

**Fishery Report: *Dissostichus eleginoides* (TOP) Prince Edward Islands
South African EEZ (Subareas 58.6 AND 58.7)**

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Throughout this report the CCAMLR fishing season is represented by the year in which that season ended, e.g. 2012 represents the 2011/12 CCAMLR fishing season (from 1 December 2011 to 30 November 2012).

**FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES* (TOP)
PRINCE EDWARD ISLANDS SOUTH AFRICAN EEZ
(SUBAREAS 58.6 AND 58.7)**

1. Details of the fishery

1. A licensed fishery within the South African EEZ at the Prince Edward Islands started in October 1996. Part of the South African EEZ is outside the CAMLR Convention Area (Area 51) and part falls within Subareas 58.6 and 58.7 and Division 58.4.4a (Figure 1). Most fishing in the South African EEZ takes place to the north and the east of the Prince Edward Islands in Subareas 58.6 and 58.7 and Area 51, and this Fishery Report focuses on Subareas 58.6 and 58.7.

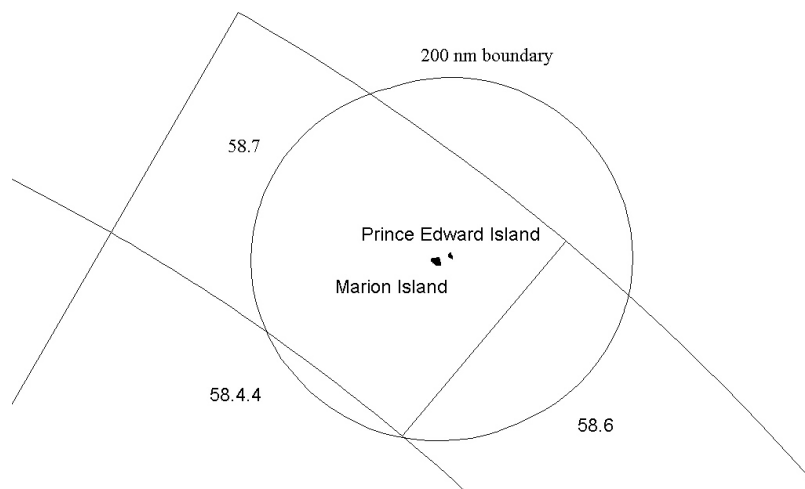


Figure 1: General map of the South African EEZ at the Prince Edward Islands and the boundaries of Subareas 58.6 and 58.7 and Division 58.4.4 in the CAMLR Convention Area. Area 51 lies to the north of Subareas 58.6 and 58.7.

2. Although the fishery began in 1996, IUU fishing vessels were first detected in the area in 1995 and possibly 1994. Prior to 2002, the estimated IUU catch of toothfish exceeded the reported catch for most years (SC-CAMLR-XXVI, Annex 5, Appendix N, Table 2).

3. In 2005 South Africa licensed five operators with fixed proportional allocations of the catch limit to undertake fishing in its EEZ at the Prince Edward Islands. Since 2006, only one operator (with 27% of the catch limit) has been active in the fishery. However, a second operator licensed to catch the remaining 73% of the catch limit, entered the fishery in late 2010.

1.1 Reported catch (time series)

4. The total annual catches taken in the South African EEZ in Subareas 58.6 and 58.7 in the Convention Area, and Area 51 outside the Convention Area, as reported to CCAMLR, are presented in Table 1. South Africa is currently undertaking a review of the catch history from

within its EEZ in Subareas 58.6 and 58.7 in order to reconcile differences identified in the CCAMLR database and other data sources. The outcomes of this review will be used to update information in Table 1.

Table 1: Catch history for *Dissostichus eleginoides* in Subareas 58.6 and 58.7 in the Convention Area, and Area 51 outside the Convention Area. (Source: STATLANT data for past seasons, fine-scale data for current season, WG-FSA-11/10 and past reports for IUU catch in Subarea 58.7.)

Fishing season	Reported catch (tonnes)				Estimated IUU catch (tonnes)	Total removal (tonnes)
	Area 51	Subarea 58.6	Subarea 58.7	Total		
1996	175	73	869	1 116	4 958	6 074
1997	353	53	1 193	1 599	7 327	8 926
1998	<1	267	637	904	598	1 502
1999	62	275	301	638	173	811
2000	94	79	1 015	1 188	191	1 379
2001	42	36	235	313	120	433
2002	34	67	98	199	78	277
2003	46	39	219	304	120	424
2004	33	71	133	237	48	285
2005	53	79	142	274	60	334
2006	22	27	124	172	0	172
2007	41	26	148	216	0	216
2008	21	55	69	145	0	145
2009	30	22	20	72	0	72
2010	74	77	72	224	0	224
2011	161	33	92	286	*	286
2012	135	30	51	217	*	217

* Not estimated

5. The status of the resource within the South African EEZ was revised in 2007 (SC-CAMLR-XXVI, Annex 5, Appendix N; WG-FSA-07/34 Rev. 1). In that review, the removals from the South African EEZ were derived from SC-CAMLR-XXVI, Annex 5, Appendix N, Table 2.

