

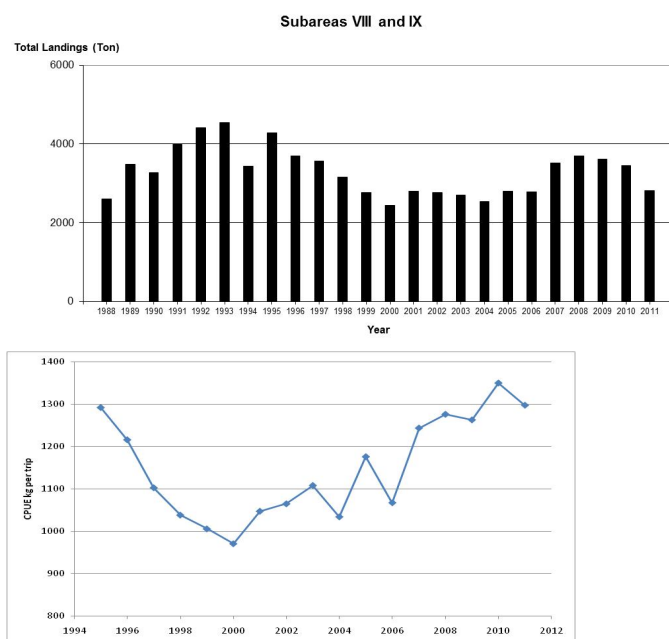
**ECOREGION**      **Widely distributed and migratory stocks**  
**STOCK**            **Black scabbardfish (*Aphanopus carbo*) in Subareas VIII and IX**

**Advice for 2013 and 2014**

Based on the ICES approach for data-limited stocks, ICES advises that catches should be no more than 3700 tonnes.

This is the first year ICES is providing quantitative advice for data-limited stocks (see Quality considerations).

(Fishing Mortality)		
		2009–2011
<b>MSY (<math>F_{MSY}</math>)</b>	?	Unknown
<b>Precautionary approach (<math>F_{pa}, F_{lim}</math>)</b>	?	Unknown
<b>Qualitative evaluation</b>	?	Unknown
SSB (Spawning-Stock Biomass)		
		2010–2011
<b>MSY (<math>B_{trigger}</math>)</b>	?	Unknown
<b>Precautionary approach (<math>B_{pa}, B_{lim}</math>)</b>	?	Unknown
<b>Qualitative evaluation</b>	✓	Above poss. reference points



**Figure 9.4.16.2.1** Black scabbardfish in Subareas VIII and IX. Top: Total landings (thousand tonnes) from 1988 to 2011. Bottom: Annual Cpue estimates for ICES Division IXa with 95% confidence intervals from an adjusted GLM model.

Cpue series of Division IXa suggest that the biomass has been increasing since 2000.

**Management plans**

No specific management objectives are known to ICES.

## Biology

Only part of the life cycle of the species occurs in Subareas VIII and IX. Specimens are larger than those occurring in Subareas VI, VII, and Divisions Vb and XIIb, but there are no mature fish in either area. Madeira and Canary Islands are the only known spawning areas of this species in the Northeast Atlantic.

## The fisheries

Black scabbardfish is taken in the waters off mainland Portugal in a targeted longline fishery that started in the late 1980s at restricted fishing grounds.

<b>Catch distribution</b>	Total catch (2011) was 2.8 kt, where 100% are landings (99% deep-water longline, 1% other gear types, and <1% discards).
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## Effects of the fisheries on the ecosystem

Deep-water sharks are the main bycatch species from this fishery. Previously there was low discard rate of bycatch species. However, a zero TAC for deep-water sharks (since 2008), and this may potentially lead to increased discarding.

## Quality considerations

The uncertainty associated with the abundance index values is not available.

The methods applied to derive quantitative advice for data-limited stocks are expected to evolve as they are further developed and validated. The harvest control rules have been simulation tested and are expected to stabilize stock size, but they may not be suitable if the stock size is low and/or the stock overfished.

