

**FISHERY REPORT: *DISSOSTICHUS ELEGINOIDES* CROZET ISLAND
INSIDE THE FRENCH EEZ (SUBAREA 58.6)**

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1. Details of the fishery

The fishery for *Dissostichus eleginoides* operated in the French EEZ around the Crozet Islands in Subarea 58.6 (Figure 1).

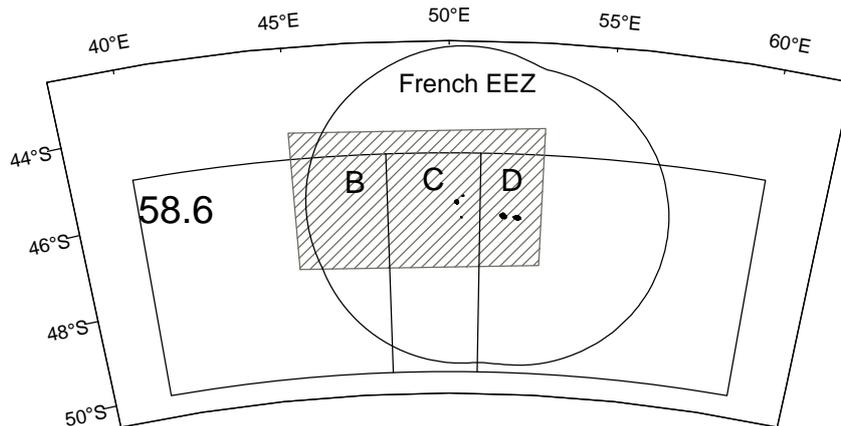


Figure 1: Map of Subarea 58.6 showing the location of the French EEZ, and SSRUs B, C and D established by CCAMLR.

1.1 Reported catch

2. The catch limit of *D. eleginoides* set by France in its EEZ in Subarea 58.6 for the 2008/09 season (defined by France, 1 September 2008 to 31 August 2009) was 1 000 tonnes. The catch limit was allocated to seven longliners. The season's catch reported for this subarea to October 2009 was 746 tonnes. Reported historical catches in the fishery are shown in Table 1, including source of catch estimates (C2 and STATLANT). Fishing trials with trawlers have not been continued. In Subarea 58.6, the fishery has been conducted using longlines from 1996/97 to the present. The fishery was active all year. A high level of depredation on *D. eleginoides* catches from killer whales (*Orcinus orca*) is the main reason why fishers avoid the area.

Table 1: Catch history for *Dissostichus eleginoides* in the French EEZ in Subarea 58.6 (source: STATLANT data for past seasons, fine-scale data for current season, WG-FSA-09/5 Rev. 1 and past reports for IUU catch for the whole subarea).

Season	Reported catch (tonnes)	Estimated IUU catch (tonnes)	Total removals (tonnes)
1976/77	6	0	6
1977/78	370	0	370
1982/83	17	0	17
1986/87	488	0	488
1987/88	21	0	21
1993/94	56	0	56
1994/95	115	0	115
1995/96	3	7 875	7 878
1996/97	413	11 760	12 173
1997/98	787	1 758	2 545
1998/99	877	1 845	2 722
1999/00	1 017	1 430	2 447
2000/01	1 091	685	1 776
2001/02	1 158	720	1 878
2002/03	531	302	833
2003/04	537	380	917
2004/05	559	12	571
2005/06	775	55	830
2006/07	410	0	410
2007/08	823	153	976
2008/09	746	0	746

1.2 IUU catch

3. Details of the IUU catches attributed to Subarea 58.6 are given in Table 1. IUU fishing was first detected in 1996 and peaked at an estimated 11 760 tonnes in 1996/97. Since the 2004/05 season, IUU fishing occurred only outside the EEZ due to increased surveillance within the EEZ. In 2007/08, the IUU catch was estimated to be 153 tonnes from outside the EEZ. There was no evidence of IUU fishing in 2008/09.

1.3 Size distribution of catches

4. Data from the longline fishery cover the period 1996/97 to the current season (Figure 2). Most *D. eleginoides* caught by longline range from 40 to 130 cm in length, with a mode at approximately 70–80 cm at the beginning of the series, and 55–80 cm in recent seasons.

