

Brill (*Scophthalmus rhombus*) in Subarea 4 and divisions 3.a and 7.d–e (North Sea, Skagerrak and Kattegat, English Channel)

ICES advice on fishing opportunities

ICES advises that when the MSY approach is applied, catches in 2024 should be no more than 2 456 tonnes.

The use of a combined species TAC for brill and turbot prevents effective control of the single-species exploitation rates and could lead to the overexploitation of either species. ICES advises that management should be implemented at the species level and cover the entire stock distribution area (Subarea 4 and divisions 3.a and 7.d–e).

ICES advice on conservation aspects

ICES has not identified any conservation aspects.

Stock development over time

Fishing pressure on the stock is below F_{MSY} and the-stock size is above MSY $B_{trigger}$.

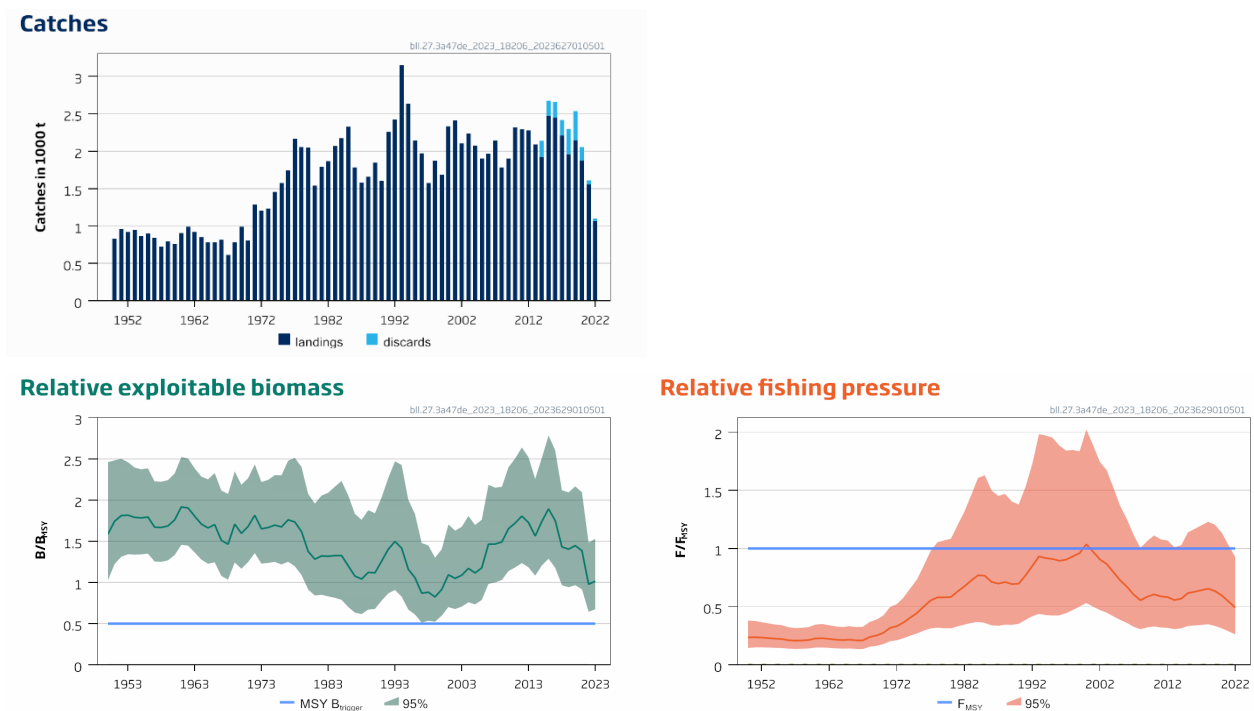


Figure 1 Brill in Subarea 4 and divisions 3.a and 7.d–e. Summary of the stock assessment. Discard data are available since 2014.

Conservation status

ICES is not aware of any information on stock/species-specific conservation status.

