

**FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES*  
SOUTH GEORGIA (SUBAREA 48.3)**

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## FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES* SOUTH GEORGIA (SUBAREA 48.3)

### 1. Details of the fishery

#### 1.1 Reported catch (time series)

In 2004, the Commission agreed to subdivide Subarea 48.3 into one area containing the South Georgia–Shag Rocks (SGSR) stock and other areas, to the north and west, that do not include the SGSR stock. Within the SGSR area, the Commission defined three Management Areas (A, B and C) (CM 41-02/A).

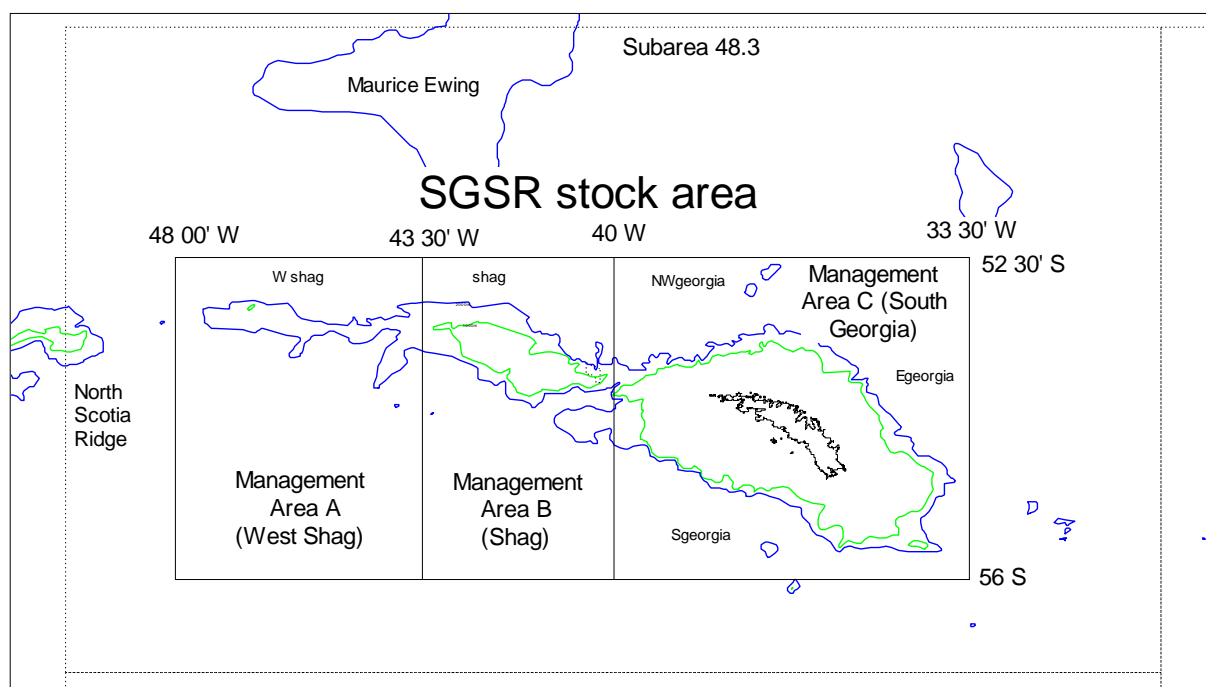


Figure 1: Definition of the SGSR stock area, with its three Management Areas A, B and C.

2. The catch limits in the 2009/10 season for Management Areas A, B and C were 0, 900 and 2 100 tonnes respectively, with an overall catch limit for SGSR of 3 000 tonnes. The total declared catch was 2 522 tonnes. Catches in Management Areas B and C were 903 tonnes and 1 618 tonnes respectively (in addition, <1 tonne was taken during a research survey). Management Area B was closed on 17 August 2010 and Management Area C was closed on 31 August 2010. The fishing season in both management areas commenced on 26 April 2010 (CM 41-02, paragraph 5). Tagging of toothfish continued at a rate of >1 fish per tonne with a total of 2 968 fish tagged (with 737 recaptures).

3. Most catch has been taken by longlines, but 66 tonnes were taken by pots in 2000/01, 24 tonnes in 2005/06 and 55 tonnes in 2007/08. These data are included in the total catch. With respect to the distribution of effort, previous reports have displayed the spread of the effort in the fishery over time. Current effort is spread evenly over the fished areas.