1.2 IUU catch

6. The estimated IUU catch in Subarea 58.7 is presented in Table 1 (IUU catches in Subarea 58.6 are described in the Crozet Island fishery report (Appendix L)).

7. Since 2003, IUU catch estimates are based on the number and duration of fishing activities of illegal vessels known, or believed, to have operated in the South African EEZ and on the average green-weight tonnages from vessels operating legally in that area in the corresponding years. Note that CCAMLR records indicated only one reported IUU vessel in this area during 2004, whereas other intelligence reports indicated that at least three IUU vessels were seen within the South African EEZ (WG-FSA-05/58). The latest IUU reports record a single vessel in Subarea 58.6 in 2006, which may or may not have been within the South African EEZ (WG-FSA-07/10 Rev. 5). There was no evidence of IUU fishing in recent seasons.

1.3 Size distribution of catches (time series)

8. Catch-weighted length frequencies for *Dissostichus eleginoides* caught by longline are presented in Figure 2. Most *D. eleginoides* caught by longline range from 50 to 120 cm in length, with a mode at approximately 60–90 cm. 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.

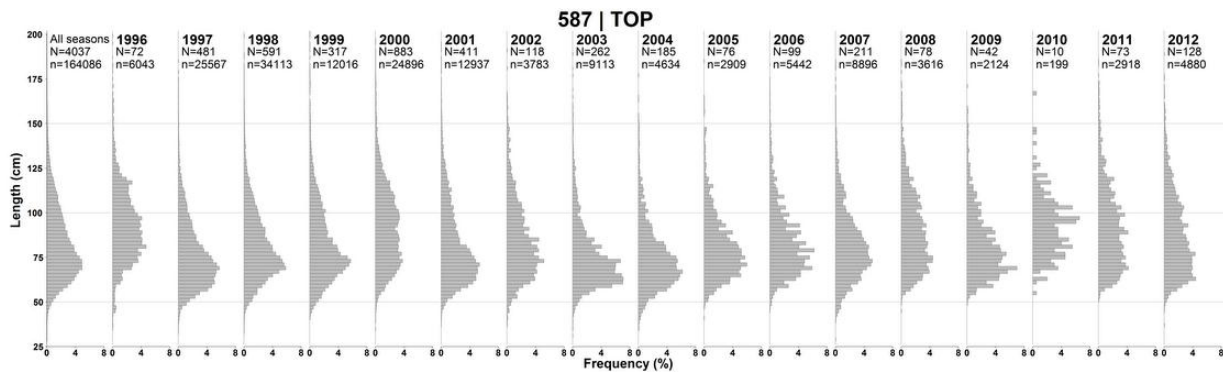


Figure 2: Length frequencies for *Dissostichus eleginoides* in the South African EEZ in Subareas 58.6 and 58.7 from 1996 to present using observer data. The number of hauls (N) and the number of fish measured (n) in each year are given at the top of each panel.

2. Stocks and areas

9. The South African EEZ around the Prince Edward Islands is mainly in Subarea 58.7 but extends east into Subarea 58.6, south into Division 58.4.4, and north of the Convention Area into Area 51 (Figure 1). However, there are currently no fishing grounds in the southern half of the South African EEZ. The majority of the fishery occurs down to about 1 500 m, but fishing depths in excess of 2 000 m have been recorded. Subarea 58.6 also includes the Crozet Islands to the east of the Prince Edward Islands. The current management approaches used by France and South Africa do not specifically consider the possibility that these island groups share the same toothfish stock.

3. Parameter estimation

10. The parameters used in the assessment reviewed in 2007 are reported in SC-CAMLR-XXVI, Annex 5, Appendix N.

11. South Africa has voluntarily implemented Conservation Measure (CM) 41-01 and requires each longline vessel to tag and release toothfish at the rate of one fish per tonne of green weight caught throughout the season.

12. Tagging rates and recaptures by year since 2006 are given in Table 2.

Table 2: Number of toothfish tagged and the number of recaptures per year in the South African EEZ in Subareas 58.6 and 58.7.

Year	Tagged	Recaptured
2006	94	1
2007	128	1
2008	120	4
2009	140	0
2010	74	7
2011	46	4
2012	136	6
Total	602	17

4. Stock assessment

13. The assessment was last reviewed in 2007 (see SC-CAMLR-XXVI, Annex 5, Appendix N and WG-FSA-07/34 Rev. 1). A difficulty with assessments is that there are conflicting signals in the CPUE and catch-at-length data. An operational management procedure (OMP) approach for the fishery that addresses this uncertainty was presented to, and discussed by, WG-SAM in 2009 (SC-CAMLR-XXVII, Annex 7, paragraphs 6.1 to 6.3; Brandão and Butterworth, 2009).

14. The OMP was not formally adopted by South Africa as a basis for management. However, as only one of the five right holders (licensed to catch 27% of the catch limit) has been active in the fishery since 2006, the annual catch was in line with that suggested by the OMP. A revision of the OMP considered by WG-SAM is currently being undertaken, but is being hampered by the fact that the fishery has moved from Spanish to trotline gear since 2009 and only trotline gear was used in 2011. A requirement for a portion of the catch to be taken by Spanish longline gear will be implemented to enhance CPUE comparisons between these gear types and to continue the historic CPUE series that is based on Spanish longline gear.

