

3.13.4

Tusk (*Brosme brosme*)

State of the stock/exploitation: The state of the stock is highly uncertain due to the lack of relevant CPUE data for the major fisheries in the most recent years. Previously presented mortality estimates from several areas for the last decade were high. The fleet and the catches have increased and the fishing areas and practices are the same, therefore it is unlikely that the exploitation rate has decreased in recent years. The stock may therefore remain outside safe biological limits. In 2000, it was concluded that the exploitable stock biomass would appear to be less than 20% of virgin biomass and fishing mortality was relatively high. CPUE series from the fishery and groundfish survey in Division Va presented in 2002 suggests a pronounced decline in recent years also in that area (Figures 3.13.4.1–2).

Advice on management: ICES recommends that the overall fishing effort be reduced by 30%.

Relevant factors to be considered in management: Tusk is more vulnerable to over-exploitation than ling, due to a slower growth rate and high age at maturity. Most of the tusk landings are by-catch in ling fisheries and therefore the reductions recommended for that species should facilitate the advised reductions for tusk.

Landings are mainly by-catches in longline fisheries directed at ling and blue ling in Divisions IIa, Va, Vb and VIa. In Division Vb tusk is also taken as a by-catch in trawl fisheries.

Comparison with previous assessment and advice: No comparison of assessments was possible. In Division Va, the survey index from the Icelandic groundfish survey suggests a pronounced declining abundance.

Elaboration and special comment: Landings by Subarea/Division and nation are given in Table 3.13.4.1.

Ling (*Molva molva*) and tusk (*Brosme brosme*) are not generally regarded as “true” deep-water fish species although they are found in waters on the upper continental slope between the depths of ca. 200 m–600 m. However, this depth range has some species, including ling and tusk, that are also found in waters less than 200 m deep on the outer continental shelf. Other commercial fish species caught in this depth range that are also found commonly in shallower shelf-sea waters include anglerfish (*Lophius* spp.) and megrim (*Lepidorhombus* spp.).

For the quota-year starting 1 September 2001 and ending 31 August 2002 the agreed national TAC by Iceland is 4 500 t in Division Va.

Source of information: Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources, 4–10 April 2002 (ICES CM 2002/ACFM:16).

Catch data (Table 3.13.4.1):

Year	ACFM Catch
1988	34
1989	42
1990	40
1991	41
1992	37
1993	35
1994	29
1995	28
1996	29
1997	23
1998	29
1999	33
2000*	31
2001*	27

*Preliminary. Weights in '000 t.

Tusk (*Brosme brosme*)

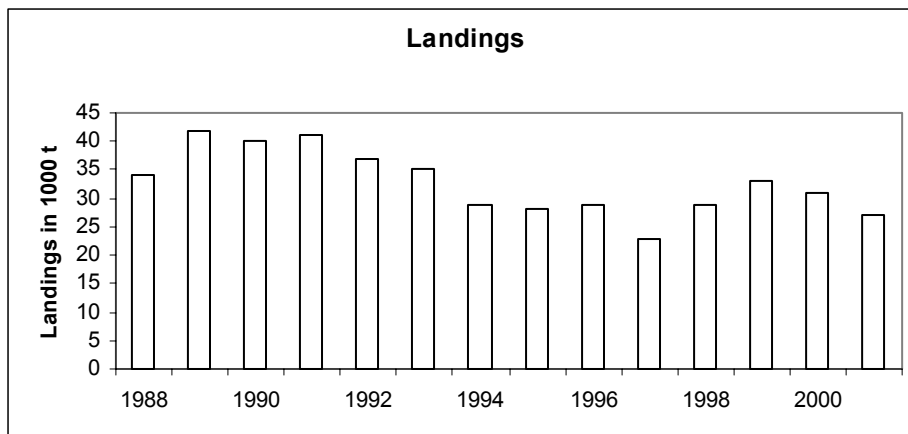


Table 3.13.4.1 Tusk (*Brosme brosme*). Working Group estimates of landings (tonnes).**Tusk in Subarea I**

Year	Norway	Russia	Faroes	Iceland	Total
1996	587	-	-	-	587
1997	665	-	-	-	665
1998	805	-	-	-	805
1999	907	-	-	-	907
2000*	738	43	1	16	798
2001*	595	6	-	13	614

* Preliminary.