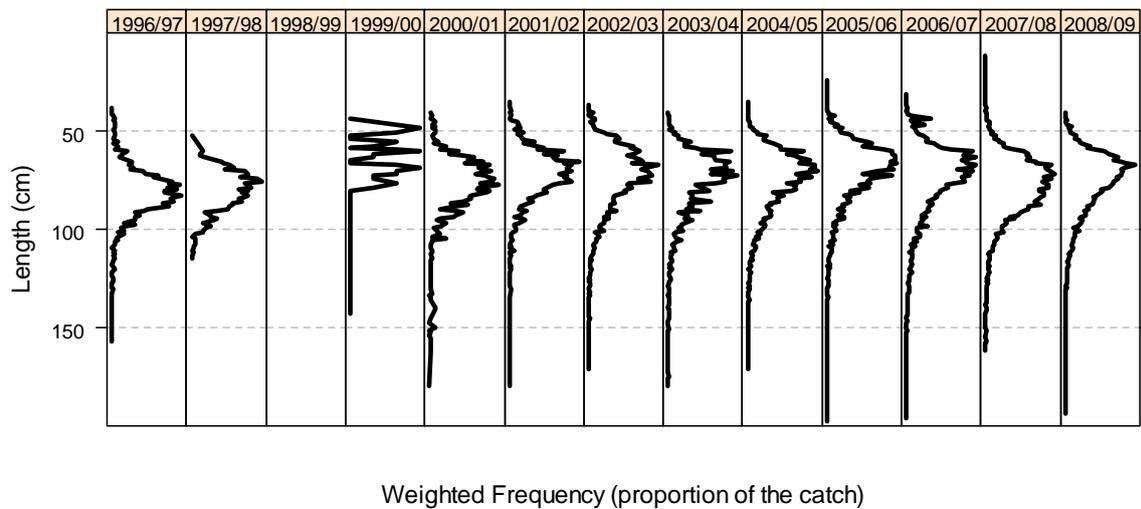


Figure 2: Catch-weighted length frequencies for *Dissostichus eleginoides* caught by longline in the French EEZ in Subarea 58.6 (source: fine-scale and STATLANT data, and the length-weight relationship was taken from observations on *D. eleginoides* in Subarea 58.7).

2. Stocks and areas

5. Tagging experiments at Heard Island (Division 58.5.2) (WG-FSA-07/48 Rev. 1) show long-distance movements of sub-adult/adult fish between zones (Heard to Kerguelen and also Crozet) but the proportion of exchange between stocks is still unknown.

3. Summary of the longline fishery

6. Reported catches by year and nationality for longline vessels are summarised in Table 2. The average (unstandardised) catch per hook has decreased from 0.27 kg/hook in 1996/97 to 0.13 kg/hook in 2008/09. Effort by month and year from the longline fishery is summarised in Table 3.

Table 2: Number of records extracted (sets), catch by SSRU (catch, tonnes), number of vessels (vessels) mean catch per set (tonnes/set), mean catch per hook (kg/hook) and mean depth fished (m).

Season	Sets	Catch (tonnes)				Number vessels	Catch/set (tonnes/set)	Catch /hook (kg/hook)	Mean depth (m)
		SSRU B	SSRU C	SSRU D	Total				
1996/97	69		60	16	76	1	1.1	0.27	1107
1997/98	8		12		12	1	1.5	0.26	1115
1998/99	13		25	4	29	1	2.2	0.16	1282
1999/00	455	<1	641	355	996	6	2.2	0.26	1127
2000/01	611		605	446	1052	6	1.7	0.23	1044
2001/02	1044	4	884	404	1292	7	1.2	0.16	975
2002/03	670	18	413	109	539	6	0.8	0.09	1141
2003/04	668	116	216	194	526	7	0.8	0.11	1142
2004/05	723	206	200	191	596	7	0.8	0.11	1166
2005/06	876	192	349	515	1056	8	1.2	0.20	967
2006/07	790	53	252	114	419	7	0.5	0.09	1033
2007/08	907	67	572	184	823	7	0.9	0.17	1111
2008/09	1041	90	321	335	746		0.7	0.13	1074
Total	7875	745	4551	2866	8162	13			

Table 3: Number of sets by month and year (C2 data).