Catch scenarios

Table 1 Brill in Subarea 4 and divisions 3.a and 7.d–e. The basis for the catch scenarios.*

Variable	Value	Notes
F_{2023}/F_{MSY}	0.49	Status quo F: F_{2022}/F_{MSY}
B_{2024}/B_{MSY}	1.16	Short-term forecast (STF).

Variable	Value	Notes
Projected landings (2023)	1179	STF of landings under F_{sq} ; in tonnes.
Catch (2023)	1245	Based on discard rate (5.3%; average 2020–2022), in 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.

Table 2 Brill in Subarea 4 and divisions 3.a and 7.d–e. Annual catch scenarios. Weights are in tonnes.

Basis	Total catch (2024)*	Projected landings (2024)	Projected discards (2024)**	Fishing mortality F_{2024}/F_{MSY}	Stock size B_{2025}/B_{MSY}	% B change ***	% Advice change^
ICES advice basis							
MSY approach (35 th percentile of predicted catch distribution under $F = F_{MSY}$)	2456	2326	130	0.91	1.15	-1.40	87
Other scenarios							
F_{MSY}	2657	2516	141	1.00	1.12	-3.8	102
$F = F_{2023}$	1404	1330	74	0.49	1.29	11	6.8
$F = 0$	0	0	0	0	1.48	27.2	-100

* (Projected landings)/(1-average discard rate); average discard rate by weight 2020–2022 = 5.3%.

** Including below minimum size (BMS) landings. Assuming average discard rate by weight 2020–2022 = 5.3%.

*** Biomass 2025 relative to biomass 2024.

^ Advice value for 2024 relative to the advice value for 2023 (1315 tonnes).

The change in advice (+87%) is due to the change of assessment method from the *chr* rule to SPICT.

Basis of the advice

Table 3 Brill in Subarea 4 and divisions 3.a and 7.d–e. The basis of the advice.

Advice basis	MSY approach.
Management plan	The EU multiannual plan (MAP) for stocks in the North Sea (EU, 2018) and adjacent waters applies to bycatches of this stock. Norway and UK have not requested ICES to provide advice based on the EU MAP. The MAP stipulates that when the F_{MSY} ranges are not available, fishing opportunities should be based on the best available scientific advice.

Quality of the assessment

This stock was benchmarked in 2023, leading to a change in assessment method from the *chr* rule (category 3, Method 2.2) to SPICT (category 2; ICES, 2023a). In addition, the previously-used commercial LPUE index, which covered only part of Subarea 4, was replaced with three exploitable biomass survey indices covering the whole stock.

In 2022, several hauls planned for the Q1 UK-BTS, the Q3 UK-BTS, the Q3 German BTS, the Q1 NS-IBTS, and the Dutch SNS were not conducted. The effect of this issue has been investigated and, although one year of missing stations did not have a substantial impact on the current assessment outputs, it may become a problem if the issue persists in the future.

Issues relevant for the advice

Brill is mainly a bycatch species in fisheries for plaice and sole. As such, a change in catch over time may also be influenced by changes in effort levels and targeting behaviour.

ICES (2022) advised that removing the TAC for brill would generate a high risk of the stock being exploited unsustainably. Furthermore, management of brill and turbot under a combined species TAC may hinder effective management of the exploitation rates of the individual species. Single-species TAC management, which covers the entire stock area, would be more appropriate.

The surveys show a high proportion of brill abundance in Division 3.a. Thus, the increase in catch advice is to a great extent related to the high abundance in Division 3.a. However, the combined TAC for Brill and Turbot only covers Division 2.a and Subarea 4.

