

### 6.3.2 Brill (*Scophthalmus rhombus*) in Subarea IV and Divisions IIIa and VIId,e (North Sea, Skagerrak and Kattegat, English Channel)

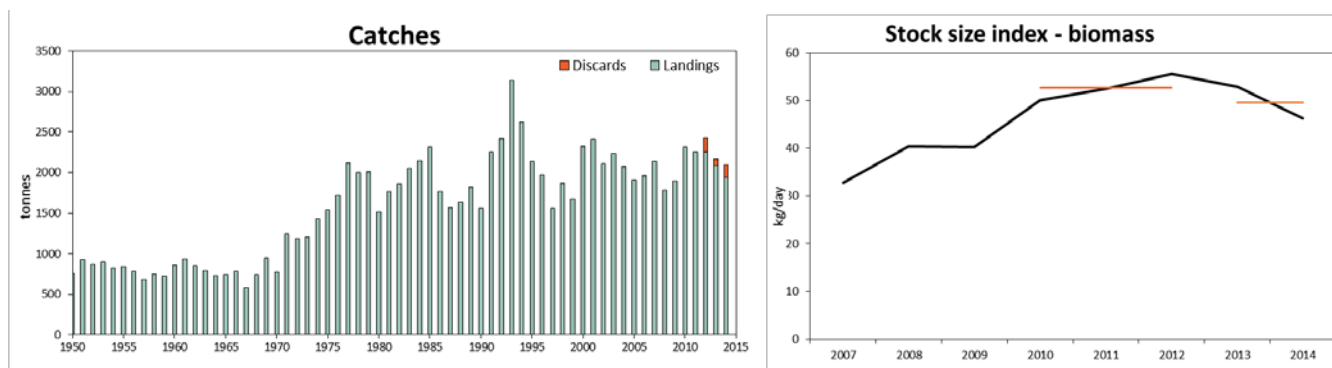
#### ICES stock advice

ICES advises that when the precautionary approach is applied, catches should be no more than 2756 tonnes in each of the years 2016 and 2017. If discard rates do not change from the average of the last three years (2012–2014), this implies landings of no more than 2563 tonnes.

Management of turbot and brill under a combined species TAC prevents effective control of the single-species exploitation rates and could lead to the overexploitation of either species.

#### Stock development over time

The stock size indicator shows an increase from 2007 to 2012 and some decline since then.



**Figure 6.3.2.1** Brill in Subarea IV and Divisions IIIa and VIId,e. Left: official landings and discards (in tonnes). Discards data only included since 2012. Right: biomass index (standardized lpu from the Dutch beam-trawl fleet > 221 kW [ $\text{kg day}^{-1}$ ]).

#### Stock and exploitation status

**Table 6.3.2.1** Brill in Subarea IV and Divisions IIIa and VIId,e. State of the stock and fishery, relative to reference points.

		Fishing pressure			Stock size					
		2012	2013	2014	2012	2013	2014			
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	-	?	?	?	Insufficient information	-	↗	↘	↘	Generally stable

**Catch options**

The ICES framework for category 3 stocks was applied (ICES, 2012). The standardized l<sub>pue</sub> from the Dutch beam-trawl fleet (vessels > 221 kW) was applied 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 decreased by less than 20% and thus the uncertainty cap was not applied. Brill is mainly a bycatch species in the North Sea demersal fisheries.

Large effort reductions of about 60% in beam- and otter-trawl fisheries took place in the period 2000–2012 (STECF-14-03). Additionally, an index from the North Sea (numbers hour<sup>-1</sup> from the BTS-ISIS-Q3 survey, Figure 6.3.2.2) shows variability around an overall constant level, whereas an index from the Kattegat (numbers hour<sup>-1</sup> from the BITS-HAV-Q1&Q4, Figure 6.3.2.2) shows an increasing trend during the 2000s, with higher values since the late 2000s. Total catch in 2014 was below the ICES advice for that year and both indices increased in 2014. Given this information, the stock is not expected to be overexploited and no precautionary buffer was applied.

