

**Fishery Report: *Dissostichus eleginoides* (TOP)  
South Georgia (Subarea 48.3)**

## CONTENTS

	Page
1. Details of the fishery .....	1
1.1 Introduction .....	1
1.2 Total removals .....	2
2. Stock assessment .....	2
3. By-catch of fish and invertebrates .....	3
3.1 Estimation of by-catch removals .....	3
3.2 Assessments of impact on affected populations .....	4
3.3 Mitigation measures .....	4
4. Incidental mortality of birds and mammals .....	5
4.1 Incidental mortality reported .....	5
4.2 Identification of levels of risk .....	6
4.3 Mitigation measures .....	6
5. Ecosystem effects .....	6
6. Management advice .....	6

Throughout this report the CCAMLR fishing season is represented by the year in which that season ended, e.g. 2012 represents the CCAMLR fishing season from 1 December 2011 to 30 November 2012.

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

### **1. Details of the fishery**

#### **1.1 Introduction**

1. 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) (Conservation Measure (CM) 41-02/A) (Figure 1).

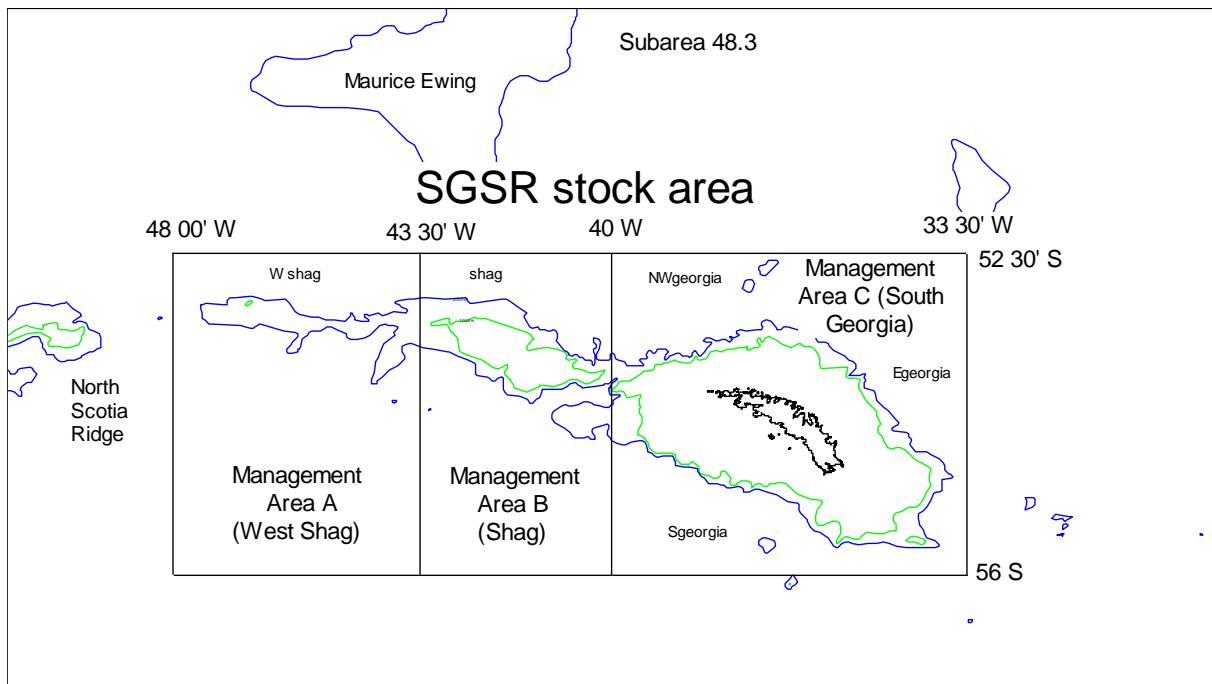


Figure 1: Definition of the South Georgia–Shag Rocks (SGSR) stock area, with its three Management Areas A, B and C.