Reference points

Table 4 Brill in Subarea 4 and divisions 3.a and 7.d–e. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY B_{trigger}	$\frac{B}{B_{\text{MSY}}} = 0.5^*$	Relative value from the SPiCT model. B_{MSY} is estimated directly from the SPiCT assessment model and changes when the assessment is updated.	ICES (2023a)
	F_{MSY}	$\frac{F}{F_{\text{MSY}}} = 1^*$	Relative value from the SPiCT model. F_{MSY} is estimated directly from the SPiCT assessment model and changes when the assessment is updated.	ICES (2023a)
Precautionary approach	B_{lim}	Not defined		
	B_{pa}	Not defined		
	F_{lim}	Not defined		
	F_{pa}	Not defined		
Management plan	SSB_{mgt}	Not defined		
	F_{mgt}	Not defined		

* No reference points are defined for this stock in terms of absolute values. The SPiCT-estimated values of the ratios F/F_{MSY} and B/B_{MSY} are used to estimate stock status relative to the MSY reference points.

Basis of the assessment

Table 5 Brill in Subarea 4 and divisions 3.a and 7.d–e. Basis of assessment and advice.

ICES stock data category	2 (ICES, 2023b)
Assessment type	SPiCT assessment (; ICES, 2023b; Pedersen and Berg, 2017).
Input data	Commercial landings and three exploitable biomass indices. The first two indices are modelled together, representing the first and second semesters, based on data from the beam trawl surveys (BTS; Q1 [UK: B2732], Q3 [DE, NL, BE and UK: B2453] and Q4 [UK: B3738]), the Demersal Young Fish Surveys (DYFS; Q3-4 [BE, NL, DE: B7567]), the Dutch Sole Net Survey (SNS; Q3 [B3499]), the North Sea International Bottom Trawl Survey (NS-IBTS; Q1 [G1022] and Q3 [G2829]), the Baltic International Trawl Survey (BITS; Q1 [G2916] and Q4 [G8863]), and the French Groundfish Survey (FR-GFS; Q4 [G3425]) covering Subarea 4 and Divisions 3.a and 7.d–e between 1999 and 2022. The third index is based on the NS-IBTS Q1 [G1022] between 1983 and 1998.
Discards and bycatch	Discards are estimated around 5.3% (average 2020–2022). Discards are available from 2014 onwards. In 2022, discards are provided for 59% of the landings. Discards are not included in the assessment but are used to provide advice.
Indicators	None
Other information	Benchmarked in 2023 (ICES, 2023a)
Working group	Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)

History of the advice, catch, and management

Table 6 Brill in Subarea 4 and divisions 3.a and 7.d–e. ICES advice, TACs, ICES catch estimates, and official landings. Weights are in tonnes.

Year	ICES advice	Catch corresponding to advice	Agreed TAC for turbot and brill (combined) in Subarea 4 and Division 2.a*	Official landings in Subarea 4 and Division 2.a (turbot and brill)	Official landings in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated landings in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated discards in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated catch in Subarea 4 and divisions 3.a and 7.d–e (brill)
2000		-	9000	5534	2327			
2001		-	9000	5674	2409			
2002		-	6750	5052	2108			
2003		-	5738	4721	2233			
2004		-	4877	4568	2071			
2005		-	4550	4355	1904			
2006		-	4323	4157	1963			
2007		-	4323	4754	2142			
2008		-	5263	4015	1781			
2009		-	5263	4258	1902			
2010		-	5263	4201	2321			
2011		-	4642	4312	2292			
2012	No increase in catch	-	4642	4529	2276			
2013	No new advice, same as for 2012	-	4642	4480	2088			
2014	No more than 20% increase in recent average catch (2010–2012)	≤ 2727	4642	4132	1978	1920	217	2137
2015	No new advice, same as for 2014	≤ 2727	4642	4677	2537	2470	207	2677
2016	Precautionary approach (decrease catches by 6%)	≤ 2756	4488	4953	2415	2444	216	2660
2017	Precautionary approach (same advised catch value as given for 2016)	≤ 2756	5924	5106	2292	2207	210	2418
2018	Precautionary approach (increase catches by 15%)	≤ 3170	7102	4422	2027	1956	343	2299
2019	Precautionary approach (same advised catch value as given for 2018)	≤ 3170	8122	4514	2186	2147	392^	2539^

