

Turbot (*Scophthalmus maximus*) in subdivisions 22–32 (Baltic Sea)

ICES stock advice

ICES advises that when the precautionary approach is applied, landings in 2018 should be no more than 186 tonnes. ICES cannot quantify the corresponding total catches.

Stock development over time

The stock size indicator has been stable since 2007.

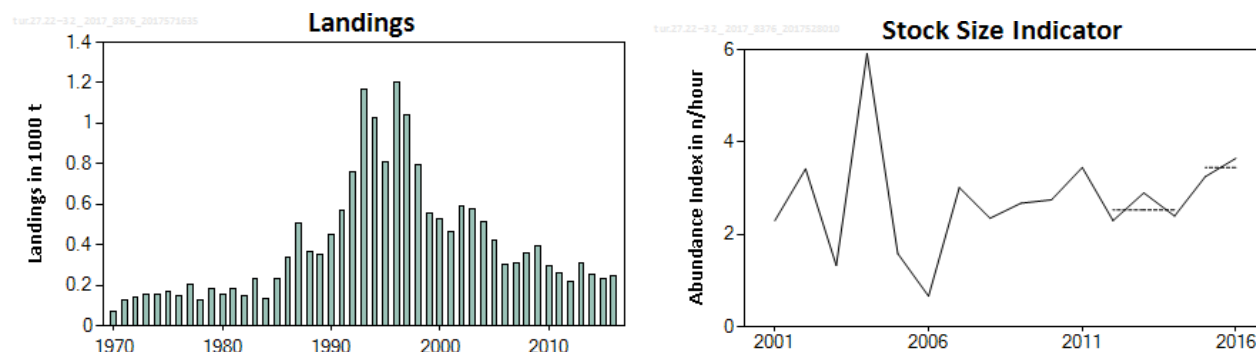


Figure 1 Turbot in subdivisions 22–32. Left: ICES estimates of landings (in thousand tonnes). Right: Combined abundance index (number per hour) of turbot equal to or larger than 20 cm, from the Baltic International Trawl Survey (BITS–Q1 and Q4) in subdivisions 22–28.

Stock and exploitation status

Table 1 Turbot in subdivisions 22–32. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size		
		2014	2015	2016	2014	2015	2016
Maximum sustainable yield	F_{MSY}	?	?	?	MSY	?	?
Precautionary approach	F_{pa} , F_{lim}	?	?	?	B_{pa} , B_{lim}	?	?
Management plan	F_{MGT}	-	-	-	SSB_{MGT}	-	-
Qualitative evaluation	-	→	→	→	-	→	→
				Undefined			Undefined
				Undefined			Undefined
				Not applicable			Not applicable
				Stable			Increasing

Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). The Baltic International Trawl Survey (BITS–Q1 and Q4) cpue (number hour⁻¹) is 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 landings.

The index is estimated to have increased by more than 20% and thus the uncertainty cap was applied to calculate the catch advice. The stock status relative to candidate reference points is unknown. The precautionary buffer was last applied in 2012. Because there is no information on stock size or fishing pressure, the precautionary buffer was applied again in 2017.

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

Index A (2015, 2016)		3.5 no. h ⁻¹
Index B (2012, 2013, 2014)		2.5 no. h ⁻¹
Index ratio (A/B)		1.37
Uncertainty cap	Applied	1.2
Advised landings for 2017		194 tonnes
Discard rate		Unknown
Precautionary buffer	Applied	0.8
Landings advice**		186 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.

** [advice for 2017] × [uncertainty cap] × [precautionary buffer].

Basis of the advice

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

Advice basis	Precautionary approach.
Management plan	The EU multiannual plan for the Baltic Sea (MAP; EU, 2016) takes bycatch of this species into account.

Quality of the assessment

The index used as stock size indicator is considered uncertain due to the low catch rate in the surveys. Additionally, catch data, including discards, should be improved in order to get a better understanding of the state of the turbot in the Baltic Sea.

Issues relevant for the advice

Catches are mainly taken as bycatch, and this stock is currently not regulated by a TAC. Fishing effort of active and passive gears of all countries has been stable in the last years, with a slight decrease in passive gears.