5. By-catch of fish and invertebrates

5.1 Estimation of by-catch removals

15. Estimated annual by-catch removals from the longline fishery for *D. eleginoides* in the South African EEZ in Subareas 58.6 and 58.7, and Area 51, are reported in Table 3.

Table 3: Catch history for by-catch species (macrourids, rajids and other species) taken in the longline fishery for *D. eleginoides* in the South African EEZ in Subareas 58.6 and 58.7 in the Convention Area, and Area 51 outside the Convention Area. (Source: fine-scale data.)

Season	Reported catch (tonnes)											
	Macrourids				Rajids				Other species			
	51	58.6	58.7	Total	51	58.6	58.7	Total	51	58.6	58.7	Total
1996	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	1	1	0	0	1	1
1999	0	0	0	0	0	0	0	0	0	0	0	0
2000	15	12	47	74	2	2	3	7	4	0	7	11
2001	8	2	13	22	0	0	0	1	1	0	1	2
2002	3	2	2	7	0	0	0	0	0	0	0	0
2003	-	-	-	-	-	-	-	-	-	-	-	-
2004	0	0	0	1	0	0	0	0	0	0	0	0
2005	-	-	-	-	-	-	-	-	-	-	-	-
2006	2	1	8	12	0	0	0	0	1	0	0	1
2007	15	9	22	46	0	0	0	0	2	0	2	5
2008	2	3	5	10	0	0	0	0	1	0	2	2
2009	1	2	1	4	0	0	0	0	0	0	0	0
2010	3	3	2	7	0	0	0	0	1	0	0	1
2011	9	1	3	13	3	0	0	3	3	0	1	4
2012	2	2	9	13	0	0	0	0	0	0	1	1

* No fine-scale data

5.2 Assessments of impact on affected populations

16. It was not possible to assess the impacts on affected populations.

5.3 Mitigation measures

17. There are no mitigation measures in force to reduce fish and invertebrate by-catch.

6. Incidental mortality of birds and mammals

6.1 Incidental mortality reported

18. There were no observed incidents of seabird mortality in the South African EEZ in Subareas 58.6 and 58.7 during 2012 (Table 4). This is the seventh consecutive year of no observed seabird by-catch in this fishery. No new estimates of potential seabird removals by IUU fishing were calculated in 2011. Previous estimates are summarised in SC-CAMLR-XXVI/BG/32 and SC-CAMLR-XXVI, Annex 6, Part II, Table 20.

Table 4: Estimated by-catch of seabirds in the South African EEZ in Subareas 58.6 and 58.7.

Fishing season	By-catch rate (birds/thousand hooks)	Estimated by-catch
1996	0.52	834
1997	0.194	528
1998	0.034	156
1999	0.046	516
2000	0.018	199
2001	0	0
2002	0.003	7
2003	0.025	39
2004	0.149	76
2005	0	0
2006	0	0
2007	0	0
2008	0	0
2009	0	0
2010	0	0
2011	0	0
2012	0	0

6.2 Identification of levels of risk

19. The level of risk of incidental mortality of seabirds in the fishery in the South African EEZ at the Prince Edward Islands (in both Subareas 58.6 and 58.7) is category 5 (high) (SC-CAMLR-XXX, Annex 8, paragraph 8.1).

6.3 Pot fishery by-catch

20. This fishery was active only in 2004 and 2005. No by-catch of seabirds or mammals was observed in this fishery.

6.4 Mitigation measures

21. South Africa has consistently required the application in this area of the mitigation measures recommended by CCAMLR with the exception of a closed season.

6.5 Interactions involving marine mammals with longline fishing operations

22. On one vessel, some limited observations by the industry in the 2005 season indicated a loss of two toothfish to toothed cetaceans for each whole toothfish landed when longlines were hauled. Longline operations are now concentrated in shallower waters to attempt to

minimise such losses. The Working Group noted that this level of cetacean predation is much greater than suspected for other toothfish fisheries, and encouraged the deployment of a scientific observer by South Africa to gather further data on this.

23. There were no observed incidental mortalities of marine mammals during 2012.

7. Management advice

24. In 2012 WG-FSA:

- (i) noted that a revised operational management procedure to form the basis for management advice is under development by national scientists
- (ii) was unable to provide management advice for the fishery in the South African EEZ at the Prince Edward Islands
- (iii) agreed that no new information was available on the state of fish stocks in Subareas 58.6 and 58.7 and Division 58.4.4 outside areas of national jurisdiction
- (iv) recommended that the prohibition of directed fishing for *D. eleginoides*, described in CMs 32-10, 32-11 and 32-12, remain in force.

Reference

Brandão, A. and D.S. Butterworth. 2009. A proposed management procedure for the toothfish (*Dissostichus eleginoides*) resource in the Prince Edward Islands vicinity. *CCAMLR Science*, 16: 33–69.