Tusk in Division IIa

Year	Faroes	France	Germany	Greenland	Norway	E & W	Scotland	Russia	Ireland	Total
1988	115	32	13	-	14,241	2	-	-	-	14,403
1989	75	55	10	-	19,206	4	-	-	-	19,350
1990	153	63	13	-	18,387	12	+	-	-	18,628
1991	38	32	6	-	18,227	3	+	-	-	18,306
1992	33	21	2	-	15,908	10	-	-	-	15,974
1993	-	23	2	11	17,545	3	+	-	-	17,584
1994	281	14	2	-	12,266	3	-	-	-	12,566
1995	77	16	3	20	11,271	1	-	-	-	11,388
1996	0	12	5	-	12,029	1	-	-	-	12,047
1997	1	21	1	-	8,642	2	+	-	-	8,667
1998	-	9	1	-	14,463	1	1	-	-	14,475
1999	-	7	+	-	16,213	-	2	28	-	16,250
2000*	-	8	1	-	13,120	3	2	58	-	13,192
2001*	-	15	+	-	11,200	1	3	66	5	11,290

* Preliminary.

Tusk in Division IIb

Year	Norway	E & W	Russia	Total
1988	-	-	-	0
1989	-	-	-	0
1990	-	-	-	0
1991	-	-	-	0
1992	-	-	-	0
1993	-	1	-	1
1994	-	-	-	0
1995	229	-	-	229
1996	161	-	-	161
1997	92	2	-	94
1998	73	+	-	73
1999	26	-	4	26
2000*	15	-	3	18
2001*	141	-	5	146

* Preliminary.

Continued ...

Table 3.13.4.1 Continued

Tusk in Division IIIa

Year	Denmark	Norway	Sweden	Total
1988	8	51	2	61
1989	18	71	4	93
1990	9	45	6	60
1991	14	43	27	84
1992	24	46	15	85
1993	19	48	12	79
1994	6	33	12	51
1995	4	33	5	42
1996	6	32	6	44
1997	3	25	3	31
1998	2	19	-	21
1999	4	25	-	29
2000*	8	23	5	36
2001*	10	41	-	51

*Preliminary.

Tusk in Division IVa

Year	Denmark	Faroes	France	Germany	Norway	Sweden ⁽¹⁾	E & W	N.I.	Scotland	Ireland	Total
1988	83	1	201	62	3,998	-	12	-	72	-	4,429
1989	86	1	148	53	6,050	+	18	+	62	-	6,418
1990	136	1	144	48	3,838	1	29	-	57	-	4,254
1991	142	12	212	47	4,008	1	26	-	89	-	4,537
1992	169	-	119	42	4,435	2	34	-	131	-	4,932
1993	102	4	82	29	4,768	+	9	-	147	-	5,141
1994	82	4	86	27	3,001	+	24	-	151	-	3,375
1995	81	6	68	24	2,988	-	10	-	171	-	3,348
1996	120	8	49	47	2,970	-	11	-	164	-	3,369
1997	189	0	47	19	1,763	+	16	-	238	-	2,272
1998	114	3	38	12	2,943	-	11	-	266	-	3,387
1999	165	7	44	10	1,983	-	12	-	213	1	2,435
2000*	208	+	32	10	2,651	2	12	-	343	1	3,259
2001*	258	-	26	8	2,443	-	10	-	343	1	3,089

* Preliminary. ⁽¹⁾ Includes IVb 1988–1993.