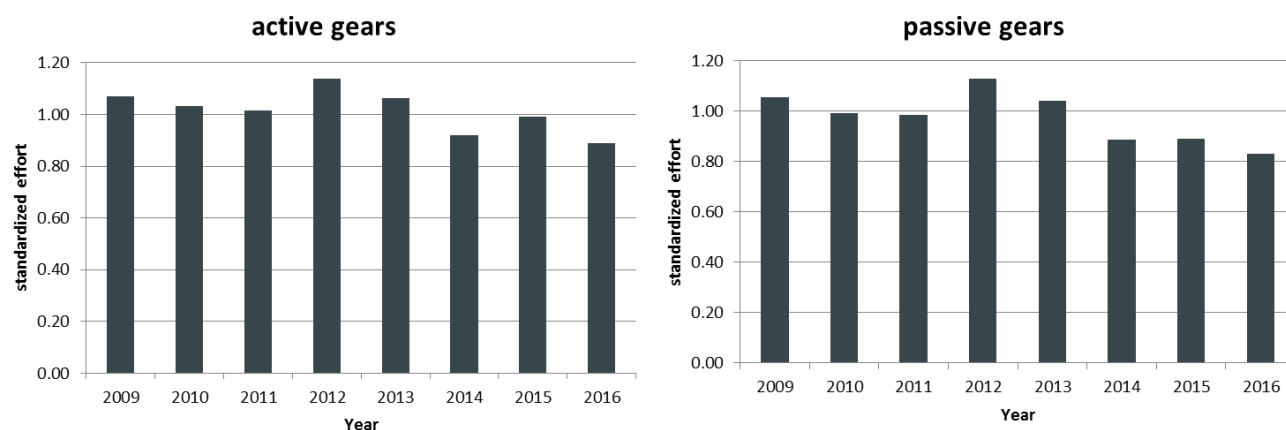


Figure 2 Turbot in subdivisions 22–32. Standardized effort for active and passive fleets in subdivisions 22 to 28 (main distribution range of tur.27.22–32). Standard catches (effort per strata and country divided by average effort per country) were weighted by the mean of cod landings by country.

Reference points

No reference points are defined for this stock. An attempt has been made this year to calculate MSY proxy reference points for this stock. However, there were concerns on the quality of the input parameters for the analysis and further investigation is needed (ICES, 2017).

Basis of the assessment

Table 4 Turbot in subdivisions 22–32. Basis of the assessment and advice.

ICES stock data category	3 (ICES, 2016).
Assessment type	Survey trends (ICES, 2017).
Input data	Commercial landings and survey data from Baltic International Trawl Survey (BITS – Q1 and Q4).
Discards and bycatch	Discards are known to take place but cannot be quantified.
Indicators	Commercial effort.
Other information	None.
Working group	Baltic Fisheries Assessment Working Group (WGBFAS)

Information from stakeholders

There is no available information.

History of the advice, catch, and management

Table 5 Turbot in subdivisions 22–32. ICES advice and official landings. All weights are in tonnes.

Year	ICES advice	Predicted catches corresp. to advice	Agreed TAC	Landings (ICES estimates)
2000	No advice	-	-	530
2001	No advice	-	-	464
2002	No advice	-	-	591
2003	No advice	-	-	579
2004	No advice	-	-	516
2005	No advice	-	-	420
2006	No advice	-	-	305
2007	No advice	-	-	309
2008	No advice	-	-	356
2009	No advice	-	-	394
2010	No advice	-	-	295
2011	No advice	-	-	263
2012	Reduce catch	-	-	221
2013	Reduce catches by 17% (and an additional 20%)	< 220	-	313
2014	Same advice as in 2013	< 220	-	253
2015	Same advice as last year	< 220	-	233
2016	Precautionary approach (10% decrease in advised landings)*	≤ 198	-	252
2017	Precautionary approach (2% decrease in advised landings)*	≤ 194	-	
2018	Precautionary approach (4% decrease in advised landings)*	≤ 186		

* Landings advice is provided In 2016–2018.

History of the catch and landings

Table 6 Turbot in subdivisions 22–32. Catch distribution by fleet in 2016 as estimated by ICES.

Catch (2016)	Landings		Discards
Unknown	Active gears 21%	passive gears 79%	Discarding is known to take place and is considered substantial but could not be quantified
	252 tonnes		

Table 7 Turbot in subdivisions 22–32. History of commercial 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	Denmark					Germ. Dem. Rep.*	Germany, FRG				Poland		Sweden**						Latvia		Lithuania	Russia	Finland						Estonia		Total	
	22	23	24(+25)	25	26+27		22	24	25	27	25(+24)	26	22	23	24	25	26	27	28(+29)	26	28	26	26	24	25	29	30	31	32	29		32
1965						3	39																									42
1966	16		21			5	53																									95
1967	14		20			7	10																									51
1968	14		18			3	67																									102
1969	13		13			4	57																									87
1970	11		13			5	40								2																	71
1971	11		26			4	86								2																	129
1972	10		26			3	100								3																	142
1973	11		30			3	33				58	13			5																	153
1974	14		40			2	23				34	36			6																	155
1975	27		48			3	38	15			23	6			7																	167
1976	29		24				52	11			14	12			7																	149
1977	32		37				55	9			12	55			8																	208
1978	33		37			2	27	9			7	3			10																	128
1979	23		38			3	39	6			29	34			12																	184
1980	28		38				30	9			12	20			15																	152
1981	28		62			1	46	8			10	19			7																	181
1982	31		51			1	27	7			2	17			3	4		4	3													150
1983	33		40			3	9	8			5	4			31	41		35	24													233
1984	41		45			4	8	12			13	2			3	4		3	2													137
1985	56		34			5	22	15			67	15			4	5		4	3													230
1986	99		81			6	32	25			32	37			6	8		7	5													338
1987	134		93			4	34	30			155	21			8	11		9	6													505
1988	117		117			3	28	34			7	10			12	16		14	9													367
1989	135		109			7	22	20				11			11	15		13	9													352
1990	178		181			4	2	26			24	25			14																	454
1991	228		137					44	39		73	20			2	12		16														571
1992	267		127					55	68		80	55			12	12		21	36				30									763
1993	159	29	152					74	56			520	72		2	4	14		13	38				34								1167
1994	211	18	166					52	57	10		380	30		2	3	18	1	17	44				15								1024
1995	257	11	94					65	53	4		30	15		2	3	54	9	31	83	34	27	15	20								807
1996	207	12	95					36	47	4	1	288	92	1	3	15	100	5	54	104	42	3	72	25								1206
1997	151		68					60	52	3		290	70		2	6	70	1	53	86	33	14	59	25								1043
1998	138		80					44	55	1		66	68		2	4	58	1	18	69	12	24	62	96								798
1999	106		59					23	48			18	15		2	4	41	3	17	60	20	34	58	48								556
2000	97		58					23	54			90	12		2	3	39		16	39	7	9	23	53								525

