

**FISHERY REPORT: EXPLORATORY FISHERY  
FOR *DISSOSTICHUS* SPP. IN DIVISION 58.4.3B**

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## **FISHERY REPORT: EXPLORATORY FISHERY FOR *DISSOSTICHUS* SPP. IN DIVISION 58.4.3B**

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

The longline fishery for *Dissostichus* spp. in Division 58.4.3 began as a new fishery in 1996/97 (Conservation Measure 113/XV). Following the Commission's decision 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), and renewed interest in this fishery, the fishery was reclassified as exploratory in 2000. That year, the Commission agreed on four exploratory fisheries for *Dissostichus* spp. in this region in 2000/01: exploratory trawl fisheries on BANZARE Bank (Conservation Measure 203/XIX) and Elan Bank (Conservation Measure 205/XIX); and exploratory longline fisheries outside areas of national jurisdiction at BANZARE Bank (Conservation Measure 204/XIX) and Elan Bank (Conservation Measure 206/XIX).

2. In 2001, the boundaries of Division 58.4.3 were rearranged on the basis of ecological considerations, and two new divisions were formed: Division 58.4.3a (Elan Bank) and Division 58.4.3b (BANZARE Bank) (see Figure 1). The Commission agreed to exploratory fishery for *Dissostichus* spp. in each of these new divisions, outside areas of national jurisdiction.

3. In 2005/06, the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b was limited to Australian, Chilean, Korean, Spanish and Uruguayan vessels using longlines only, and no more than one vessel per country was permitted to fish at any one time (Conservation Measure 41-07). The precautionary catch limit for *Dissostichus* spp. was 300 tonnes. The catch limits for by-catch species were defined in conservation Measure 33-03. The fishing season was from 1 May to 31 August 2006. Fishing was permitted outside the prescribed season provided that each vessel demonstrated its capacity to comply with the requirements for longline weighting outlined in Conservation Measure 24-02.

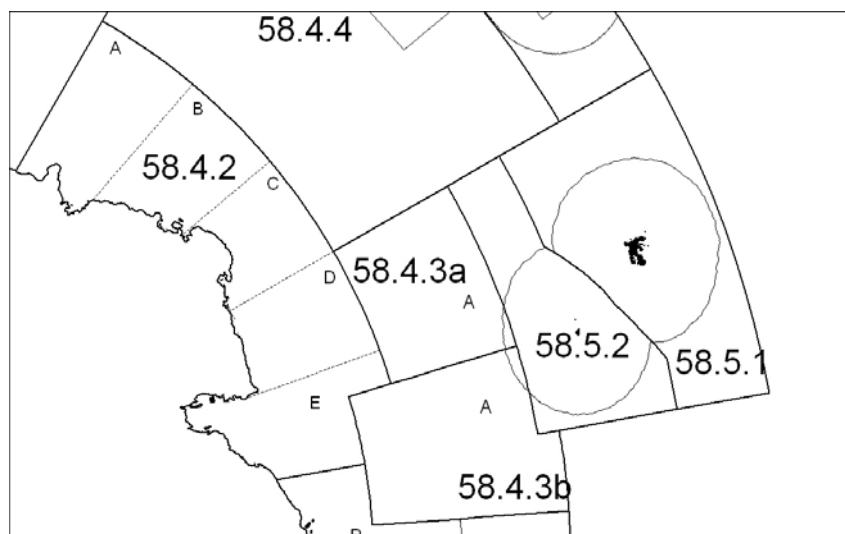


Figure 1: General map of Division 58.4.3b (BANZARE Bank). This division consists of a single SSRU.

### 1.1 Reported catch

4. Licensed longline vessels have fished the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b since 2003/04, and the target species is *D. mawsoni* (Table 1). In 2005/06, four vessels fished and reported a total catch of 361 tonnes of *Dissostichus* spp. (120 % of the precautionary catch limit for the fishery); the fishery was closed on 13 March 2006 (CCAMLR-XXV/BG/3, Table 3).

### 1.2 IUU catch

5. Information on IUU activities indicated high levels of IUU fishing in 2004/05 and 2005/06 with estimated catches in excess of 1 000 tonnes of *Dissostichus* spp. in each season (Table 1, see also WG-FSA-06/11 Rev. 2). The total extraction of *Dissostichus* spp. estimated in 2004/05 was 1 312 tonnes (4.4 times the catch limit), and in 2005/06 was 2 169 tonnes (7.2 times the catch limit).