Tusk in Division IVb

Year	Denmark	France	Norway	Germany	E & W	Scotland	Total
1988	-	n/a	-	-	-	-	-
1989	-	3	-	-	1	-	4
1990	-	5	-	-	-	-	5
1991	-	2	-	-	-	-	2
1992	10	1	-	-	1	-	12
1993	13	1	-	-	-	-	14
1994	4	1	-	-	2	-	7
1995	4	-	5	1	3	2	15
1996	134 ⁽¹⁾	-	21	4	3	1	163
1997	6	1	24	2	2	3	38
1998	4	0	55	1	3	3	66
1999	8	-	21	1	1	3	34
2000*	8	-	106	+	-	2	116
2001*	6	-	45 ⁽¹⁾	1	1	3	56

* Preliminary. ⁽¹⁾ Includes IVc.

Continued ...

Table 3.13.4.1 Continued

Tusk in Division Va

Year	Faroes	Germany	Iceland	Norway	Scotland	E & W	Total
1988	3,757	-	3,078	20	-	-	6,855
1989	3,908	-	3,143	10	-	-	7,061
1990	2,475	-	4,816	-	-	-	7,291
1991	2,286	-	6,446	-	-	-	8,732
1992	1,567	-	6,442	-	-	-	8,009
1993	1,329	-	4,746	-	-	-	6,075
1994	1,212	-	4,612	-	-	-	5,824
1995	979	1	5,245	-	-	-	6,225
1996	872	1	5,226	3	-	-	6,102
1997	575	-	4,819	-	-	-	5,394
1998	1,052	1	4,118	0	-	-	5,171
1999	1,075	2	5,795	391	1	-	7,264
2000*	1,302	+	4,714	374	+	1	6,391
2001*	1,049	1	3,407	285	+	1	4,743

*Preliminary.

Tusk in Subdivision Vb₁

Year	Denmark	Faroes	France	Germany	Norway	E & W	Scotland ⁽¹⁾	Russia	Total
1988	+	2,827	81	8	1,143	-	-	-	4,059
1989	-	1,828	64	2	1,828	-	-	-	3,722
1990	-	3,065	66	26	2,045	-	-	-	5,202
1991	-	3,829	19	1	1,321	-	-	-	5,170
1992	-	2,796	11	2	1,590	-	-	-	4,399
1993	-	1,647	9	2	1,202	2	-	-	2,862
1994	-	2,649	8	1 ⁽²⁾	747	2	-	-	3,407
1995	-	3,059	16	1 ⁽²⁾	270	1	-	-	3,347
1996	-	1,636	8	1	1,083	-	-	-	2,728
1997	-	1,849	11	+	869	-	13	-	2,742
1998	-	1,272	20	-	753	1	27	-	2,073
1999	-	1,956	27	1	1,522	-	11 ⁽³⁾	-	3,517
2000*	-	1,316	13	1	1,191	1	11 ⁽³⁾	1	2,534
2001*	-	1,779	13	1	1,572	-	20 ⁽³⁾	-	3,385

* Preliminary. ⁽¹⁾ Included in Vb₂ until 1996. ⁽²⁾ Includes Vb₂. ⁽³⁾ Reported as Vb.

Tusk in Subdivision Vb₂

Year	Faroes	Norway	E & W	Scotland ⁽¹⁾	Total
1988	545	1,061	-	+	1,606
1989	163	1,237	-	+	1,400
1990	128	851	-	+	979
1991	375	721	-	+	1,096
1992	541	450	-	1	992
1993	292	285	-	+	577
1994	445	462	+	2	909
1995	225	404	⁽²⁾	2	631
1996	46	536	-	-	582
1997	157	420	-	-	577
1998	107	530	-	-	637
1999	132	315	-	-	447
2000*	108	333	-	-	441
2001*	150	469	-	-	619

* Preliminary. ⁽¹⁾ Includes Vb₁. ⁽²⁾ See Vb₁.

Continued ...

