

ECOREGION **Widely distributed and migratory stocks**
STOCK **Tusk (*Brosme brosme*) in Division Va and Subarea XIV**

Advice Summary for 2011

ICES advises that catches should be less than 6000 t.

Stock status

Fishing mortality	2007	2008	2009
F_{MSY}	Unknown	Unknown	Unknown
F_{PA}/F_{lim}	Unknown	Unknown	Unknown
Spawning Stock Biomass (SSB)	2008	2009	2010
$MSY B_{trigger}$	Unknown	Unknown	Unknown
B_{PA}/B_{lim}	Unknown	Unknown	Unknown

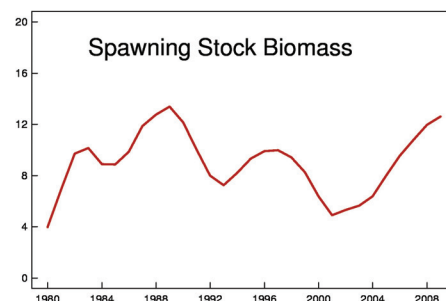
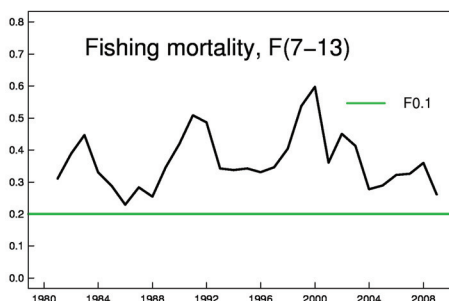
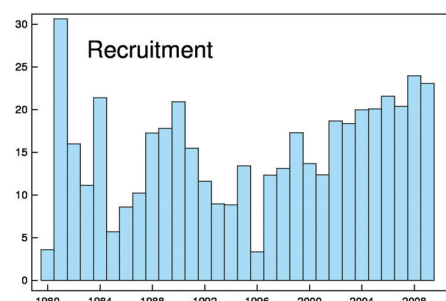
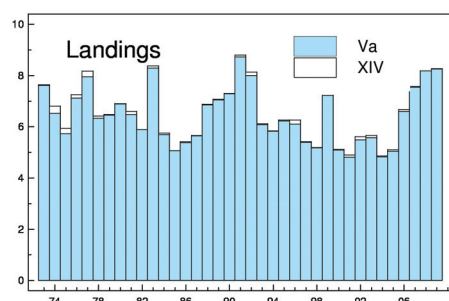
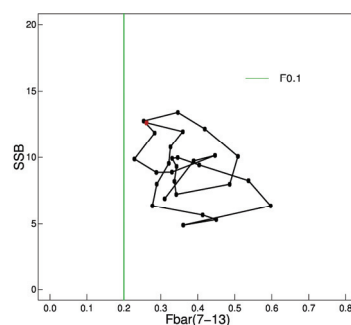


Figure 9.4.12.2.1 Tusk in Division Va and Subarea XIV. Landings (thousands tonnes), recruitment in millions (age 3), fishing mortality, and spawning stock biomass (thousands tonnes).

Recruitment has increased from a low level in 1995. There are indications that fishing mortality may have declined in recent years. Surveys indicate that the overall biomass is increasing but consists mostly of small individuals.

Management plans

No specific management objectives are known to ICES.

The fisheries

Tusk is largely (97%) caught in a mixed fishery by longliners fisheries in Va. Tusk is caught both in shelf areas and on the continental slope. In XIV tusk is caught as a bycatch species in small quantities.

Quality considerations

Landings in Subarea XIV are not included in the analytical assessment. Since landings from this Subarea have been on average less than 1% of the total, the exclusion does alter the perception of the state of tusk in Division Va.

Scientific basis

Assessment type	Analytical length based assessment (Gadget)
Input data	March Icelandic groundfish survey and landings in Va, catches at length, total landings and growth information
Discards and by-catch	Not included in the assessment
Other information	This stock was benchmarked in 2010(WKDEEP 2010)
Working group report	WGDEEP

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Reference points

At present no reference points have been proposed for this assessment unit.

Yield and spawning biomass per Recruit F-reference points (2010):

	Fish Mort Ages 7-13	Yield/R	SSB/R
Average last 3 years	0.32	0.46	3.3
F_{0.1}	0.2	0.427	6.1

Outlook for 2011

Basis: $F(2010) = \text{TAC constraint} = 0.23$; landings (2010) = 7 kt; $\text{SSB}(2011) = 16.7 \text{ kt}$; $R_3 (R2007 * 0.5)^3 = 12$;

Rationale	Landings (2011)	Basis	F (2011)	SSB (2012)	%SSB change ¹⁾	% TAC change ²⁾
Precautionary approach	6	F _{0.1}	0.2	19.7	18%	-14%

Weights in '000 t.