## 1.2 Total removals

4. The catch series is shown in Table 1. There has been no evidence of IUU fishing in Subarea 48.3 since 2005/06.

Table 1: Catch history for *Dissostichus eleginoides* in Subarea 48.3. SGSR: South Georgia–Shag Rocks stock; West: area outside the SGSR stock area. (Source: STATLANT data for past seasons, and catch and effort reports for current season, WG-FSA-10/6 Rev. 1 and past reports for IUU catch.)

Season	Regulated fishery		Estimated IUU catch (tonnes)	Total removals (tonnes)			
	Effort (no. vessels)	<i>D. eleginoides</i> catch (tonnes)		SGSR	West	Subarea	
		Limit					Reported
1984/85	1	-	521	0	517	4	521
1985/86	1	-	733	0	733	0	733
1986/87	1	-	1954	0	1954	0	1954
1987/88	2	-	876	0	876	0	876
1988/89	3	-	7060	144	6963	241	7204
1989/90	2	-	6785	437	6838	384	7222
1990/91	1	2500	1756	1775	3531	0	3531
1991/92	23	3500	3809	3066	6864	11	6875
1992/93	18	3350	3020	4019	7039	0	7039
1993/94	4	1300	658	4780	5246	191	5438
1994/95	13	2800	3371	1674	4972	73	5045
1995/96	13	4000	3602	0	3530	72	3602
1996/97	10	5000	3812	0	3808	4	3812
1997/98	9	3300	3201	146	3347	0	3347
1998/99	12	3500	3627	667	4293	0	4293
1999/00	17	5310	4904	1015	5910	9	5919
2000/01	18	4500	4047	196	4232	11	4243
2001/02	17	5820	5742	3	5717	29	5745
2002/03	19	7810	7528	0	7510	18	7528
2003/04	17	4420	4497	0	4460	37	4497
2004/05	8	3050	3034	23	3057	0	3057
2005/06	11	3556	3535	0	3535	0	3535
2006/07	11	3554	3539	0	3537	2	3539
2007/08	12	3920	3864	0	3864	0	3864
2008/09	11	3920	3382	0	3382	0	3382
2009/10	9	3000	2522	0	2522	0	2522

5. WG-FSA-10/P6 presented an analysis of cetacean depredation on longlines. Adding the fish taken by cetaceans to the total catches would increase them by, on average, 3.6% over the reported figures for that year. The resultant catch series is shown in Table 2.

Table 2: Total removals (tonnes) taking into account cetacean depredation.

Year	Total removals	Year	Total removals
1985	517	1998	3410
1986	732	1999	4387
1987	1954	2000	6087
1988	876	2001	4358
1989	6962	2002	5887
1990	6828	2003	7727
1991	3566	2004	4576
1992	6933	2005	3239
1993	7109	2006	3709
1994	5297	2007	3606
1995	5021	2008	3892
1996	3607	2009	3503
1997	3888	2010	2612

