

**FISHERY REPORT: CLOSED FISHERY FOR
DISSOSTICHUS SPP. IN DIVISIONS 58.4.4a AND 58.4.4b**

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FISHERY REPORT: CLOSED FISHERY FOR *DISSOSTICHUS* SPP. IN DIVISIONS 58.4.4a AND 58.4.4b

1. Details of the fishery

The longline fishery for *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b¹ began as a new fishery in 1997/98 (CM 138/XVI). These divisions were managed as a single area and a catch limit for *Dissostichus* spp. applied to fishing north of 60°S, and in waters outside areas of national jurisdiction². Following the Commission's recognition that high levels of IUU fishing for *Dissostichus* spp. in the Convention Area had rendered it unrealistic to consider this fishery as 'new' (CCAMLR-XVIII, paragraph 10.14), the fishery was reclassified as exploratory in 1999. In 1999 the divisions were subdivided into SSRUs A, B, C and D.

2. In 2002, the Commission expressed concern regarding the low levels of stocks of *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b and the high levels of IUU fishing in that region (CCAMLR-XXI, paragraph 11.36). Consequently, the Commission prohibited directed fishing for *Dissostichus* spp. in these divisions and the fishery for *Dissostichus* spp. was closed (CM 32-10). The Commission agreed that such prohibition shall apply at least until further scientific information is gathered and reviewed by the Scientific Committee and WG-FSA.

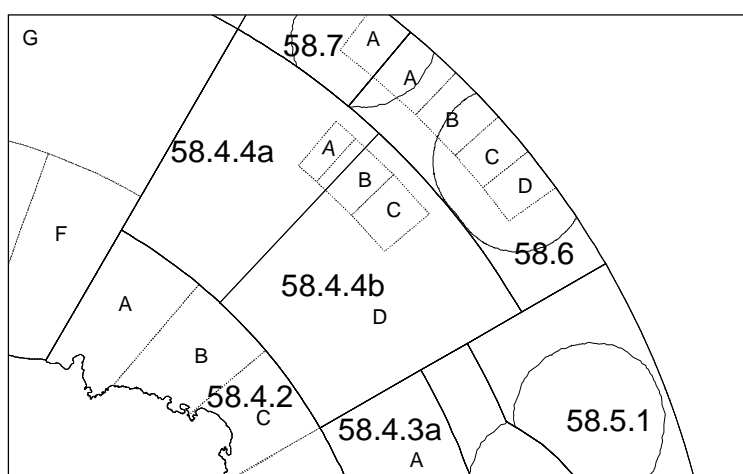


Figure 1: General map of Divisions 58.4.4a and 58.4.4b and location of SSRUs A, B, C and D.

¹ In 1995, Division 58.4.4 was subdivided into Division 58.4.4a (Ob Bank) and Division 58.4.4b (Lena Bank) (SC-CAMLR-XIV, Annex 5, paragraph 5.175).

² The South African EEZ at Prince Edward and Marion Islands extends into the northern part of Division 58.4.4a.

1.1 Reported catch

3. Two licensed longline vessels operated in the exploratory fishery for *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b in 1999/2000 and reported a total catch of 156 tonnes of *D. eleginoides* (Table 1(a)). In the following season, a single vessel fished briefly, reporting a total catch of 8 tonnes of *D. eleginoides*. The fishery was closed in December 2002 (CM 32-10). Most of the reported catch of *D. eleginoides* was taken in SSRUs A and D (Table 1(b)).

4. In 2007/08 and 2009/10, a Japanese-flagged longliner conducted research fishing in accordance with a research plan submitted under CM 24-01. The vessel caught 77 tonnes of *D. eleginoides* and <1 tonne of *D. mawsoni* in 2007/08, and 59 tonnes of *D. eleginoides* in 2009/10 (Tables 1(a) and 1(b)).