¹⁾ SSB 2012 relative to SSB 2011.

²⁾ Landings 2011 relative to TAC 2010.

³⁾ Recruitment assumptions do not affect the outlook for 2011.

Decrease in catches to 6 000 t or less will result in fishing mortality close to F_{0.1} in 2011 and result in an increase in spawning stock biomass.

Additional considerations

The overshoot in the set TAC for tusk for the native fleet is a result of the allowance, albeit limited, for changing the ITQ of one species to another. Although the permit is set in place in order to limit discarding and misreporting, for relatively small stocks with small TAC, this may result in serious overfishing in such stocks in the long term.

Closed areas off the south and south-eastern coast of Iceland have been implemented in 2003 to prevent the fishing on juveniles in Division Va.

Assessment and management areas

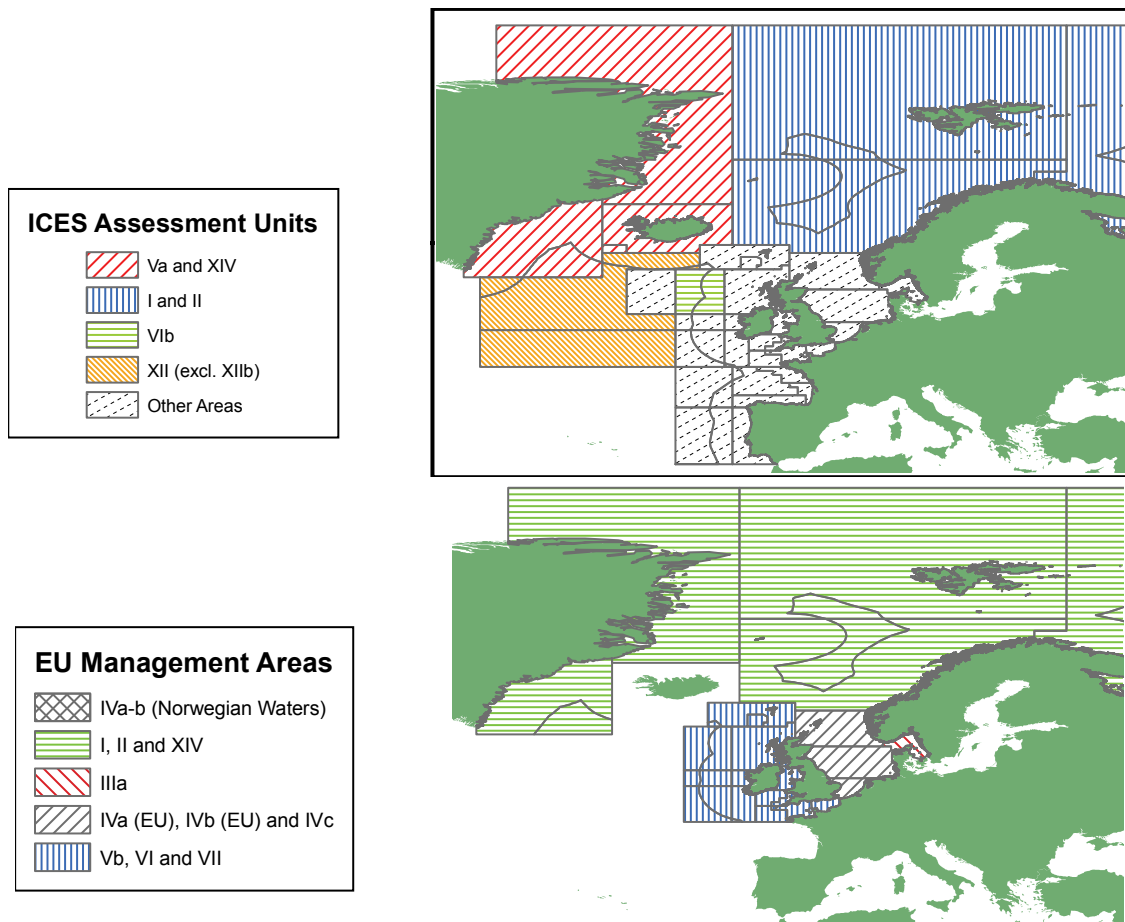


Figure 9.4.12.2.2 Tusk in Division Va and Subarea XIV. ICES assessment area (top) and EU TAC Regulation areas (bottom) of tusk in the Northeast Atlantic.

Sources

ICES. 2010. Report of the Working Group on the Biology and Assessment of Deep-Sea Fisheries Resources, 7–13 April 2010, ICES Headquarters, Copenhagen. ICES CM 2010/ACOM:17.