2. The limits on the fishery for *Dissostichus eleginoides* in Subarea 48.3 are described in CM 41-02. The catch limits for *D. eleginoides* in 2012 for Management Areas A, B and C were 0, 780 and 1 820 tonnes respectively, with an overall catch limit for SGSR of 2 600 tonnes. The total reported catch was 1 844 tonnes. Catches of *D. eleginoides* in Management Areas B and C were 555 tonnes and 1 289 tonnes respectively (in addition, 165 kg were taken during a research survey). The fishing season in both management areas commenced on 16 April 2012 and both areas remained open to fishing during the prescribed season. Tagging of toothfish continued at a rate of 1.3 fish per tonne with a total of 3 026 fish tagged (with 512 recaptures).

3. Most catch has been taken by longlines, but 66 tonnes were taken by pots in 2001, 24 tonnes in 2006 and 55 tonnes in 2008. These data are included in the total catch. With respect to the distribution of effort, prior to 1992 effort was predominantly in two areas around Shag Rocks and to the northeast of South Georgia. From 1992 onwards (including 2012) the fishing effort has been distributed evenly over the entire SGSR shelf slope.

## 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, 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
1985	1	-	521	0	517	4	521
1986	1	-	733	0	733	0	733
1987	1	-	1954	0	1954	0	1954
1988	2	-	876	0	876	0	876
1989	3	-	7060	144	6963	241	7204
1990	2	-	6785	437	6838	384	7222
1991	1	2500	1756	1775	3531	0	3531
1992	23	3500	3809	3066	6864	11	6875
1993	18	3350	3020	4019	7039	0	7039
1994	4	1300	658	4780	5246	191	5438
1995	13	2800	3371	1674	4972	73	5045
1996	13	4000	3602	0	3530	72	3602
1997	10	5000	3812	0	3808	4	3812
1998	9	3300	3201	146	3347	0	3347
1999	12	3500	3627	667	4293	0	4293
2000	17	5310	4904	1015	5910	9	5919
2001	18	4500	4047	196	4232	11	4243
2002	17	5820	5742	3	5717	29	5745
2003	19	7810	7528	0	7510	18	7528
2004	17	4420	4497	0	4460	37	4497
2005	8	3050	3034	23	3057	0	3057
2006	11	3556	3535	0	3535	0	3535
2007	11	3554	3539	0	3537	2	3539
2008	12	3920	3864	0	3864	0	3864
2009	11	3920	3382	0	3382	0	3382
2010	9	3000	2522	0	2522	0	2522
2011	6	3000	1788	0	1788	0	1788
2012	6	2600	1844	0	1844	0	1844

5. WG-FSA-10/P06 presented an analysis of cetacean depredation on longlines with data up to the 2011 season inclusive and suggested that the total catches would increase on average by 2.6% over the reported figures for the 2004 season onwards.

## 2. Stock assessment

6. WG-FSA presented its two-year management advice for Subarea 48.3 in SC-CAMLR-XXX, paragraph 3.78; no additional management advice was provided in 2012. Full details of the assessment are given in the 2011 Fishery Report for this fishery.

7. The length frequencies for catches of *D. eleginoides* from 1996 to 2012 are shown in Figure 2. These length-frequency distributions of catches are unweighted and the interannual variability shown in the figure may reflect differences in the fished population but are also likely to be biased by changes in factors such as the characteristics/number of vessels in the fishery and the spatial and temporal distribution of fishing. A description of how length data are used in assessments is provided in the relevant section of this report.

