

### 3.12.6.e Black scabbardfish (*Aphanopus carbo*)

**State of the stock/fishery:** The stock in Sub-areas V, VI, VII and XII is outside safe biological limits. The estimated stock size of 5 700 t is only half of the approximated  $B_{msy}$ . The standardised CPUE for a reference fleet of French trawlers in Sub-areas VI and VII and Division Vb shows a steady decline (Figure 3.12.6.e.1). The analysis of the stock in IX is too uncertain to draw realistic conclusions. However, total catches are declining in Sub-area IX.

**Advice on management:** ICES recommends a reduction in fishing effort by 50% to bring the catch down to around MSY.

**Relevant factors to be considered in management:** Little is known about the stocks of black scabbardfish. The fishery in Sub-areas VI and VII is on immature fish of a mean length of about 100 cm. In Sub-area IX the fishery is on mature fish but they are not in spawning condition. Mature fish have also been found in Sub-area XII. Spawning fish have only been found off Madeira. The eggs and smallest juveniles are unknown and juveniles are very rare in both trawl and longline catches.

**Elaboration and special comment:** There are directed trawl fisheries in Sub-areas VI and VII and directed longline fisheries in Sub-areas VIII and IX. In Sub-area XII a new directed trawl fishery developed recently. Black scabbardfish is caught as by-catch in the trawl fisheries on blue ling and redfish in Sub-area V.

Summaries of the total landings for all areas and by Sub-area/Division are given in Figures 3.12.6.1–10. Landings by Sub-area/Division and nation are given in Table 3.12.6.e.1.

In the absence of information on stock structure the assessment was carried out on a northern component comprising Sub-areas V, VI, VII and XII and a southern component comprising Sub-area IX. The DeLury and Schaeffer models gave good fits in the northern area but the results should be treated with caution because of the short time series and the lack of information on migration. In Sub-area IX neither model fitted the data well possibly because of the poor quality of the CPUE estimates from the longline fishery.

**Source of information:** Report of the Study Group on the Biology and Assessment of Deep-Sea Fisheries Resources, February 2000 (ICES CM 2000/ACFM:08).

**Catch (Table 3.12.6.e.1):**

Year	ACFM catch
1988	3
1989	4
1990	5
1991	7
1992	9
1993	9
1994	8
1995	8
1996	8
1997	7
1998	6
1999*	4

\*Preliminary. Weights in '000 t.

**Table 3.12.6.e.1** Black scabbardfish (*Aphanopus carbo*). Study Group estimates of landings (tonnes).

**BLACK SCABBARDFISH (*Aphanopus carbo*) III and IV**

Year	France	Germany	Scotland	TOTAL
1988	2			<b>2</b>
1989	0			<b>0</b>
1990	57			<b>57</b>
1991	0			<b>0</b>
1992	0			<b>0</b>
1993	0			<b>0</b>
1994	13	3		<b>16</b>
1995			2	<b>2</b>
1996	3		1	<b>4</b>
1997	0		2	<b>2</b>
1998			9	<b>9</b>
1999*				

\*Preliminary

**BLACK SCABBARDFISH (*Aphanopus carbo*) Va**

Year	Iceland	TOTAL
1988		<b>0</b>
1989		<b>0</b>
1990		<b>0</b>
1991		<b>0</b>
1992		<b>0</b>
1993	0	<b>0</b>
1994	1	<b>1</b>
1995	+	<b>+</b>
1996	0	<b>0</b>
1997	1	<b>1</b>
1998		
1999		

\*Preliminary

**BLACK SCABBARDFISH (*Aphanopus carbo*) Vb**

Year	Faroes	France	Germany	UK	TOTAL
1988					<b>0</b>
1989		166			<b>166</b>
1990	12	407			<b>419</b>
1991	1	151			<b>152</b>
1992	4	29			<b>33</b>
1993	202	76	9		<b>287</b>
1994	114	45	1		<b>160</b>
1995	249	175			<b>424</b>
1996	57	129			<b>186</b>
1997	18	50			<b>68</b>
1998	36	144			<b>180</b>
1999	31	127		7*	<b>165</b>