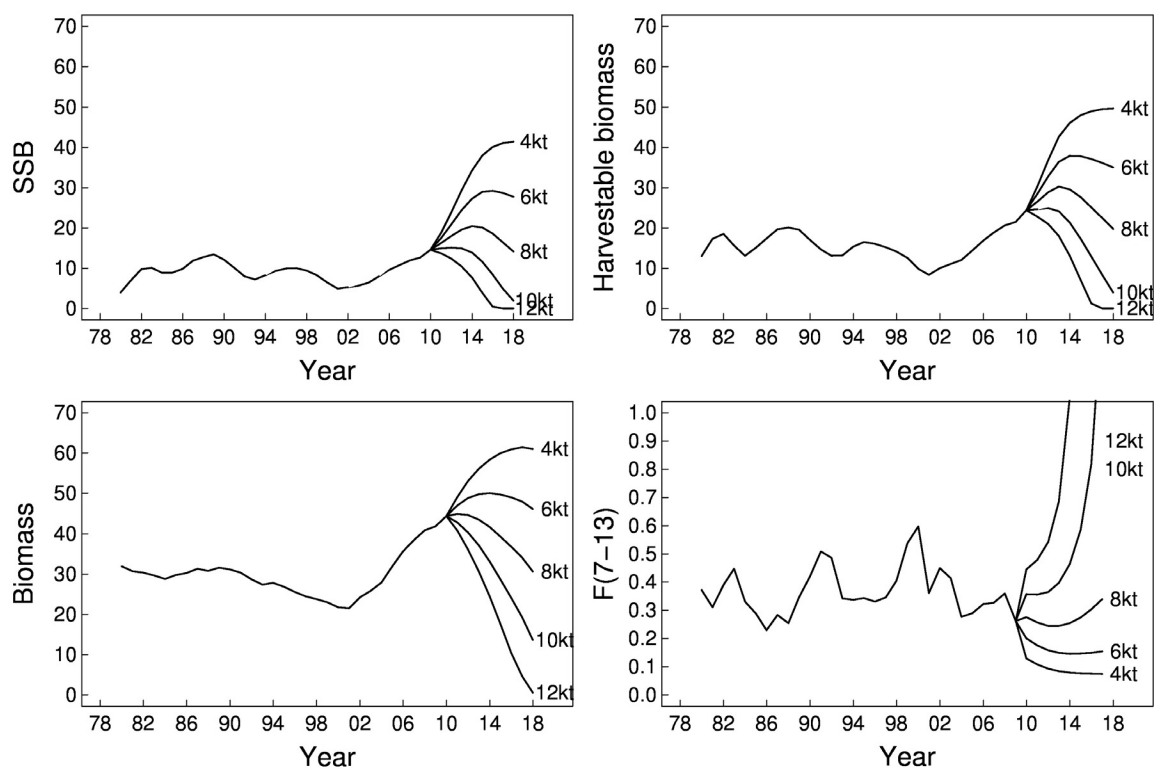


Figure 9.4.12.2.3 Tusk in Division Va and Subarea XIV. Estimates SSB, harvestable biomass, total biomass and fishing mortality in 1980-2009 and projections assuming various options of fixed catches until 2018.

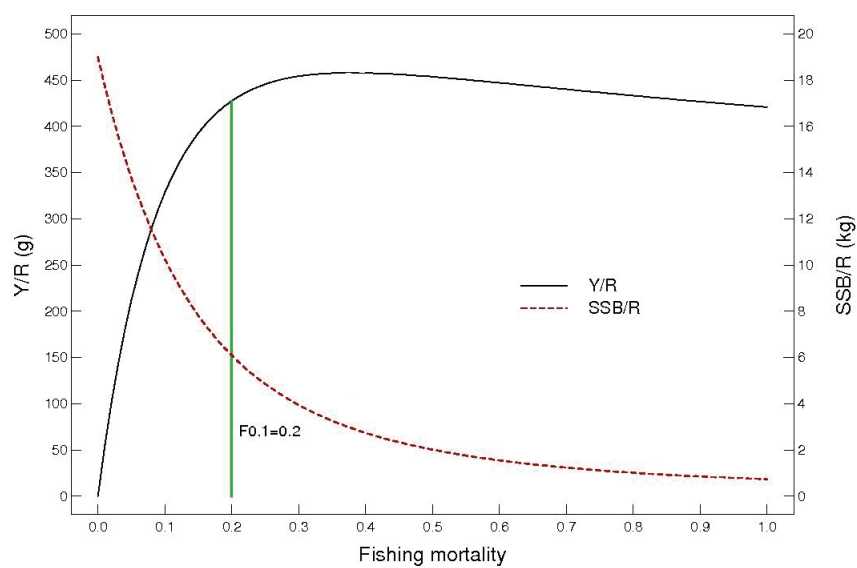


Figure 9.4.12.2.4 Tusk in Division Va and Subarea XIV. Yield per recruit analysis.

Table 9.4.12.2.1 Tusk in Division Va and Subarea XIV. ICES Advice, management and landings.