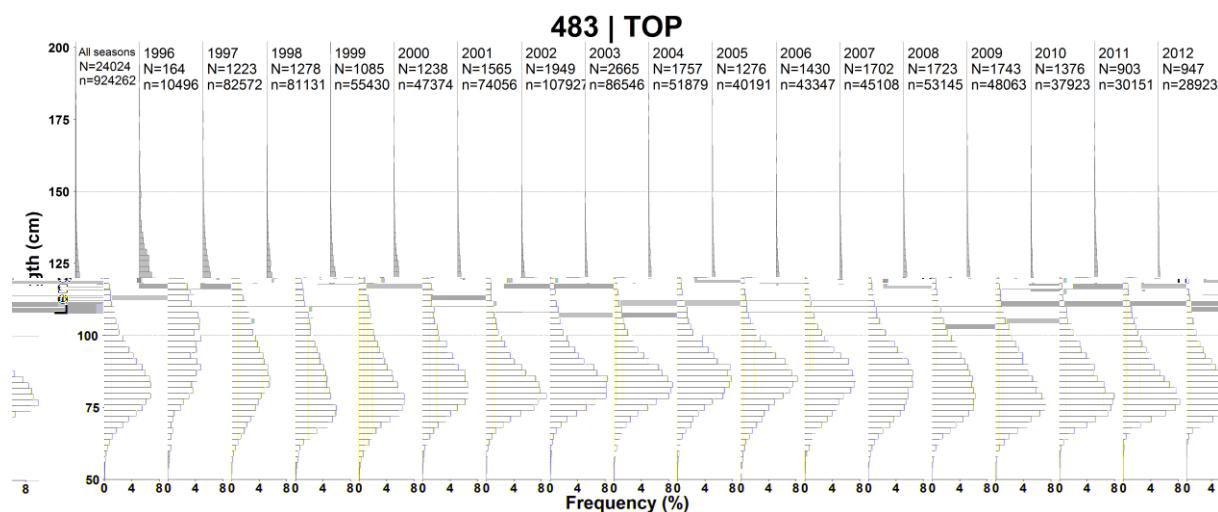


Figure 2: Length frequencies for *Dissostichus eleginoides* in Subarea 48.3 from 1996 to present using observer data. The number of hauls (N) and the number of fish measured (n) in each year are given at the top of each panel.

### 3. By-catch of fish and invertebrates

#### 3.1 Estimation of by-catch removals

8. 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 2. Both macrourid and rajid catches were well within the catch limits.

Table 2: 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)
1988	-	0	-	1	-	-	0
1989	-	1	-	11	-	-	0
1990	-	0	-	1	-	-	0
1991	-	1	-	4	-	-	0
1992	-	0	-	2	-	-	0

(continued)

Table 2 (continued)

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)
1993	-	2	-	0	-	-	0
1994	-	0	-	12	-	-	0
1995	-	12	-	90	-	-	10
1996	-	36	-	54	-	-	0
1997	-	33	-	43	-	-	2
1998	-	21	-	13	-	-	2
1999	-	21	-	19	-	-	1
2000	-	18	-	12	-	-	3
2001	-	21	-	27	-	-	1
2002	291	51	291	25	-	-	6
2003	390	75	390	38	-	-	14
2004	221	82	221	38	-	-	10
2005	152	121	152	9	-	-	19
2006	177	137	177	7	21056	-	35
2007	177	130	177	4	9265	-	26
2008	196	162	196	12	19558	-	36
2009	196	110	196	22	23709	-	33
2010	150	70	150	7	15810	-	16
2011	150	74	150	4	12830	-	9
2012	130	54	130	2	13503	-	9

### 3.2 Assessments of impact on affected populations

9. 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.

10. A rajid tagging program has been under way for seven years in Subarea 48.3. Examination on the possibility to undertake a skate assessment will be conducted in the intersessional period.

### 3.3 Mitigation measures

11. 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.

#### 4. Incidental mortality of birds and mammals

##### 4.1 Incidental mortality reported

12. Two seabird mortalities were observed in 2012, one black-browed albatross and one southern giant petrel. No new estimates of potential seabird removals by IUU fishing were calculated in 2012. Previous estimates are summarised in SC-CAMLR-XXVI/BG/32 and SC-CAMLR-XXVI, Annex 6, Part II, Table 20.

13. 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 2012, an early extension was allowed so that the fishery started on 16 April 2012.