Table 1(a): Catch history for *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b. Catch limits are for both divisions combined, and apply to the north of 60°S. (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 removal (tonnes)
	Effort (number vessels)	Catch limit (tonnes)	<i>Dissostichus</i> spp.				Total		
			Reported catch (tonnes)						
			Division 58.4.4a		Division 58.4.4b				
		<i>D. eleginoides</i>	<i>D. mawsoni</i>	<i>D. eleginoides</i>	<i>D. mawsoni</i>				
1996/97	0	-	0	0	0	0	0	375	375
1997/98	0	580	0	0	0	0	0	1298	1298
1998/99	0	572	0	0	0	0	0	1519	1519
1999/00	2	370	84	0	72	0	156	1254	1410
2000/01	1	370	4	0	4	0	8	1247	1255
2001/02	0	103	0	0	0	0	0	880	880
2002/03	0	closed	0	0	0	0	0	110	110
2003/04	0	closed	0	0	0	0	0	0	0
2004/05	0	closed	0	0	0	0	0	220	220
2005/06	0	closed	0	0	0	0	0	104	104
2006/07	0	closed	0	0	0	0	0	109	109
2007/08	1	closed*	18	0	58	<1	77	0	77
2008/09	0	closed	0	0	0	0	0	0	0
2009/10	1	closed*	8	0	51	0	59	80	139

* Research fishing permitted in accordance with CM 24-01.

Table 1(b): Catch (tonnes) of *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b reported by SSRU (source: fine-scale data pro-rated by total reported catch in Table 1(a)).

Season	<i>D. eleginoides</i>				<i>D. mawsoni</i>			
	A	B	C	D	A	B	C	D
1999/00	84	5	14	53				
2000/01	4	4						
....								
2007/08	19	11	21	26				<1
2009/10	9	20	16	14				

1.2 IUU catch

5. Information on IUU activities indicated high levels of IUU fishing, and the estimated annual catch of *Dissostichus* spp. exceeded 1 000 tonnes in each season between 1997/98 and 2000/01 (Table 1(a)). An estimated total of 7 116 tonnes of *Dissostichus* spp. has been removed by IUU fishing. There was no evidence of IUU fishing in 2003/04, 2007/08 and 2008/09. The estimated IUU catch for 2009/10 was 80 tonnes in Division 58.4.4a.

1.3 Size distribution of catches

6. Most *D. eleginoides* caught in the fishery and during research fishing ranged from 50 to 100 cm in length in Division 58.4.4a and from 70 to 120 cm in Division 58.4.4b (Figure 2).