Season	Month												Total
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
1996/97	0	0	0	0	0	0	0	0	0	0	2	67	69
1997/98	8	0	0	0	0	0	0	0	0	0	0	0	8
1998/99	0	0	0	0	0	0	0	0	0	9	4	0	13
1999/00	9	23	26	22	53	16	30	125	73	0	53	25	455
2000/01	72	175	43	73	37	0	0	86	48	41	32	4	611
2001/02	19	32	99	170	135	150	144	87	0	87	58	63	1044
2002/03	118	116	42	32	102	87	0	43	0	104	0	26	670
2003/04	30	42	205	50	18	40	87	74	46	27	0	49	668
2004/05	0	27	252	0	0	47	155	52	22	64	10	94	723
2005/06	30	86	267	0	39	132	160	0	8	86	0	68	876
2006/07	54	0	199	73	18	78	60	161	65	4	13	65	790
2007/08	0	0	225	70	118	217	40	58	88	22	4	65	907
2008/09	25	61	270	46	180	250	86	96	27	-	-	-	1041
Total	365	562	1628	536	700	1017	762	782	377	444	176	526	7875

7. The effort was mainly in SSRUs C and D until 2002/03, and then became as important in SSRU B until 2005/06 and then declined in more recent years.

8. Depredation has an impact on the catch landed from each line.

9. WG-IMAF-09/12 estimated that the depredation over the 2002/03–2007/08 period was 1 200 tonnes, this implies a depredation rate of 41%.

10. A pot trial cruise has been planned for February 2010 to try to find solutions to the depredation problem and the seabird mortality problem.

4. Stock assessment

11. No formal stock assessment has been carried out for Subarea 58.6. Tagging has been carried out since 2006, so far 2 786 fish have been tagged from commercial longliners at Crozet. Of the tagged fish, 106 were recaptured; 98 from French tagging and 8 from tagging at Heard Island.

4.1 Research requirements

12. The Working Group encouraged the estimation of biological parameters for Crozet, and the development of a stock assessment for this area. The Working Group encouraged France to continue its tagging program in Subarea 58.6.

5. By-catch

5.1 By-catch removals

13. By-catch removals from the longline fishery for *D. eleginoides* are detailed in Table 4. In order of importance, macrourids (*Macrourus carinatus*), rajids (*Raja taaf*) and morids (*Antimora rostrata*) form the bulk of the by-catch. Only the last species is fully discarded, the others being partly or totally processed.

Table 4: Catch history for by-catch species (macrourids, rajids and *Antimora rostrata*) taken in the longline fishery for *Dissostichus eleginoides* in the French EEZ in Subarea 58.6 (source: fine-scale data). Last season is incomplete.

Season	Macrourids reported catch (tonnes)	Rajids reported catch (tonnes)	<i>Antimora rostrata</i> reported catch (tonnes)
1998/99	1	3	0
1999/00	97	31	12
2000/01	99	6	1
2001/02	196	36	11
2002/03	147	92	19
2003/04	116	73	56
2004/05	132	93	67
2005/06	149	121	53
2006/07	117	83	43
2007/08	135	46	64
2008/09	170	42	75

5.2 Assessments of impact on affected populations

14. No stock assessments of individual by-catch species were undertaken.

5.3 Mitigation measures

15. The Working Group recommended that areas with high by-catch rates should be avoided.

6. By-catch of birds and mammals

16. There were 23 seabird mortalities observed inside the French EEZ in Subarea 58.6 in 2008/09 (WG-IMAF-09/4 Rev. 2, paragraph 3). These consisted of 19 white-chinned petrels (*Procellaria aequinoctialis*), 3 northern giant petrels (*Macronectes halli*) and 1 grey petrel (*P. cinerea*). By-catch rates (birds/thousand hooks) and estimated by-catch of seabirds are shown in Table 5.

Table 5: Total extrapolated incidental mortality of seabirds and observed mortality rates (birds/thousand hooks) in longline fisheries in the French EEZ at Crozet (Subarea 58.6). Data from SC-CAMLR-XXVIII, Annex 7, Table 4.