### 1.3 Size distribution of catches (time series)

6. Catch-weighted length frequencies for *D. eleginoides* from 1984/85 to 2009/10 are shown in Figure 2.

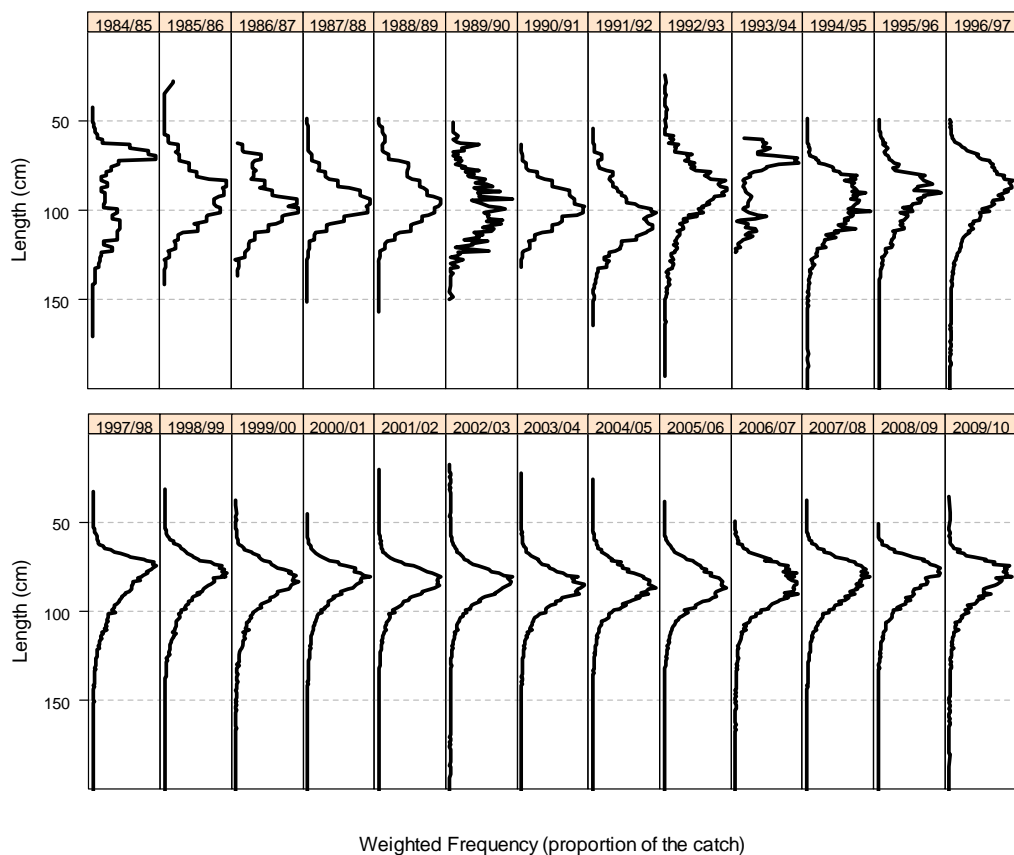


Figure 2: Catch-weighted length frequencies for *Dissostichus eleginoides* in Subarea 48.3 for the early time series (1984/85 to 1996/97) and later time series (1996/97 to present) (source: observer, fine-scale and STATLANT data).

7. The age distribution of catches has been determined by simple random sampling of fish in the catch for all years since 1998 (Table 3; WG-FSA-09/28 Rev. 1).

Table 3: Sample size for age determination of fish caught in Subarea 48.3.

Year	Sample size for age determination
1998	250
1999	259
2000	298
2001	467
2002	200
2003	200
2004	418
2005	251
2006	250
2007	250
2008	249
2009	512
2010	254

## 2. Stocks and areas

8. No assessment was undertaken in 2010. The assessment undertaken in 2009 is reported in SC-CAMLR-XXVIII, Annex 5, Appendix L.

## 3. Parameters and available data

9. No assessment was undertaken in 2010. The assessment undertaken in 2009 is reported in SC-CAMLR-XXVIII, Annex 5, Appendix L.

## 4. Stock assessment

10. No assessment was undertaken in 2010. The assessment undertaken in 2009 is reported in SC-CAMLR-XXVIII, Annex 5, Appendix L.

## 5. By-catch of fish and invertebrates

### 5.1 Estimation of by-catch removals

11. The priority by-catch taxa for which assessments of status are required are macrourids and rajids (SC-CAMLR-XXI, Annex 5, paragraphs 5.151 to 5.154). Catches of by-catch species groups (macrourids, rajids and other species) reported in fine-scale data, their respective catch limits, and number of rajids cut from lines and released alive, are summarised in Table 5. Both macrourid and rajid catches were well within the catch limits and were slightly lower than in the 2008/09 fishing season.

Table 4: Catch history for by-catch species (macrourids, rajids and other species), catch limits and number of rajids released alive in Subarea 48.3. Catch limits are for the whole fishery (see CM 41-02 for details). (Source: fine-scale data)

