICES CM 2017/ACOM:11.