Stock Annex: Tusk (*Brosme brosme*) in Subarea 12, excluding Division 12.b (southern Mid-Atlantic Ridge)

Stock specific documentation of standard assessment procedures used by ICES.

Stock: Tusk

Working Group: Working Group on Biology and Assessment of Deep-sea Fisheries Resources (WGDEEP)

Created:

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A. General

A.1. Stock definition

In 2007, WGDEEP examined the available evidence of stock discrimination in this species. Based on the genetic investigation, the Group suggested that Tusk on the Mid Atlantic Ridge;should be treated as one unit.

A.2. Fishery

Tusk is a bycatch species in the gillnet and longline fisheries in Subdivisions 12.a1 and 14.b1. Russia reported catches of tusk in 2005–2007 and 2009. No catches were reported for 2010. During the period 1996–1997 Norway also had a fishery in this area.

A.3. Ecosystem aspects

B. Data

B.1. Commercial catch

B.2. Biological

B.3. Surveys (use the ICES surveys acronym) Russian survey?

B.4. Commercial CPUE

B.5. Other relevant data

C. Assessment: data and method

Model used:

Software used:

Model Options chosen:

Input data types and characteristics:

TYPE	NAME	YEAR RANGE	AGE RANGE	VARIABLE FROM YEAR TO YEAR YES/NO
Caton	Catch in tonnes			
Canum	Catch at age in numbers			
Weca	Weight at age in the commercial catch			
West	Weight at age of the spawning stock at spawning time.			
Mprop	Proportion of natural mortality before spawning			
Fprop	Proportion of fishing mortality before spawning			
Matprop	Proportion mature at age			
Natmor	Natural mortality			

Tuning data:

TYPE	NAME	YEAR RANGE	AGE RANGE
Tuning fleet 1			
Tuning fleet 2			
Tuning fleet 3			
….			

D. Short-Term Projection

Model used:

Software used:

Initial stock size:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Intermediate year assumptions:

Stock recruitment model used:

Procedures used for splitting projected catches:

E. Medium-Term Projections

Model used:

Software used:

Initial stock size:

Natural mortality:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Intermediate year assumptions:

Stock recruitment model used:

Uncertainty models used:

1. Initial stock size:
2. Natural mortality:
3. Maturity:
4. F and M before spawning:
5. Weight at age in the stock:
6. Weight at age in the catch:
7. Exploitation pattern:

8. Intermediate year assumptions:
9. Stock recruitment model used:

F. Long-Term Projections

Model used:

Software used:

Maturity:

F and M before spawning:

Weight at age in the stock:

Weight at age in the catch:

Exploitation pattern:

Procedures used for splitting projected catches:

G. Biological Reference Points

	Type	Value	Technical basis
MSY	MSY Btrigger	xxx t	Explain
Approach	FMSY	Xxx	Explain
Precautionary Approach	Blim	xxx t	Explain
	Bpa	xxx t	Explain
	Flim	Xxx	Explain
	Fpa	Xxx	Explain

H. Other Issues

H.1. Historical overview of previous assessment methods

Summary of data ranges used in recent assessments:

Data	2006 assessment	2007 assessment	2008 assessment	2009 assessment
Catch data	Years: 1978–(AY-1) Ages: 1–8+	Years: 1978–(AY-1) Ages: 1–8+	Years: 1978–(AY-1) Ages: 1–8+	Years: 1978–(AY-1) Ages: 1–8+
Survey: A_Q1	Years: 1985–AY Ages: 1–7	Years: 1985–AY Ages 1–7	Years: 1985– AY Ages 1–7	Years: 1985– AY Ages 1–7
Survey: B_Q4	Years: 1996–(AY-1) Ages: 1–5	Years: 1996– AY-1) Ages 1–7	Years: 1996– AY-1) Ages 1–7	Years: 1996– AY-1) Ages 1–7
Survey: C	Not used	Not used	Not used	Not used

AY – Assessment year

(The historic perspective, as well as all the other section on the stock annex, should only update in a benchmark workshop. If there is any reason to deviate from the stocks annex, this should be explain in the Working Group report and only update this deviation in the historic perspective after consultation with ICES Secretariat and WG Chair).

I. References