Year	ICES advice	Catch corresponding to advice	Agreed TAC for turbot and brill (combined) in Subarea 4 and Division 2.a*	Official landings in Subarea 4 and Division 2.a (turbot and brill)	Official landings in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated landings in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated discards in Subarea 4 and divisions 3.a and 7.d–e (brill)	ICES estimated catch in Subarea 4 and divisions 3.a and 7.d–e (brill)
2020	Precautionary approach	≤ 2559	6498	4389	1903	1872^^	182^	2055^
2021	Precautionary approach	≤ 2047***	5848	3584**	1623**	1550^^	62^	1612^
2022	Precautionary approach	≤ 1878	5487	2194**	1083**	1066^^	35^	1101^
2023	MSY approach	≤ 1315	3747					
2024	MSY approach	≤ 2456						

* A combined TAC for brill and turbot in EU waters of Subarea 4 and Division 2.a. up to 2020 and in United Kingdom and EU waters of 4; United Kingdom waters of 2.a thereafter.

** Preliminary.

*** The advice of ≤ 2559 tonnes for 2021 (originally drafted in 2019) was updated in 2020.

^ Includes estimated BMS landings.

^^ Includes industrial bycatch (2 tonnes in 2020; 0.601 tonnes in 2021 and 0.05 tonnes in 2022).

History of the catch and landings

Table 7 Brill in Subarea 4 and divisions 3.a and 7.d–e. Catch distribution by fleet in 2022 as estimated by ICES.

Catch	Landings				Discards
	Beam trawls 50.3%	Otter trawls 27.6%	Trammel/gillnets 18.8%	Other gears 3.3%	
1101 tonnes	1066 tonnes				35 tonnes

Table 8 Brill in Subarea 4 and divisions 3.a and 7.d–e. History of commercial landings; the official landings and BMS by area for each country participating in the fishery. Weights are in tonnes.

Brill in Division 3.a								
Year	Belgium	Germany	Denmark	Netherlands	Norway	Sweden	BMS landings	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
1992	1	0	123	0	7	15		146
1993	2	0	184	0	10	16		212

Brill in Division 3.a								
Year	Belgium	Germany	Denmark	Netherlands	Norway	Sweden	BMS landings	Total
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	14		140
2007	0	1	119	3	15	22		160
2008	0	2	138	1	13	28		181
2009	0	1	98	1	14	32		146
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
2015	0	0	104	11	8	21		145
2016	0	0	125	7	8	28		168
2017	0	0	131	4	8	27		170
2018	0	0	90	9	9	17	< 1	125
2019	0	1	93	26	3	15	< 1	139
2020	0	1	112	29	3	17	< 1	162
2021*	0	2	101	20	3	16	< 1	142
2022*	0	1	57	7	2	9	< 1	77

* Preliminary.

Brill in Subarea 4										
Year	Belgium	Germany	Denmark	France	UK	Netherlands	Norway	Sweden	BMS landings	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

Brill in Subarea 4										
Year	Belgium	Germany	Denmark	France	UK	Netherlands	Norway	Sweden	BMS landings	Total
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
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	na	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		1239
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		1499
2011	101	57	122	13	137	1061	6	0		1496
2012	110	71	126	12	122	1084	7	0		1532
2013	101	63	123	10	118	972	4	0		1390
2014	99	69	96	9	117	857	9	0		1255
2015	154	115	122	7	136	1159	1	0		1695
2016	175	90	131	8	156	965	1	0		1526
2017	138	76	121	7	116	1000	2	0		1460
2018	98	80	96	6	100	805	2	0	< 1	1188
2019	116	132	90	5	112	932	1	0	2	1387
2020	84	99	95	2	95	813	1	0	< 1	1189

Brill in Subarea 4										
Year	Belgium	Germany	Denmark	France	UK	Netherlands	Norway	Sweden	BMS landings	Total
2021*	68	59	110	1	66	573	1	0	< 1	932
2022*	31	26	88	1	48	294	1	0	< 1	489

* French landings of brill in 1999 were provided as a total for all ICES areas (373 t) and not by ICES area.