Season	Macrourids		Rajids			Other species	
	Catch limit (tonnes)	Reported catch (tonnes)	Catch limit (tonnes)	Reported catch (tonnes)	Number released	Catch limit (tonnes)	Reported catch (tonnes)
1987/88	-	0	-	1	-	-	0
1988/89	-	1	-	11	-	-	0
1989/90	-	0	-	1	-	-	0
1990/91	-	1	-	4	-	-	0
1991/92	-	1	-	2	-	-	0
1992/93	-	2	-	0	-	-	0
1993/94	-	0	-	12	-	-	0
1994/95	-	12	-	90	-	-	10
1995/96	-	37	-	54	-	-	0
1996/97	-	34	-	43	-	-	2
1997/98	-	21	-	13	-	-	2
1998/99	-	21	-	19	-	-	9
1999/00	-	18	-	12	-	-	3
2000/01	-	21	-	27	-	-	1
2001/02	291	51	291	25	-	-	29
2002/03	390	75	390	38	-	-	14
2003/04	221	82	221	38	-	-	10
2004/05	152	121	152	9	-	-	20
2005/06	177	137	177	7	21 056	-	38
2006/07	177	130	177	4	9 265	-	27
2007/08	196	162	196	12	19 558	-	37
2008/09	196	110	196	22	23 709	-	33
2009/10	150	70	150	7	15 810	-	16

## 5.2 Assessments of impact on affected populations

12. A preliminary assessment of rajid populations in Subarea 48.3 using a surplus production model implemented in a Bayesian framework was presented at WG-SAM-07 (WG-SAM-07/11). In 2007, the Working Group noted that there were currently insufficient data to inform the assessment and that the results were strongly dependent on the informative priors for the two catchability parameters, and the intrinsic rate of increase,  $r$ . Nevertheless, these preliminary results suggested that the catch limit in Subarea 48.3 for rajids would be sustainable.

13. A rajid tagging program has been under way for four years in Subarea 48.3. Progress has been made on the assessment, however, this is not yet ready to be presented.

## 5.3 Mitigation measures

14. By-catch limits and move-on rules are included in the annual conservation measure established for this fishery (CM 41-02). In addition, mitigation measures for rajids include using Year-of-the-Skate protocols for releasing skates caught alive.

## 6. By-catch of birds and mammals

15. Two seabird mortalities were observed in 2009/10 – a grey-headed albatross and a black-browed albatross (taken from WG-FSA-10/5 Rev. 2, paragraph 4). No new estimates of potential seabird removals by IUU fishing were calculated in 2010. Previous estimates are summarised in SC-CAMLR-XXVI/BG/32 and SC-CAMLR-XXVI, Annex 6, Part II, Table 20.

Table 5: Observed seabird mortality rate and total estimated mortality of seabird by-catch in Subarea 48.3.

Season	Mortality rate (birds per thousand hooks)	Total estimated mortality (number of birds)
1996/97	0.23	5 755
1997/98	0.032	640
1998/99	0.013*	210*
1999/00	0.002	21
2000/01	0.002	30
2001/02	0.0015	27
2002/03	0.0003	8
2003/04	0.0015	27
2004/05	0.0015	13
2005/06	0	0
2006/07	0	0
2007/08	0	0
2008/09	0.0005	8
2009/10	0.0005	7

\* Excluding *Argos Helena* line weighting experiment cruise.

16. WG-IMAF did not meet in 2010, however, in 2009 it assessed the level of risk of incidental mortality of seabirds in Subarea 48.3 as category 5 (high) (SC-CAMLR-XXVIII, Annex 7, Table 14 and Figure 2). The fishing season has previously been set as 1 May to 31 August, with an allowance for an extension to 14 September for any vessel that has demonstrated full compliance with CM 25-02 in the previous season. In the 2009/10 fishing season, an early extension was allowed so that the fishery started on 26 April 2010.

17. The following decision rule was agreed (CM 41-02) to apply to the 2010/11 fishing season (CM 41-02, paragraphs 6 and 7):

6. The following decision rule shall apply to the extension of the 2010/11 season:
  - (i) if, on average, less than one bird per vessel is caught during the two extension periods in the 2009/10 season, the 2010/11 season shall start on 21 April 2011;
  - (ii) if, on average, between one and three birds per vessel, or more than 10 and fewer than 16 birds in total, are caught during the extension periods in the 2009/10 season, the 2010/11 season shall start on 26 April 2011; or
  - (iii) if, on average, more than three birds per vessel, or more than 15 birds in total, are caught during the extension periods in the 2009/10 season, the 2010/11 season shall start on 1 May 2011.