Year	Denmark					Germ. Dem. Rep.*		Germany, FRG				Poland		Sweden**							Latvia		Lithuania	Russia	Finland						Estonia		Total	
	22	23	24(+25)	25	26+27	22	24	22	24	25	27	25(+24)	26	22	23	24	25	26	27	28(+29)	26	28	26	26	24	25	29	30	31	32	29	32		
2001	76		53					19	31			121	10		2	5	16		9	29	5	1	18	69									464	
2002	73		22	4	0			20	32	2		245	65		5	2	15		7	21	2	8	18	50									591	
2003	48		28	5	0			10	39	1		184	178		1	2	18		3	14	7	2	13	28									579	
2004	61		27	7				12	27	1		225	96		1	1	8		3	14	3	8	7	15									516	
2005	57	5	36	12				14	35	1		123	57		1	3	6		5	21	1	6	18	19									420	
2006	30	5	16	33				19	45	1		87	11		1	2	5	0	4	19	3	3	9	12									305	
2007	60	5	26	5	0			22	34	0		83	8		0	5	5		2	15	0	1	12	24									309	
2008	79	5	33	6				24	30	0		95	15		1	7	11		8	17			10	14									356	
2009	111	6	35	7	0			33	50	1		92	11		1	6	10	0	5	6	0	0	11	8									394	
2010	102	6	31	4	0			24	35	0		38	1		1	4	16	0	4	8	3	7	9	2									295	
2011	84	3	24	3	0			26	31	0		66	11	0	0	0	0	0	0	0	3	6	0	5	0	0	0	0	0	0	0	0	0	262
2012	43	3	16	1	0			16	27	0	0	55	11	0	0	0	0	0	0	0	5	5	14	15	0	0	0	0	0	0	0	0	0	211
2013	66	5	21	1	0			23	40	0	0	61	12	0	1	6	16	0	1	3	5	4	13	20	16	0	0	0	0	0	0	0	0	313
2014	84	5	27	1	0			35	30	0	0	25	5	0	1	3	13	0	2	4	2	5	7	6	0		0				0		253	
2015	84	5	22	1	0			27	19	0	0	41	8	0	0	4	9	0	1	1	0	4	4	3	0	0	0	0	0	0	0	0	0	233
2016	68	4	34	3	0			25	23	1		43	13	0	2	5	9	0	1	1	1	5	7	6	0	0	0	0	0	0	0	0.1	0.1	252

* For the years 1970–1981 and 1990 the Swedish catches of subdivisions 25–28 are included in Subdivision 24. Landings were corrected by Poland for 2012 and 2013 and by Russia for 2000–2009.

** For the years 1970–1981 and 1990 catches of subdivisions 25–28 are included in Subdivision 24.

Summary of the assessment

Table 8 Turbot in subdivisions 22–32. Assessment summary. The stock size indicator is a combined abundance index of turbot equal to or larger than 20 cm, from the Baltic International Trawl Survey (BITS–Q1 and Q4) in subdivisions 22–28. The individual indices are weighted averages per depth stratum area and the two indices are combined using the geometric mean.

Year	Stock size indicator (number per hour)	Landings (tonnes)
2001	2.3	464
2002	3.4	591
2003	1.33	579
2004	5.9	516
2005	1.59	420
2006	0.67	305
2007	3.0	309
2008	2.4	356
2009	2.7	394
2010	2.8	295
2011	3.4	263
2012	2.3	221
2013	2.9	313
2014	2.4	253
2015	3.3	233
2016	3.7	252

Sources and references

EU. 2016. Regulation (EU) 2016/1139 of the European Parliament and of the Council of 6 July 2016 establishing a multiannual plan for the stocks of cod, herring and sprat in the Baltic Sea and the fisheries exploiting those stocks, amending Council Regulation (EC) No 2187/2005 and repealing Council Regulation (EC) No 1098/2007. Official Journal of the European Union, L 191/1. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1139&rid=1>.

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