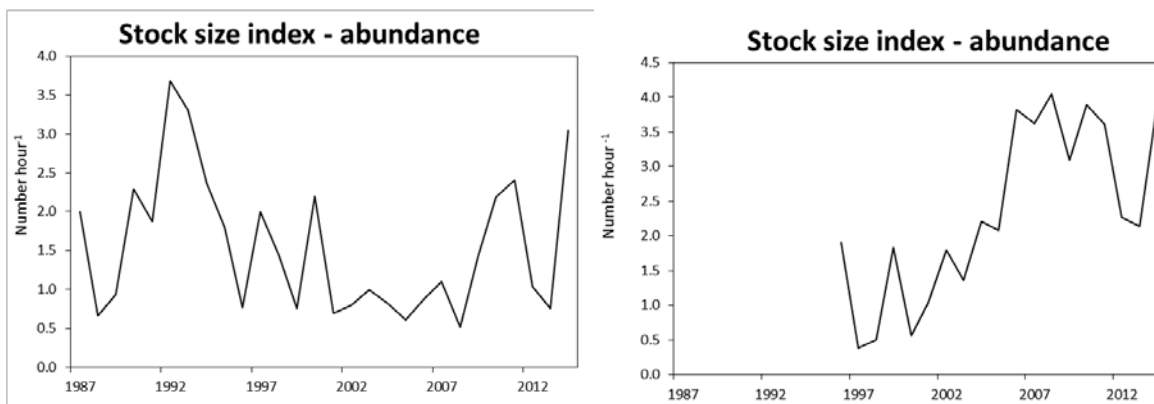
Discarding rate is 7% of the total catch.

**Table 6.3.2.2** Brill in Subarea IV and Divisions IIIa and VIId,e. For stocks in ICES data categories 3–6, one catch option is provided.

Index A (2013–2014)	49.60 kg day <sup>-1</sup>	
Index B (2010–2012)	52.63 kg day <sup>-1</sup>	
Indicator ratio	0.94	
Uncertainty cap	Not applied	-
Recent advised landings for 2015*	2727 tonnes	
Discard rate (average of 2012-2014)	7%	
Precautionary buffer	Not applied	-
Catch advice **	2756 tonnes	
Landings corresponding to the catch advice	2563 tonnes	

\* Prior to 2015 discarding was assumed to be negligible.

\*\* Recent advised landings × index ratio / (1 – discard rate).



**Figure 6.3.2.2** Index for North Sea (left; BTS-ISIS-Q3) and Kattegat (right; BITS-HAV-Q1&Q4).

**Basis of the advice**

**Table 6.3.2.3** Brill in Subarea IV and Divisions IIIa and VIId,e. The basis of the advice.

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

**Quality of the assessment**

Fishery-independent surveys catch very few large brill, creating data gaps for the greater fish lengths. Commercial surveys could be further developed to effectively monitor the full age and size spectrum of this species.

The advice is based on a commercial biomass index (Dutch beam-trawl fleet, vessels > 221 kW) used as an indicator of stock size.

A fishery-independent index covering the entire distribution area of the stock would improve the assessment. The commercial index used is derived from catch and effort data for the Dutch beam-trawl fleet. Since 2011, the use of pulse trawls in the Dutch fishery has increased sharply to 74 vessels (of which 65 vessels are > 221 kW) and only eight traditional beam trawlers are now left. The increased use of pulse trawls and other adaptations like fuel-saving wings may affect catchability and selectivity of North Sea brill. Though this effect has not yet been quantified, it will increase assessment uncertainty.

### Issues relevant for the advice

Brill is mainly a bycatch species in fisheries for plaice and sole. Management of brill and turbot under a combined species TAC prevents effective control of the single-species exploitation rates and could lead to overexploitation of either species.

### Reference points

No reference points are defined for this stock.

### Basis of the assessment

**Table 6.3.2.4** Brill in Subarea IV and Divisions IIIa and VIId,e. The basis of the assessment.

ICES stock data category	3.2.0 ( <a href="#">ICES, 2015a</a> ).
Assessment type	Commercial lpue trends-based assessment (ICES, 2015b).
Input data	Commercial catches (international landings), one commercial biomass index (lpue Dutch beam-trawl fleet > 221 kW).
Discards and bycatch	Discards are included in the assessment (2012–2014).
Additional indicators	None.
Other information	None.
Working group	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak ( <a href="#">WGNSSK</a> ).

### Information from stakeholders

There is no available information.

### History of advice, catch, and management

**Table 6.3.2.5** Brill in Subarea IV and Divisions IIIa and VIId,e. History of ICES advice, the agreed TAC, and ICES estimates of landings. All weights in thousand tonnes.