\*Reported to the Faroese Coastal Guard Service

**Table 3.12.6.e.1 continued**

**BLACK SCABBARDFISH (*Aphanopus carbo*) VI and VII**

Year	Faroes	France	Germany	Ireland	Spain	Scotland	E&W&N.I.	TOTAL
1988								<b>0</b>
1989	46	108						<b>154</b>
1990		1060						<b>1060</b>
1991		2759						<b>2759</b>
1992	3	3433						<b>3436</b>
1993	62	3411	48	8				<b>3529</b>
1994		3050	46	3		2		<b>3101</b>
1995		3257	3			18		<b>3278</b>
1996		3650	2			36	1	<b>3689</b>
1997	3	2754		0	1	235	2	<b>2995</b>
1998		1815		0	3	148	1	<b>1967</b>
1999		1600		30	0	*	1	<b>1631</b>

\* No landings

**BLACK SCABBARDFISH (*Aphanopus carbo*) VIII and IX**

Year	France	Portugal	Spain	TOTAL
1988		2602		<b>2602</b>
1989		3473		<b>3473</b>
1990	0	3274		<b>3274</b>
1991	1	3978		<b>3979</b>
1992	0	4389		<b>4389</b>
1993	0	4513		<b>4513</b>
1994	0	3429		<b>3429</b>
1995		4272		<b>4272</b>
1996	126	3686	3	<b>3815</b>
1997	2	3553	1	<b>3556</b>
1998	2	3147	3	<b>3152</b>
1999*	1	2510	0	<b>2511</b>

\*Preliminary

**BLACK SCABBARDFISH (*Aphanopus carbo*) X**

Year	Faroes	Portugal	TOTAL
1988			<b>0</b>
1989			<b>0</b>
1990			<b>0</b>
1991		166	<b>166</b>
1992	370		<b>370</b>
1993		2	<b>2</b>
1994			<b>0</b>
1995		3	<b>3</b>
1996	11	0	<b>11</b>
1997	3	0	<b>3</b>
1998	31	68	<b>99</b>
1999*		46	<b>46</b>

\*Preliminary

**Table 3.12.6.e.1 continued**

**BLACK SCABBARDFISH (*Aphanopus carbo*) XII**

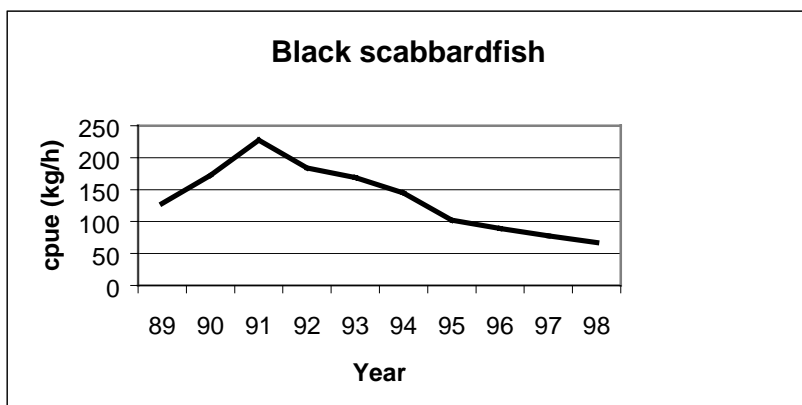
Year	Faroes	France	Germany	Spain	TOTAL
1988					<b>0</b>
1989					<b>0</b>
1990					<b>0</b>
1991					<b>0</b>
1992		512			<b>512</b>
1993	1051		93		<b>1144</b>
1994	779		45		<b>824</b>
1995	301#				<b>301</b>
1996	187	4		253	<b>444</b>
1997	102			98	<b>200</b>
1998	20			134	<b>154</b>
1999*				109	<b>109</b>

#includes VIb Hatton Bank

\* Preliminary

**BLACK SCABBARDFISH (*Aphanopus carbo*) XIV**

Year	Faroes	Total
1988		<b>0</b>
1989		<b>0</b>
1990		<b>0</b>
1991		<b>0</b>
1992		<b>0</b>
1993		<b>0</b>
1994		<b>0</b>
1995		<b>0</b>
1996		<b>0</b>
1997		<b>0</b>
1998	2	<b>2</b>
1999		<b>0</b>



**Figure 3.12.6.e.1** Black Scabbardfish: Standardised CPUE (kg/h) from a reference fleet of French deep-water trawlers in ICES Sub-areas VI and VII and Division Vb combined