Table 3.13.4.1 Continued

Tusk in Division VIa

Year	Denmark	Faroes	France ⁽¹⁾	Germany	Ireland	Norway	E & W	N.I.	Scotland	Spain	Total
1988	-	-	766	1	-	1,310	30	-	13	-	2,120
1989	+	6	694	3	2	1,583	3	-	6	-	2,297
1990	-	9	723	+	-	1,506	7	+	11	-	2,256
1991	-	5	514	+	-	998	9	+	17	-	1,543
1992	-	-	532	+	-	1,124	5	-	21	-	1,682
1993	-	-	400	4	3	783	2	+	31	-	1,223
1994	+	-	345	6	1	865	5	-	40	-	1,262
1995	-	0	332	+	33	990	1	-	79	-	1,435
1996	-	0	368	1	5	890	1	-	126	-	1,391
1997	-	0	359	+	3	750	1	-	137	11	1,261
1998	-	-	395	+	-	715	-	-	163	8	1,281
1999	-	-	193	+	3	113	1	-	182	47	539
2000*	-	-	238	+	20	1,327	8	-	231	75	1,899
2001*	-	-	162	+	31	1,201	8	-	279	33	1,714

* Preliminary. ⁽¹⁾ Not allocated by divisions before 1993.

Tusk in Division VIb

Year	Faroes	France	Germany	Ireland	Iceland	Norway	E & W	N.I.	Scotland	Russia	Total
1988	217	-	-	-	-	601	8	-	34	-	860
1989	41	1	-	-	-	1,537	2	-	12	-	1,593
1990	6	3	-	-	-	738	2	+	19	-	768
1991	-	7	+	5	-	1,068	3	-	25	-	1,108
1992	63	2	+	5	-	763	3	1	30	-	867
1993	12	3	+	32	-	899	3	+	54	-	1,003
1994	70	1	+	30	-	1,673	6	-	66	-	1,846
1995	79	1	+	33	-	1,415	1	-	35	-	1,564
1996	0	1	-	30	-	836	3	-	69	-	939
1997	1	1	-	23	-	359	2	-	90	-	476
1998	-	1	-	24	18	630	9	-	233	-	915
1999	-	-	-	26	-	591	5	-	331	-	953
2000*	-	2	-	22	-	1,933	14	-	372	1	2,344
2001*	-	1	-	31	-	476	10	-	157	5	680

* Preliminary.

Tusk in Division VIIa

Year	France	E & W	Scotland	Total
1988	n/a	-	+	+
1989	2	-	+	2
1990	4	+	+	4
1991	1	-	1	2
1992	1	+	2	3
1993	-	+	+	+
1994	-	-	+	+
1995	-	-	1	1
1996	-	-	-	-
1997	-	-	1	1
1998	-	-	1	1
1999	-	-	+	+
2000*	-	-	+	+
2001*	-	-	1	+

* Preliminary.

Continued ...

Table 3.13.4.1 Continued**Tusk in Divisions VIIb,c**

Year	France	Ireland	Norway	E & W	N.I.	Scotland	Total
1988	n/a	-	12	5	-	+	17
1989	17	-	91	-	-	-	108
1990	11	3	138	1	-	2	155
1991	11	7	30	2	1	1	52
1992	6	8	167	33	1	3	218
1993	6	15	70	17	+	12	120
1994	5	9	63	9	-	8	94
1995	3	20	18	6	-	1	48
1996	4	11	38	4	-	1	58
1997	4	8	61	1	-	1	75
1998	3	-	28	-	-	2	33
1999	-	16	130	-	-	1	147
2000*	3	58	88	12	-	3	164
2001*	3	54	177	4	-	25	263

*Preliminary.

Tusk in Divisions VIIg-k

Year	France	Germany	Ireland	Norway	E & W	Scotland	Spain	Total
1988	n/a	-	-	-	5	-	-	5
1989	3	-	-	82	1	-	-	86
1990	6	-	-	27	0	+	-	33
1991	4	-	-	-	8	2	-	14
1992	9	-	-	-	38	-	-	47
1993	5	-	17	-	7	3	-	32
1994	4	-	12	-	12	3	-	31
1995	3	-	8	-	18	8	-	37
1996	3	-	20	-	3	3	-	29
1997	4	4	11	-	-	+	0	19
1998	2	3	4	-	-	1	0	10
1999	1	1	-	-	-	+	6	8
2000*	3	-	5	-	-	+	3	11
2001*	3	-	-	9	-	+	2	14

* Preliminary.