Year	ICES advice	Predicted catch corresp. to advice	Agreed TAC * in IV and IIa turbot & brill	Official catches in IV and IIa turbot & brill	Official landings in IV, IIIa, VIId,e brill	Discards in IV, IIIa, VIId,e brill	ICES catch in IV, IIIa, VIId,e brill
2000		-	9	5.534	2.327		
2001		-	9	5.674	2.409		
2002		-	6.750	5.052	2.108		
2003		-	5.738	4.721	2.233		
2004		-	4.877	4.568	2.071		
2005		-	4.550	4.355	1.904		
2006		-	4.323	4.152	1.964		
2007		-	4.323	4.750	2.139		
2008		-	5.263	4.011	1.781		
2009		-	5.263	4.253	1.900		
2010		-	5.263	4.192	2.317		
2011		-	4.642	4.304	2.250		
2012	No increase in catch	-	4.642	4.426	2.249	178	2.427
2013	No new advice, same as for 2012	-	4.642	4.474	2.082	98	2.171
2014	No more than 20% increase in recent average catch (2010-2012)	< 2.727	4.642	4.128	1.942 **	162	2.104 **
2015	No new advice, same as for 2014	< 2.727	4.642				
2016	Precautionary approach (decrease catches by 6%)	≤ 2.756***					
2017	Precautionary approach (same advised catch value as given for 2016)	≤ 2.756***					

\* EU combined TAC for turbot and brill in EU waters of IIa and IV.

\*\* Preliminary.

\*\*\* Advised catch takes into account new discard information that became available in 2015.

**History of catch and landings**

**Table 6.3.2.6** Brill in Subarea IV and Divisions IIIa and VIId,e. Catch distribution by fleet in 2014 as estimated by ICES.

Catch (2014)	Landings		Discards
	95% beam-trawl fisheries	5% others	
2104 t	1942 t		162 t

**Table 6.3.2.7** Brill in Subarea IV and Divisions IIIa and VIId,e. History of commercial landings; official values are presented by area for each country participating in the fishery. All weights in tonnes.

Brill in Division IIIa							
Year	Belgium	Germany	Denmark	Netherlands	Norway	Sweden	TOTAL
1950	0	0	234	0	0	85	319
1951	0	0	260	0	4	73	337
1952	0	0	170	0	1	65	236
1953	0	0	175	0	0	71	246
1954	0	0	155	0	1	78	234
1955	0	0	150	0	0	62	212
1956	0	0	163	0	0	50	213
1957	0	0	110	0	0	38	148
1958	0	0	166	0	0	37	203
1959	0	0	175	0	0	58	233
1960	0	0	272	0	0	46	318
1961	0	0	255	0	0	50	305
1962	0	0	207	0	0	0	207
1963	0	0	120	0	0	0	120
1964	0	0	106	0	0	0	106
1965	0	0	155	0	0	0	155
1966	0	0	187	0	0	0	187
1967	0	0	106	0	0	0	106
1968	0	0	100	0	0	0	100
1969	0	0	99	0	0	0	99
1970	0	0	97	0	0	0	97
1971	0	0	104	0	0	0	104
1972	0	0	120	0	0	0	120
1973	0	0	131	0	0	0	131
1974	0	0	200	0	0	0	200
1975	0	0	167	1	0	19	187
1976	1	0	185	26	0	12	224
1977	1	0	276	99	0	12	388
1978	0	0	178	27	0	11	216
1979	0	0	156	17	0	11	184
1980	2	0	69	1	0	10	82
1981	0	0	54	0	0	5	59
1982	1	0	64	1	0	8	74
1983	0	0	73	3	0	7	83
1984	0	0	89	0	0	8	97
1985	0	0	100	0	0	10	110
1986	0	0	94	0	0	13	107
1987	0	0	93	0	0	12	105
1988	0	0	91	0	0	10	101
1989	0	0	88	0	0	9	97
1990	1	0	116	0	0	11	128
1991	1	0	81	0	7	10	99

Brill in Division IIIa							
Year	Belgium	Germany	Denmark	Netherlands	Norway	Sweden	TOTAL
1992	1	0	123	0	7	15	146
1993	2	0	184	0	10	16	212
1994	0	0	191	0	12	19	222
1995	0	0	124	0	13	14	151
1996	0	0	94	0	12	6	112
1997	0	0	83	0	11	12	106
1998	0	0	108	0	10	14	132
1999	0	0	126	0	13	18	157
2000	0	0	112	0	12	17	141
2001	0	0	73	0	13	12	98
2002	0	0	66	0	12	12	90
2003	0	0	99	1	12	16	128
2004	0	0	119	4	15	18	156
2005	0	0	101	3	16	13	133
2006	0	1	105	3	16	15	140
2007	0	1	119	3	15	20	158
2008	0	2	138	1	13	30	184
2009	0	1	98	1	14	33	147
2010	0	1	95	1	9	16	122
2011	0	1	103	0	15	12	131
2012	0	0	89	0	16	15	120
2013	0	0	70	0	9	13	92
2014	0	0	59	0	8	11	79