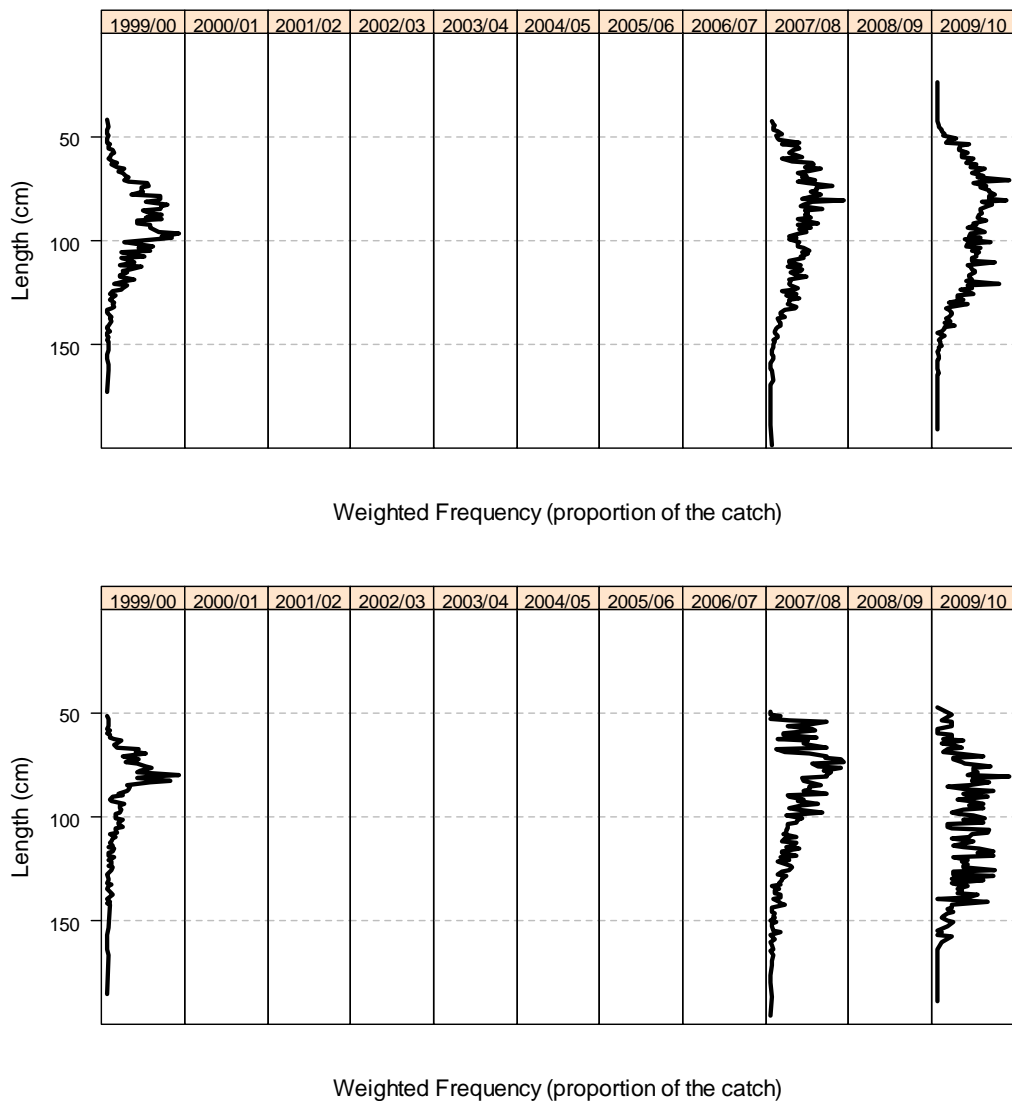


Figure 2: Catch-weighted length frequencies for *Dissostichus eleginoides* in Divisions 58.4.4a (top panel) and 58.4.4b (bottom panel) (source: observer, fine-scale and STATLANT data, and the length-weight relationships were taken from observations on *D. eleginoides* in Division 58.5.2).

2. Stocks and areas

7. No data are available on the stock structure of fish in this fishery.

3. Parameter estimation

3.1 Observations

8. Individual *D. eleginoides* were tagged and released by a Japanese-flagged vessel conducting research fishing in Divisions 58.4.4a and 58.4.4b in 2007/08 and 2009/10 (Table 2). A total of 639 *D. eleginoides* have been tagged and released, and 1 fish has been recaptured. Fish were tagged at a rate of 3.6 fish per tonne of green weight caught.

Table 2: Details of research survey effort and tagging in Divisions 58.4.4a and 58.4.4b beginning in 2007/08.

Season	Sets	Catch (tonnes)	Number tagged				Tagging rate	Tag overlap statistic	Number recaptured	Rajids tagged	
			SSRU A	SSRU B	SSRU C	SSRU D					Total
2007/08	118 ^a	77	64	73	72	71	280	3.64	medium	0	0
2008/09	Na	na	-	-	-	-	-	-	-	-	-
2009/10	94	59	40	126	98	95	359	6.08	high	1	19

^a The allocated catch was taken in 94 of a planned 117 sets.

9. A sample of otoliths collected in 2007/08 has been aged and results reported in WG-FSA-10/48. Ages of 214 otoliths (of 3 013 fish sampled) ranged from 5 to 50 years for females and from 5 to 46 years for males (Figure 3). These ages may be overestimated by one year due to an interpretation issue concerning the location of the first annulus.

3.2 Fixed parameter values

10. WG-FSA-10/48 calculated von Bertalanffy growth curves fitted to the estimated age and length data (Figure 3).

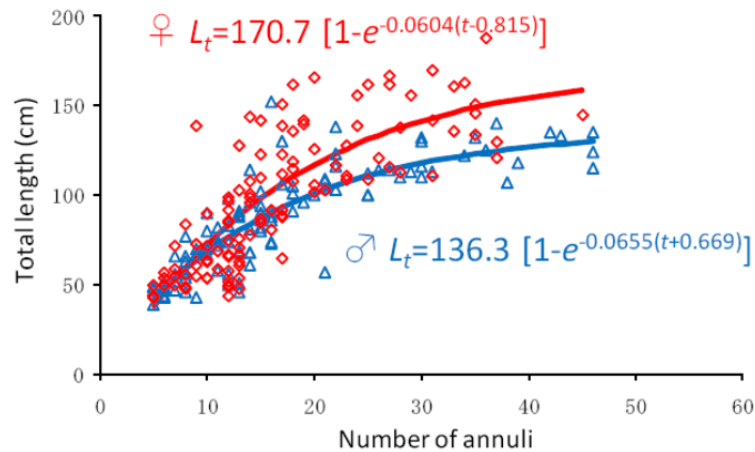


Figure 3: Estimated von Bertalanffy growth curves and parameter values for male and female *Dissostichus eleginoides* ($N = 214$) sampled in Divisions 58.4.4a and 58.4.4b in 2007/08. Figure reproduced from WG-FSA-10/48.