** Preliminary.

Brill in divisions 7.d–e									
Year	Belgium	Denmark	France	UK	Ireland	Netherlands	Channel Islands (UK)	BMS landings	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
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

Brill in divisions 7.d–e									
Year	Belgium	Denmark	France	UK	Ireland	Netherlands	Channel Islands (UK)	BMS landings	Total
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	na	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	14		648
2007	205	0	325	199	0	1	13		743
2008	155	0	224	199	0	2	16		595
2009	131	0	278	171	0	1	13		594
2010	145	0	340	198	0	1	15		700
2011	141	0	304	202	0	0	18		665
2012	120	0	263	228	0	1	12		624
2013	142	0	238	213	0	1	11		605
2014	166	0	245	219	0	1	13		645
2015	162	0	278	248	0	2	9		698
2016	143	0	286	284	0	1	6		721
2017	135	0	276	246	0	2	3		663
2018	128	0	280	248	1	2	55		714
2019	103	0	287	262	0	3	5	< 1	660
2020	91	0	209	247	0	2	2	< 1	551
2021**	84	0	234	228	0	3	0	< 1	549
2022**	82	0	229	203	0	2	0	< 1	517

* French landings of brill in 1999 were provided as a total for all ICES areas (373 t) and not by ICES area.

** Preliminary.

Summary of the assessment

Table 9 Brill in Subarea 4 and divisions 3.a and 7.d–e. Assessment summary. Weights are in tonnes. The relative exploitable biomass, fishing pressure, and their corresponding 95% confidence bounds.

Year	Relative exploitable biomass			Landings*	Discards**	Relative fishing pressure		
	Low	B/B _{MSY}	High			Low	F/F _{MSY}	High
1950	1.02	1.59	2.5	827		0.145	0.24	0.38
1951	1.22	1.74	2.5	963		0.15	0.24	0.38
1952	1.31	1.81	2.5	922		0.15	0.23	0.37
1953	1.34	1.82	2.5	947		0.148	0.23	0.36
1954	1.34	1.79	2.4	867		0.146	0.23	0.35
1955	1.34	1.78	2.4	896		0.145	0.22	0.34
1956	1.35	1.79	2.4	842		0.139	0.21	0.32
1957	1.25	1.67	2.2	727		0.136	0.21	0.32
1958	1.25	1.67	2.2	793		0.138	0.21	0.32
1959	1.27	1.69	2.2	760		0.141	0.21	0.33
1960	1.33	1.76	2.3	907		0.148	0.23	0.35
1961	1.46	1.92	2.5	987		0.149	0.23	0.35
1962	1.45	1.90	2.5	923		0.146	0.22	0.34
1963	1.36	1.80	2.4	847		0.142	0.22	0.33
1964	1.28	1.71	2.3	780		0.139	0.21	0.33
1965	1.23	1.66	2.3	778		0.141	0.22	0.33