Brill in Subarea IV									
Year	Belgium	Germany	Denmark	France	UK	Netherlands	Norway	Sweden	TOTAL
1950	34	0	39	0	183	108	1	19	384
1951	23	0	53	0	322	93	1	19	511
1952	21	0	65	0	350	117	3	9	565
1953	23	0	49	0	376	130	0	11	589
1954	19	0	53	0	330	106	14	7	529
1955	23	0	51	0	357	137	3	0	571
1956	28	0	47	0	276	156	0	9	516
1957	32	0	27	0	247	154	0	8	468
1958	43	0	42	0	223	162	0	10	480
1959	41	0	30	0	219	125	0	9	424
1960	55	0	37	0	235	150	1	8	486
1961	102	0	40	0	264	166	0	9	581
1962	97	0	42	0	238	214	0	0	591
1963	79	0	59	0	307	175	0	0	620
1964	79	0	46	0	161	279	0	0	565
1965	71	0	56	0	127	281	0	0	535
1966	100	0	63	0	119	264	0	0	546
1967	138	0	29	0	105	137	0	0	409
1968	152	0	43	0	110	274	0	0	579
1969	145	0	47	0	102	364	0	0	658
1970	114	0	42	0	76	386	0	0	618
1971	187	0	72	0	94	720	0	0	1073
1972	213	0	65	0	51	665	0	0	994
1973	185	0	55	0	39	710	0	0	989
1974	135	0	68	0	44	905	0	0	1152

Brill in Subarea IV									
Year	Belgium	Germany	Denmark	France	UK	Netherlands	Norway	Sweden	TOTAL
1975	164	0	76	13	44	925	0	0	1222
1976	148	0	65	10	45	940	0	0	1208
1977	166	0	88	17	60	1079	0	0	1410
1978	175	0	123	26	84	967	0	0	1375
1979	188	0	154	10	103	908	0	0	1363
1980	129	0	104	8	45	747	0	0	1033
1981	148	0	66	5	42	957	0	0	1218
1982	182	0	53	11	41	1007	0	0	1294
1983	182	0	62	23	28	1153	0	0	1448
1984	190	0	73	30	29	1200	0	0	1522
1985	187	0	71	35	46	1370	0	0	1709
1986	131	0	76	4	46	950	0	0	1207
1987	140	0	50	17	48	715	0	0	970
1988	102	0	33	18	52	880	0	0	1085
1989	112	0	43	9	58	1080	0	0	1302
1990	168	0	139	24	82	480	0	0	893
1991	205	38	145	28	147	1111	8	0	1682
1992	203	59	77	34	218	1196	22	1	1810
1993	291	63	118	38	268	1647	14	0	2439
1994	208	90	109	28	235	1235	11	0	1916
1995	194	67	55	24	145	943	6	0	1434
1996	206	47	64	15	175	732	8	0	1247
1997	129	48	38	1	135	590	16	0	957
1998	160	58	58	11	172	808	16	0	1283
1999	161	51	91	0	156	805	16	0	1280
2000	167	77	93	16	141	998	16	0	1508
2001	182	66	67	12	158	1075	13	0	1573
2002	145	58	52	10	120	907	10	0	1302
2003	145	70	57	9	119	934	12	0	1346
2004	140	66	77	7	168	772	19	0	1249
2005	120	62	89	7	138	716	28	0	1160
2006	105	55	75	9	154	765	12	0	1175
2007	110	47	52	12	156	854	9	0	1240
2008	117	42	86	5	93	650	11	0	1004
2009	109	54	96	8	105	786	4	0	1162
2010	104	75	97	12	136	1072	4	0	1500
2011	101	57	122	13	137	1061	6	0	1497
2012	110	71	126	12	102	1084	7	0	1512
2013	100	63	123	10	117	972	4	0	1389
2014	98	69	96	9	116	811	9	4	1212