Tusk in Division VIIa

Year	E & W	France	Total
1988	1	n/a	1
1989	-	-	-
1990	-	-	-
1991	-	-	-
1992	-	-	-
1993	-	-	-
1994	-	-	-
1995	-	-	-
1996	-	-	-
1997	+	+	+
1998	-	1	1
1999	-	-	0
2000*	-	-	-
2001*	-	-	-

* Preliminary.

Continued ...

Table 3.13.4.1 Continued**Tusk in Subarea XII**

Year	Faroes	France	Iceland	Norway	Scotland	Total
1988		1				1
1989		1				1
1990		0				0
1991		1				1
1992		1				1
1993		12	+			12
1994		1	+			1
1995	8	-	10			18
1996	7	-	9	142		158
1997	11	-	+	19		30
1998		1		-		1
1999		1		+	1	1
2000*				5	+	5
2001*				51	+	51

*Preliminary.

Tusk in Division XIVa

Year	Germany	Norway	Total
1988	2	-	2
1989	1	-	1
1990	2	-	2
1991	2	-	2
1992	+	-	+
1993	+	-	+
1994	-	-	-
1995	-	-	-
1996	-	-	-
1997	-	-	-
1998	-	-	-
1999	-	+	+
2000*	-	-	-
2001*	-	0	0

* Preliminary.

Tusk in Division XIVb

Year	Faroes	Iceland	Norway	E & W	Total
1988	-		-	-	-
1989	19	3	-	-	22
1990	13	10	7	-	30
1991	-	64	68	1	133
1992	-	82	120	+	202
1993	-	27	53	+	80
1994	-	9	16	+	25
1995	-	57	30	+	87
1996	-	139	142	-	281
1997	-	10	108	-	118
1998	1	-	14	-	15
1999	-	n/a	9	-	9
2000*	-	-	11	-	11
2001*	-	-	69	-	69

*Preliminary.

Continued ...

Table 3.13.4.1 Continued

TUSK - Total landings by area/division and grand total

Year	I	IIa	IIb	III	IVa	IVb	Va	Vb ₁	Vb ₂	VIa	VIb	VIIa	VIIb,c	VIIg-k	VIIIa	XII	XIVa	XIVb	Total
1988	-	14403	0	61	4429	0	6855	4059	1606	2120	860	-	17	5	1	1	2	0	34,419
1989	-	19350	0	93	6418	4	7061	3722	1400	2297	1593	2	108	86	-	1	1	22	42,158
1990	-	18628	0	60	4254	5	7291	5202	979	2256	768	4	155	33	-	0	2	30	39,667
1991	-	18306	0	84	4537	2	8732	5170	1096	1543	1108	2	52	14	-	1	2	133	40,782
1992	-	15974	0	85	4932	12	8009	4399	992	1682	867	3	218	47	-	1	-	202	37,423
1993	-	17584	1	79	5141	14	6075	2862	577	1223	1003	-	120	32	-	12	-	80	34,803
1994	-	12566	0	51	3375	7	5824	3407	909	1262	1846	-	94	31	-	1	-	25	29,398
1995	-	11388	229	42	3348	15	6225	3347	631	1435	1564	1	48	37	-	18	-	87	28,415
1996	587	12047	161	44	3369	163	6102	2728	582	1391	939	-	58	29	-	158	-	281	28,639
1997	665	8667	94	31	2272	38	5394	2742	577	1261	476	1	75	19	-	30	-	118	22,460
1998	805	14475	73	21	3387	66	5171	2073	637	1281	915	1	33	10	1	1	-	15	28,965
1999	907	16250	26	29	2435	34	7264	3517	447	539	953	-	147	15	0	1	-	9	32,573
2000*	798	13192	18	36	3259	116	6391	2534	441	1899	2344	-	164	8	-	5	-	11	31,216
2001*	614	11290	146	51	3089	56	4743	3385	619	1714	680	1	263	11	-	51	-	69	26,782