Year ¹	ICES Advice ¹	Predicted catch corresp. to advice ²	ICES landings Division Va ²	TAC Icelandic Division Va ³	ICES landings Division Va ³
2004/05	⁴		4.9	3.5	4.9
2005/06	⁴		5.1	3.5	5.9
2006/07	⁴		6.7	5.0	7.9
2007/08	⁴	4.9	7.6	5.0	7.2
2008/09	Biennial	3.8	8.3	5.5	8.2
2009/10	Constrain catches to 5000 t	5.0		5.5	
2010/11	Biennial	5.0		5.5	
2011/12	Fishing at $F_{0.1}$	6.0			

Weights in '000 t.

¹ National fishing year ending 31 August.

² Calendar year (refers to first year in fishing year).

³ National fishing year.

⁴ Advice for tusk in Northeast Atlantic, not split in several assessment unit (see Table 9.4.12.1).

Table 9.4.12.2.2 Tusk in Division Va and Subarea XIV. Total international landings (tonnes) by country and Subarea.

Year	Va						XIV								TOTAL
	Faroe	Germany	Iceland	Norway	UK	Total	Faroe	Germany	Iceland	Norway	Russia	Spain	UK	Total	
1973	3363	576	2366	911	391	7607	16	9	0	0	0	0	2	27	7634
1974	3172	375	1857	893	230	6527	259	2	15	0	0	0	1	277	6804
1975	2445	384	1673	975	254	5731	29	17	13	138	0	0	0	197	5928
1976	2397	334	2935	1352	94	7112	0	5	89	47	0	0	1	142	7254
1977	2818	212	3122	1796	0	7948	167	16	0	40	0	0	1	224	8172
1978	2168	0	3352	812	0	6332	0	47	0	38	0	0	0	85	6417
1979	2050	0	3558	845	0	6453	0	27	0	0	0	0	0	27	6480
1980	2873	0	3089	928	0	6890	0	13	0	0	0	0	0	13	6903
1981	2624	0	2827	1025	0	6476	110	10	0	0	0	0	0	120	6596
1982	2410	0	2804	666	0	5880	0	10	0	0	0	0	0	10	5890
1983	4046	0	3469	772	0	8287	74	11	0	0	0	0	0	85	8372
1984	2008	0	3430	254	0	5692	0	5	0	58	0	0	0	63	5755
1985	1885	0	3068	111	0	5064	0	4	0	0	0	0	0	4	5068
1986	2811	0	2549	21	0	5381	33	2	0	0	0	0	0	35	5416
1987	2638	0	2984	19	0	5641	13	2	0	0	0	0	0	15	5656
1988	3757	0	3078	20	0	6855	19	2	0	0	0	0	0	21	6876
1989	3908	0	3131	10	0	7049	13	1	0	0	0	0	0	14	7063
1990	2475	0	4813	0	0	7288	0	2	0	7	0	0	0	9	7297
1991	2286	0	6439	0	0	8725	0	2	0	68	0	0	1	71	8796
1992	1567	0	6437	0	0	8004	0	0	3	120	0	0	0	123	8127
1993	1329	0	4746	0	0	6075	0	0	1	39	0	0	0	40	6115
1994	1212	0	4612	0	0	5824	0	0	0	16	0	0	0	16	5840
1995	979	1	5245	0	0	6225	0	0	0	30	0	0	0	30	6255
1996	872	1	5226	3	0	6102	0	0	0	157	0	0	0	157	6259
1997	575	0	4819	0	0	5394	0	0	10	9	0	0	0	19	5413
1998	1052	1	4118	0	0	5171	0	0	0	12	0	0	0	12	5183
1999	1035	2	5794	391	2	7224	0	0	0	8	0	0	0	8	7232
2000	1154	0	4714	374	2	6244	0	0	11	11	0	3	0	25	6269
2001	1125	1	3392	285	5	4808	3	0	20	69	0	0	0	92	4900
2002	1269	0	3840	372	2	5483	4	0	86	30	0	0	0	120	5603
2003	1163	1	4028	373	2	5567	0	0	2	88	0	0	0	90	5657
2004	1478	1	3126	214	2	4821	0	0	0	40	0	0	0	40	4861
2005	1157	3	3539	303	41	5043	7	0	0	41	8	0	0	56	5099
2006	1239	2	5054	299	2	6596	3	0	0	19	51	0	0	73	6669
2007	1250	0	5984	300	1	7535	0	0	0	40	6	0	0	46	7581
2008	959	0	6932	284	0	8175	0.2	0	0	7	0	0	0	7.2	8182.2
2009	997	0	6955	300	0	8252	0	0	0	5	11	0	0	16	8268

Russian catches were taken in Subdivision XIVb1 (Mid-Atlantic Ridge)