Brill in Divisions VII,d,e								
Year	Belgium	Denmark	France	UK	Ireland	Netherlands	XCI	TOTAL
1950	11	0	0	48	0	0	0	59
1951	8	0	0	70	0	0	0	78
1952	6	0	0	66	0	0	0	72
1953	2	0	0	60	0	0	0	62
1954	1	0	0	59	0	0	0	60
1955	4	0	0	57	0	0	0	61
1956	2	0	0	58	0	0	0	60
1957	4	0	0	66	0	0	0	70

Brill in Divisions VIId,e								
Year	Belgium	Denmark	France	UK	Ireland	Netherlands	XCI	TOTAL
1958	2	0	0	65	0	0	0	67
1959	1	0	0	58	0	0	0	59
1960	6	0	0	46	0	0	0	52
1961	1	0	0	46	0	0	0	47
1962	3	0	0	52	0	0	0	55
1963	1	0	0	50	0	0	0	51
1964	0	0	0	60	0	0	0	60
1965	2	0	0	46	0	0	0	48
1966	0	0	0	53	0	0	0	53
1967	1	0	0	66	0	0	0	67
1968	3	0	0	54	0	0	0	57
1969	2	0	121	67	0	0	0	190
1970	10	0	0	49	0	0	0	59
1971	18	0	0	48	0	0	0	66
1972	20	0	0	52	0	3	0	75
1973	20	0	0	70	0	0	0	90
1974	25	0	0	56	0	0	0	81
1975	24	0	55	56	0	0	2	137
1976	41	0	170	72	0	0	2	285
1977	45	0	197	77	0	0	4	323
1978	58	3	227	120	0	0	3	411
1979	55	0	262	140	0	0	2	459
1980	64	2	213	118	3	0	2	402
1981	83	0	271	130	0	0	6	490
1982	105	0	225	149	0	1	7	487
1983	107	0	234	181	0	1	3	526
1984	114	0	226	186	0	0	5	531
1985	94	0	213	177	0	0	10	494
1986	115	0	183	147	0	0	11	456
1987	126	0	216	141	0	0	10	493
1988	112	0	202	133	0	0	5	452
1989	89	0	213	121	0	0	2	425
1990	99	0	249	187	0	0	8	543
1991	81	0	249	140	0	0	0	470
1992	82	0	223	151	0	0	7	463
1993	78	0	256	152	0	0	4	490
1994	88	0	227	170	0	0	5	490
1995	91	0	248	200	1	0	18	558
1996	105	0	240	253	0	0	10	608
1997	107	0	185	198	1	0	10	501
1998	70	0	196	173	0	2	10	451
1999	97	0	0	127	0	3	13	240
2000	164	0	260	232	1	4	17	678
2001	212	0	256	251	0	2	17	738
2002	204	0	268	227	0	1	16	716
2003	217	0	287	238	1	1	15	759
2004	165	0	259	223	1	3	15	666
2005	138	0	267	183	0	2	21	611
2006	180	0	281	170	0	3	15	649
2007	205	0	325	199	0	1	11	741
2008	154	0	225	199	0	2	13	593



Brill in Divisions VIId,e								
Year	Belgium	Denmark	France	UK	Ireland	Netherlands	XCI	TOTAL
2009	131	0	278	171	0	1	10	591
2010	145	0	340	198	0	1	11	695
2011	141	0	277	204	0	0	0	622
2012	121	0	263	232	0	1	0	617
2013	143	0	237	214	0	1	6	601
2014	165	0	243	232	0	1	10	651

### Summary of the assessment

**Table 6.3.2.8** Brill in Subarea IV and Divisions IIIa and VIId,e. Assessment summary.

Year	Landings (tonnes)	Discards (tonnes)	Catch (tonnes)	Biomass index Dutch lpue > 221 kW (kg day <sup>-1</sup> )
2007	2139			32.7
2008	1781			40.4
2009	1900			40.26
2010	2317			49.97
2011	2250			52.39
2012	2249	178	2427	55.52
2013	2082	89	2171	52.89
2014	1942	162	2104	46.3

### 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. 2015a. Advice basis. *In* Report of the ICES Advisory Committee, 2015. ICES Advice 2015, Book 1. In preparation.
- ICES. 2015b. Report of the Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK), 28 April–7 May 2015. ICES CM 2015/ACOM:13.
- STECF. 2014. Evaluation/scoping of management plans – Evaluation of the multi-annual management plan for the North Sea stocks of plaice and sole. Scientific, Technical and Economic Committee for Fisheries (STECF-14-03). Publications Office of the European Union, Luxembourg. EUR 26615 EN, JRC 89797. 57 pp.