* Preliminary

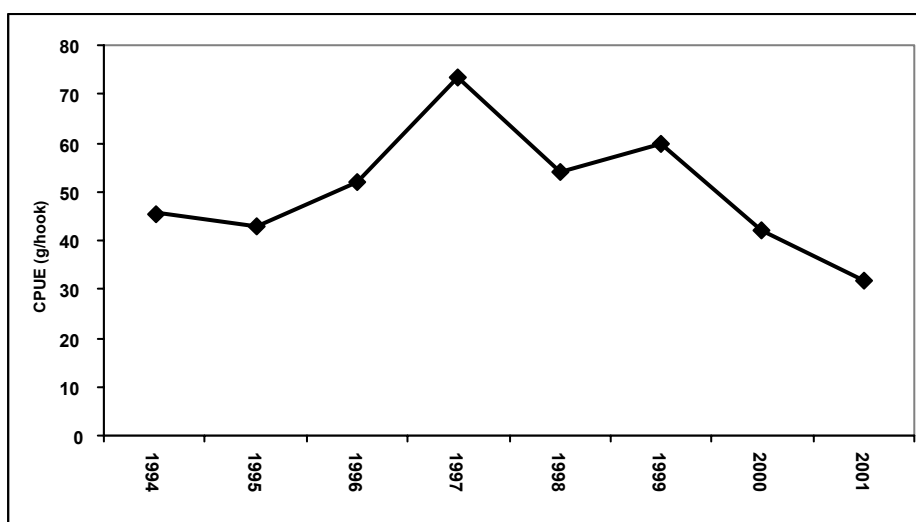


Figure 3.13.4.1. Tusk CPUE from Icelandic longline fishery.

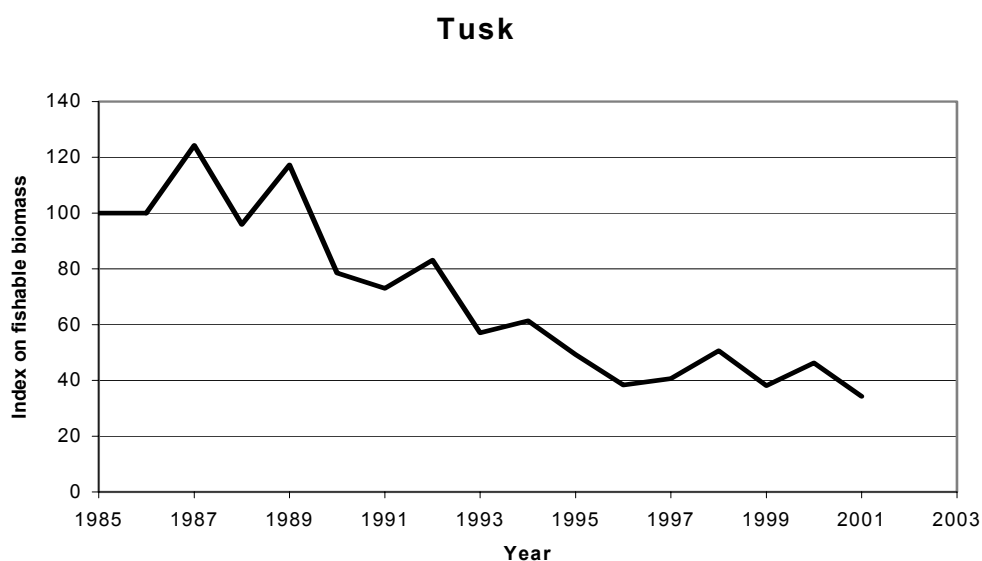


Figure 3.13.4.2 Tusk. Index on fishable biomass calculated from the Icelandic groundfish survey at the Icelandic shelf.