4. Stock assessment

11. None available for this fishery.

5. By-catch of fish and invertebrates

5.1 By-catch removals

12. Catches of by-catch species groups (macrourids, rajids and other species) reported in fine-scale data, their respective catch limits, and number of released alive are summarised in Table 2. A total of 19 out of 55 skates captured in 2009/10 were tagged and released.

Table 2: Catch history for by-catch species (macrourids, rajids and other species), catch limits and number of rajids released alive in Divisions 58.4.4a and 58.4.4b combined. Catch limits are for both divisions combined (see CM 33-03 for details). The fishery for *Dissostichus* spp. in these divisions was closed in 2002. MoR: Move-on rule only applied. (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)
1996/97	50		50			50	
1997/98	50		50			50	
1998/99	50		50			50	
1999/00	MoR	14	50	<1	0	50	<1
2000/01	MoR	<1	80	<1	0	80	<1
2001/02	160		80			80	
2002/03	closed		closed			closed	
2003/04	closed		closed			closed	
2004/05	closed		closed			closed	
2005/06	closed		closed			closed	
2006/07	closed		closed			closed	
2007/08	closed*	3	closed*	<1	0	closed*	1
2008/09	closed		closed			closed	
2009/10	closed*	1	closed*	<1	55	closed*	<1

* Research fishing permitted in accordance with CM 24-01.

5.2 Assessment of impacts on affected populations

13. None available for this fishery.

5.3 Identification of levels of risk

14. None available for this fishery.

5.4 Mitigation measures

15. None applied as this fishery is currently closed.

6. By-catch of birds and mammals

6.1 By-catch removals

16. There have been no observed seabird or marine mammal mortalities reported from Divisions 58.4.4a and 58.4.4b.

17. WG-IMAF did not meet in 2010, however, in 2009 it assessed the risk level of seabirds in this fishery in Divisions 58.4.4a and 58.4.4b as category 3 (average) (SC-CAMLR-XXVIII, Annex 7, Table 14 and Figure 2).

6.2 Mitigation measures

18. None applied as this fishery is currently closed.

7. Ecosystem implications/effects

19. No evaluation available for this fishery.

8. Harvest controls and management advice

8.1 Conservation measures

20. The exploratory fishery for *Dissostichus* spp. in Divisions 58.4.4a and 58.4.4b is closed (CM 32-10). Directed fishing for *Dissostichus* spp. in these divisions is prohibited at least until further scientific information is gathered and reviewed by the Scientific Committee and WG-FSA.

8.2 Management advice

21. An alternative method of estimating a precautionary research survey catch was described in WG-FSA-09/44, and developed further in WG-FSA-10/42 Rev. 1. At the meeting, the estimated B_0 value and the current stock biomass were calculated using this method for two stock status scenarios. Population status in each case was projected forward using the GYM (configured using stock parameters from WG-FSA-10/48, and the mean age of first and full selection by the research catch, as 8 and 11 years).

- (i) Scenario 1 used the estimated total catch history (legal and IUU) and assumed the biomass in 2010 to be 20% of B_0 . An estimate of B_0 was then calculated at 7 900 tonnes. Using the relationship in Figure 3 of WG-FSA-10/42 Rev. 1, representing a precautionary research catch, 0.62% of B_0 is 49 tonnes.
- (ii) Scenario 2 used the same catch history and assumed the status at the end of the bulk of IUU fishing (in 2002) was 20% of B_0 . B_0 was then back-calculated to be 9 200 tonnes. This scenario then assumes some recovery through a forward projection, estimating the biomass in 2010 to be 33% of B_0 . A precautionary catch limit (as for scenario 1) is then 1.05% of B_0 , or 97 tonnes.