## Scientific basis

<b>Assessment type</b>	Catches and cpue trends-based assessment.
<b>Input data</b>	Cpue from Portuguese longline fleet. Landings (1988-current year) by numbers, length distribution of the landings.
<b>Discards and bycatch</b>	There are no black scabbardfish discards.
<b>Indicators</b>	None.
<b>Other information</b>	None.
<b>Working group report</b>	<a href="#">WGDEEP</a>

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**Reference points**

There are no reference points proposed for this stock. However, biomass as measured by the standardized commercial cpue index is currently at its highest level in the time-series (which is thought to represent the entire history of the fishery) and thus likely above any candidate values for MSY  $B_{trigger}$ .

**Outlook for 2013 and 2014**

No analytical assessment is available for this stock. Therefore, detailed management options cannot be presented.

**ICES approach to data-limited stocks**

This data-limited stock has reliable abundance information from standardized commercial cpue data. For harvest control rule ICES uses the abundance/biomass index-adjusted *status quo* catch, which provides advice based on a comparison of the last two years of abundance data compared to the previous three years, combined with the catch data available from previous years.

For this stock the abundance is estimated to have increased by 5% in 2007–2009 (average of the three years) and 2010–2011 (average of the two years). The catches from the last year are assumed to be equal to the landings in 2011. Considering that exploitation does not seem to be detrimental to the stock, ICES advises that catches should be no more than 3700 t in 2013.

**Additional considerations**

Discarding of black scabbardfish in the Portuguese longline fishery is negligible.

Fishing takes place on fixed fishing grounds, which have not changed since the beginning of the fishery, on hard bottoms off Sesimbra (Portugal) at depths ranging from 800 to 1200 m and as deep as 1450 m. The French bottom trawlers have very little activity in Subarea VIII.

The exploratory assessment model was specifically designed for this management component of the stock, but incorporating information on the stock in Subareas VI and VII which is considered to be closely linked in its dynamics to the stock in Subareas VIII and IX. The posterior distributions of the main parameters of species dynamics in Division IXa are consistent with the available knowledge for the species in this area. The model adjustment can be improved if further information for other areas is made available, mainly for the CECAF area.

**Table 9.4.16.2.1**      Black scabbardfish in Subareas VIII and IX. ICES advice, management, and landings.

Year	ICES Advice	Predicted catch corresp. to advice	TAC EC Subareas VIII, IX, and X	ICES landings in Subareas VIII and IX
2003	<i>Status quo</i> exploitation level	-	4 <sup>1</sup>	2.7
2004	Biennial	-	4 <sup>1</sup>	2.5
2005	<i>Status quo</i> exploitation level	-	4 <sup>1</sup>	2.8
2006	Biennial	-	4 <sup>1</sup>	2.7
2007	<i>Status quo</i> exploitation level	-	4	3.5
2008	Biennial	-	4	3.6
2009	Constrain catches to 2003-2007 average	2.8	3.6	3.6
2010	Biennial	2.8	3.3	3.4
2011	Same advice as last year	2.8	3.3	3.5
2012	No new advice, same as 2011	2.8	3.3	
2013	Catches should not increase by more than 5%	3.7		
2014	No new advice, same as 2013			

Weights in thousand tonnes.

<sup>1</sup> Subarea VIII not included.

**Table 9.4.16.2.2** Black scabbardfish in Subareas VIII and IX. Landings by country (tonnes).

<b>Year</b>	<b>Portugal</b>	<b>France</b>	<b>Spain</b>	<b>Total</b>
1988	2602	0	0	2602
1989	3473	0	0	3473
1990	3274	0	0	3274
1991	3978	1	0	3979
1992	4389	8	0	4397
1993	4513	12	0	4525
1994	3429	5	0	3434
1995	4272	0	0	4272
1996	3686	0	3	3689
1997	3553	1	1	3555
1998	3147	2	3	3152
1999	2741	11	0	2752
2000	2371	35	1	2407
2001	2744	28	1	2773
2002	2692	35	1	2728
2003	2630	33	1	2664
2004	2463	39	1	2503
2005	2746	27	1	2774
2006	2674	51	0	2725
2007	3453	28	1	3482
2008	3602	45	1	3648
2009	3601	4	1	3606
2010	3453	1	0	3454
2011*	3475	17	0	3492

\* Preliminary data.