14. The following decision rule was agreed (CM 41-02) to apply to the 2012 and 2013 fishing seasons (CM 41-02, paragraphs 5, 6 and 7):

5. For the purpose of the longline fishery for *Dissostichus eleginoides* in Statistical Subarea 48.3, the 2011/12 and 2012/13 seasons are defined as the period from 1 May to 31 August in each season, or until the catch limit is reached, whichever is sooner. For the purpose of the pot fishery for *Dissostichus eleginoides* in Statistical Subarea 48.3, the 2011/12 and 2012/13 seasons are defined as the period from 1 December to 30 November, or until the catch limit is reached, whichever is sooner. The 2011/12 season for longline fishing operations may be extended in two periods: (i) to start on 16 April and (ii) to end on 14 September for any vessel which has demonstrated full compliance with Conservation Measure 25-02 in the previous season.

6. The following decision rule shall apply to the extension of the 2012/13 season:

- (i) if, on average, less than one bird per vessel is caught during the two extension periods in the 2011/12 season, the 2012/13 season shall start on 11 April 2013;
- (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 2011/12 season, the 2012/13 season shall start on 16 April 2013; 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 2011/12 season, the 2012/13 season shall start on 21 April 2013.

7. The extensions to the seasons in 2011/12 and 2012/13 shall be subject to a combined catch limit of three (3) seabirds per vessel per season. If a total of three seabirds are caught by one vessel 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.

15. In 2012 the seabird mortality rate was 0.0006 birds/thousand hooks (Table 3) and there was one report of a sperm whale which had become tangled in the mainline and was hauled

up dead. Interactions with cetaceans continue to be reported by observers in Subarea 48.3 and are presented in WG-FSA-12/66 Rev. 2.

Table 3: Observed seabird mortality rate and total estimated mortality of seabird by-catch in Subarea 48.3.

Season	Mortality rate (birds/thousand hooks)	Total estimated mortality (number of birds)
1997	0.23	5755
1998	0.032	640
1999	0.013*	210*
2000	0.002	21
2001	0.002	30
2002	0.0015	27
2003	0.0003	8
2004	0.0015	27
2005	0.0015	13
2006	0	0
2007	0	0
2008	0	0
2009	0.0005	8
2010	0.0005	7
2011	0	0
2012	0.0006	6

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

#### 4.2 Identification of levels of risk

16. The risk level of seabirds in this fishery in Subarea 48.3 is category 5 (High) (SC-CAMLR-XXX, Annex 8, paragraph 8.1).

#### 4.3 Mitigation measures

17. CM 25-02 applies to this subarea.

#### 5. Ecosystem effects

18. WG-FSA did not examine the ecosystem effects of the longline fishery for toothfish in Subarea 48.3.

#### 6. Management advice

19. In the 2012 fishing season, two vessels fished within the five-day early-season extension (16–21 April). No birds were caught during this period and therefore WG-FSA advised that, according to CM 41-02, paragraph 6(i), the 2013 fishery could start on 11 April 2013.



20. The Working Group did not undertake an assessment of this stock in 2012, and had no additional management advice. It therefore recommended that CM 41-02 be carried forward in its entirety for the 2012/13 fishing season, including the recommended catch limit of 2 600 tonnes.

21. The limits on the fishery for *D. eleginoides* in Subarea 48.3 are defined in CM 41-02. The limits in force apply to 2012 and 2013 and the Working Group's advice to the Scientific Committee is summarised in Table 4.

Table 4: Limits on the fishery for *Dissostichus eleginoides* in Subarea 48.3 in force (CM 41-02) and advice to the Scientific Committee.

Element	Limits in force 2012 and 2013	Advice
Access (gear)	Longlines or 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>Dissostichus eleginoides</i> was 2 600 tonnes for the subarea, applied as follows: Management Area A: 0 tonnes Management Area B: 780 tonnes Management Area C: 1 820 tonnes.	Carry forward
Season:	1 May to 31 August	Carry forward
Longline	In 2012, extensions start on 16 April and end on 14 September for vessels complying fully with CM 25-02 in the previous season. In 2013, extension possible subject to decision rule.	
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:	By-catch of crabs to be counted against crab catch limit.	Carry forward
Crabs		
Finfish	Total combined catch of skates and rays 130 tonnes. Total catch of <i>Macrourus</i> spp. 130 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

(continued)

Table 4 (continued)

Element	Limits in force 2012 and 2013	Advice
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