Year	Relative exploitable biomass			Landings*	Discards**	Relative fishing pressure		
	Low	B/B _{MSY}	High			Low	F/F _{MSY}	High
1966	1.24	1.70	2.3	813		0.136	0.21	0.33
1967	1.08	1.51	2.1	611		0.136	0.21	0.33
1968	1.03	1.46	2.1	779		0.155	0.24	0.37
1969	1.24	1.71	2.3	990		0.163	0.25	0.39
1970	1.17	1.60	2.2	810		0.178	0.27	0.42
1971	1.25	1.68	2.3	1291		0.2	0.32	0.5
1972	1.36	1.82	2.4	1207		0.21	0.33	0.52
1973	1.23	1.65	2.2	1232		0.23	0.36	0.58
1974	1.24	1.67	2.2	1454		0.25	0.41	0.66
1975	1.25	1.70	2.3	1576		0.27	0.45	0.74
1976	1.22	1.67	2.3	1741		0.29	0.5	0.86
1977	1.25	1.76	2.5	2167		0.31	0.55	0.98
1978	1.20	1.73	2.5	2053		0.32	0.58	1.05
1979	1.09	1.62	2.4	2046		0.31	0.58	1.07
1980	0.91	1.38	2.1	1542		0.31	0.58	1.08
1981	0.84	1.28	1.96	1787		0.33	0.63	1.2
1982	0.85	1.32	2.1	1865		0.35	0.68	1.32
1983	0.83	1.32	2.1	2072		0.36	0.73	1.46
1984	0.81	1.33	2.2	2171		0.37	0.77	1.61
1985	0.79	1.33	2.2	2324		0.36	0.77	1.63
1986	0.7	1.20	2.1	1786		0.34	0.71	1.5
1987	0.63	1.08	1.83	1583		0.34	0.7	1.45
1988	0.62	1.04	1.76	1656		0.35	0.71	1.47
1989	0.67	1.12	1.88	1849		0.34	0.69	1.4
1990	0.68	1.12	1.84	1601		0.35	0.7	1.38
1991	0.78	1.26	2	2255		0.39	0.77	1.53
1992	0.87	1.40	2.3	2427		0.42	0.85	1.73
1993	0.91	1.50	2.5	3147		0.44	0.93	1.98
1994	0.83	1.42	2.4	2634		0.43	0.92	1.97
1995	0.67	1.16	2	2147		0.42	0.91	1.95
1996	0.61	1.06	1.83	1974		0.42	0.89	1.89
1997	0.51	0.87	1.48	1574		0.44	0.9	1.84
1998	0.54	0.88	1.45	1872		0.47	0.93	1.85
1999	0.52	0.82	1.3	1685		0.5	0.96	1.84
2000	0.6	0.92	1.4	2334		0.53	1.04	2
2001	0.7	1.09	1.71	2411		0.5	0.97	1.89
2002	0.68	1.05	1.63	2107		0.47	0.91	1.74
2003	0.71	1.09	1.68	2236		0.45	0.87	1.68
2004	0.76	1.17	1.81	2073		0.42	0.8	1.52
2005	0.73	1.12	1.70	1904		0.39	0.73	1.37
2006	0.79	1.18	1.76	1962		0.36	0.67	1.25
2007	0.98	1.47	2.2	2142		0.33	0.6	1.11
2008	1.00	1.47	2.2	1781		0.31	0.55	1.01
2009	1.03	1.49	2.2	1902		0.32	0.59	1.07
2010	1.14	1.65	2.4	2321		0.33	0.61	1.11
2011	1.18	1.72	2.5	2292		0.32	0.59	1.08
2012	1.23	1.81	2.6	2276		0.32	0.58	1.07
2013	1.18	1.73	2.5	2088		0.31	0.56	1.01
2014	1.08	1.56	2.3	1920	217	0.31	0.57	1.03
2015	1.21	1.74	2.5	2470	207	0.33	0.62	1.14
2016	1.29	1.89	2.8	2444	216	0.34	0.63	1.17
2017	1.18	1.75	2.6	2207	210	0.34	0.64	1.2
2018	0.97	1.43	2.1	1956	343	0.35	0.65	1.23
2019	0.94	1.40	2.1	2147	392	0.33	0.63	1.2
2020	0.97	1.45	2.2	1872	182	0.31	0.6	1.14
2021	0.92	1.39	2.1	1550	62	0.29	0.54	1.03
2022	0.64	0.98	1.49	1066	35	0.26	0.49	0.93

Year	Relative exploitable biomass			Landings*	Discards**	Relative fishing pressure		
	Low	B/B _{MSY}	High			Low	F/F _{MSY}	High
2023	0.67	1.02	1.53					

* Official landings statistics 1950–2013, ICES estimated landings 2014–2022.

** Since 2019, discards include estimated BMS landings. However, discards are not used in the model.

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