7. The extensions to the seasons in 2009/10 and 2010/11 shall be subject to a combined catch limit of three (3) seabirds per vessel per season. If a total of three seabirds is caught during the two extension periods in any one season, fishing shall cease immediately for that vessel. In the case of the extension at the start of the season, fishing shall not resume until 1 May of the corresponding season and the extension at the end of that season shall not apply.

18. In the 2009/10 fishing season, five vessels fished within the five-day early extension (26–30 April). One vessel caught two seabirds. The average catch is therefore 0.4 birds per vessel. The Working Group advised therefore that, according to CM 41-02, the 2010/11 fishery could start on 21 April 2011.

19. There were no observed marine mammal mortalities in the toothfish fishery in Subarea 48.3 for the 2009/10 season.

### **6.1 Mitigation measures**

20. CM 25-02 applies to this subarea.

### **6.2 Interactions involving marine mammals with longline fishing operations**

21. Interactions with cetaceans continue to be reported by observers in Subarea 48.3 and are comprehensively analysed in WG-FSA-10/P6.

## **7. Ecosystem effects**

22. The Working Group did not examine the ecosystem effects of the longline fishery for toothfish in Subarea 48.3.

## **8. Harvest controls and management advice**

### **8.1 Conservation measures**

23. The limits on the fishery for *D. eleginoides* in Subarea 48.3 are defined in CM 41-02. The limits in force applying to 2009/10 and 2010/11 and the Working Group's advice to the Scientific Committee are summarised in Table 6.

Table 6: Limits on the fishery for *Dissostichus eleginoides* in Subarea 48.3 in 2009/10 and 2010/11 (CM 41-02) and advice to the Scientific Committee.

Element	Limits in force	Advice
Access (gear)	Longlines and pots only	Carry forward
Subdivision of Subarea 48.3	Definition of area open to the fishery	Carry forward
Closure of other areas of Subarea 48.3	Closure of fishing outside the area of the fishery	Carry forward
Catch limit	Catch limit for <i>D. eleginoides</i> was 3 000 tonnes for the subarea, applied as follows: Management Area A: 0 tonnes Management Area B: 900 tonnes Management Area C: 2 100 tonnes.	Carry forward
Season: longline	1 May to 31 August In 2009/10, extension possible to start on 26 April and end on 14 September for vessels complying fully with CM 25-02 in the previous season. In 2010/11, extension possible subject to decision rule.	Revise start date
Pots	1 December to 30 November	Carry forward
Seabirds	During extension period and in each season any vessel catching three (3) seabirds to cease fishing.	Carry forward
By-catch: crabs	By-catch of crabs to be counted against crab catch limit.	Carry forward
finfish	Total combined catch of skates and rays 150 tonnes. Total catch of <i>Macrourus</i> spp. 150 tonnes.	Carry forward
any species	Move-on rule	Carry forward
Mitigation	In accordance with CM 25-02.	Carry forward
Observers	Each vessel to carry at least one CCAMLR scientific observer and may include one additional scientific observer.	Carry forward
Data	Five-day catch and effort reporting under CM 23-01. Haul-by-haul catch and effort data under CM 23-03. Biological data reported by the CCAMLR scientific observer.	Carry forward Carry forward Carry forward
Target species	For the purposes of CMs 23-01 and 23-04, <i>D. eleginoides</i> is the target species and the by-catch is any species other than <i>D. eleginoides</i> .	Carry forward
Jellymeat	Number and weight of <i>D. eleginoides</i> discarded, including those with jellymeat condition, to be reported. These catches count towards the catch limit.	Carry forward
Research fishing	Catches of <i>D. eleginoides</i> taken under CM 24-01 in the area of the fishery shall be considered as part of the catch limit.	Carry forward
Environmental protection	Regulated by CM 26-01.	Carry forward

## **8.2 Management advice**

24. In the 2009/10 fishing season, five vessels fished within the five-day early extension (26–30 April). One vessel caught two birds. The average catch is therefore 0.4 birds per vessel. The Working Group advised therefore that, according to CM 41-02, paragraph 6(i), the 2010/11 fishery could start on 21 April 2011.

25. The Working Group did not undertake an assessment of this stock in 2010, and had no additional management advice. It therefore recommended that CM 41-02 be carried forward in its entirety for the 2010/11 fishing season.