Fishing season	By-catch rate	Estimated by-catch
2000/01*		
2001/02*	0.1672	1243
2002/03*	0.1092	720
2003/04*	0.0875	343
2004/05	0.049	242
2005/06	0.0362	235
2006/07	0.065	314
2007/08	0.0305	131
2008/09	0.015	93

* The number of observed hooks has not been collected and the values given are from the total number of hooks set.

17. Further details of seabird by-catch in previous seasons can be found in the Scientific Committee reports.

18. No mammals have been reported as by-catch in Subarea 58.6 in the 2008/09 season.

19. WG-IMAF assessed the level of risk of incidental mortality of seabirds in Subarea 58.6 as category 5 (high) (SC-CAMLR-XXVIII, Annex 7, Table 14 and Figure 2).

6.1 Mitigation measures

20. Details of mitigation measures applied in previous seasons can be found in the Scientific Committee reports (SC-CAMLR-XXIII, Annex 5, paragraphs 7.35 to 7.45; SC-CAMLR-XXV, Annex 5, Appendix D, paragraph 14; SC-CAMLR-XXVI, paragraph 5.7; SC-CAMLR-XXVII, paragraphs 5.6 to 5.11). Measures in place during the 2008/09 season included:

- (i) line-weighting regimes as specified in Conservation Measure 24-02 are applicable to French autoliners;
- (ii) at least two streamer lines meeting the CCAMLR specifications are compulsory. Some vessels use up to seven streamer lines. The aim for the season was to increase the aerial coverage to at least 100 m;
- (iii) the use of a Brickle curtain-type device during hauling was compulsory;
- (iv) the discarding of hooks and the use of black lines are prohibited;
- (v) night setting of longlines was implemented throughout the season;
- (vi) dumping of offal during setting and hauling was prohibited.

21. New mitigation measures for 2009/10:

- (i) Continuation of an action plan –

The plan contains action details for the following five elements:

- prescription of conservation measures
- regulatory instruments
- education and training
- data collection
- research and development.

- (ii) Improvement to streamer lines –

New streamers will be tested to ensure that an aerial coverage of 100 m is attained by all vessels. The construction and materials used will be standard across all vessels.

- (iii) Implementation of the Brickle curtain –

The designs will be modified to achieve lower catch rates.

- (iv) Night setting of longlines –

This measure will continue to be implemented in the 2009/10 season.

- (v) Offal discharge –

Dumping of offal during setting and hauling is prohibited. Offal will be retained for discharge when the vessel is in transit.

- (vi) Hook discards –

There will continue to be a prohibition of discarding hooks.

7. Harvest controls and management advice

7.1 Conservation measures

22. Various national conservation and fisheries enforcement measures (in addition to those agreed by CCAMLR) are in force, such as:

- annual catch limit and limitation of number of longliners (seven)
- obligatory logbooks
- allocation of fishing effort (not more than two longliners simultaneously per 0.5° latitude × 1° longitude rectangle)
- one French observer on board each licensed vessel
- minimum depth limit (500 m)
- minimum legal size (60 cm)
- mitigation measures for the reduction of seabird mortality
- landings occur at one place (Réunion Island)
- skates to be cut off if not processed (started December 2006)
- port inspection.

7.2 Management advice

23. The Working Group encouraged the estimation of biological parameters for *D. eleginoides* in Subarea 58.6 (French EEZ), and the development of a stock assessment for this area. The Working Group encouraged France to continue its tagging program in Subarea 58.6.

24. The Working Group recommended that avoidance of zones of specific high by-catch abundance should also be considered.

25. No new information was available on the state of fish stocks in Subarea 58.6 outside areas of national jurisdiction. The Working Group therefore recommended that the prohibition of directed fishing for *D. eleginoides*, described in Conservation Measure 32-11, remain in force.

26. The Working Group noted that France had made significant progress in mitigating by-catch, including area/season closures (SC-CAMLR-XXVI, Annex 6, paragraph II.23). It noted that the CPUE analysis would probably be robust to these changes so long as detailed haul-by-haul data continued to be available.