Table 1: Catch history for *Dissostichus* spp. in Division 58.4.3b (source: STATLANT data to 2004/05, and catch and effort data in 2005/06).

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total extraction (tonnes)
	Effort (number of vessels)		Catch limit (tonnes)	Dissostichus spp.				
	Limit	Reported		Reported catch (tonnes)				
				<i>D. eleginoides</i>	<i>D. mawsoni</i>	Total		
2003/04	6	1	300	1	6	7	-	7
2004/05	5	4	300	1	296	297	1015	1312
2005/06	5	4	300	0	360	361	1808	2169

### 1.3 Size distribution of catches

6. Most *D. mawsoni* caught in the fishery ranged from 110 to 170 cm in length, with a broad mode at approximately 130–160 cm (Figure 2).

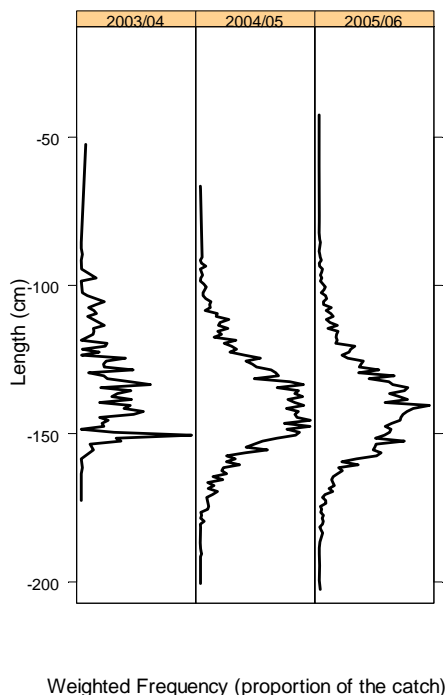


Figure 2: Catch-weighted length frequencies for *Dissostichus mawsoni* in Division 58.4.3b derived from observer, fine-scale and STATLANT data reported by 5 October 2005. (The length–weight relationship used in these plots was taken from observations on *D. mawsoni* in Subarea 88.1.)

## 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. A demersal trawl survey has been undertaken in this area in 1999, which caught only two fish of *Dissostichus* spp. in 40 shots taken across the area (SC-CAMLR-XVIII, Annex 5, paragraph 3.79; WG-FSA-99/69).

9. Vessels operating in this fishery are required to conduct fishery-based research in accordance with Conservation Measure 41-01. This includes the collection of detailed catch, effort and biological data (Annex 41-01/A), the setting of research lines (Annex 41-01/B) and participation in the tagging program (Annex 41-01/C).

10. Vessels, on first entry into an SSRU, are required to make 10 research longline hauls. A further 10 research hauls are required during the course of fishing. The number of research hauls reported in fine-scale data are summarised in Table 2.

11. Vessels are also required to tag and release *Dissostichus* spp. at a rate of one fish per tonne of green-weight catch, and vessels may discontinue tagging once 500 fish have been tagged. A total of 392 *D. mawsoni* and 14 *D. eleginoides* (total 406 fish) have been tagged and released and 7 fish have been recaptured (Table 3).

12. The Working Group noted that tagging rates by vessels in this area have apparently been much lower than tagging rates by the same vessels in other areas. The Working Group requested information from the vessels and observers operating in Subarea 58.4 on the reasons for this lower tagging rate which may be due to operational constraints or poor condition of toothfish caught.

Table 2: Research (R) and commercial (C) longline hauls reported by vessels operating in the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b (source: fine-scale data to October 2006).

Season	Flag State	Vessel name	Number of hauls		
			R	C	Total
2003/04	Australia	<i>Eldfisk</i>	13	6	19
2004/05	Chile	<i>Globalpesca II</i>	10	9	19
	Korea, Republic of	<i>Yeon Seong No. 829</i>	30	67	97
	Spain	<i>Arnela</i>	20	8	28
		<i>Galaecia</i>	10	6	16
2005/06	Chile	<i>Globalpesca I</i>	11		11
	Spain	<i>Galaecia</i>	21	47	68
		<i>Tronio</i>	6	63	69
	Uruguay	<i>Paloma V</i>	23	20	43

Table 3: Number of individuals of *Dissostichus* spp. tagged and released and the tagging rate (fish per tonne of green weight caught) reported by vessels operating in the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b. The total number of tagged fish recaptured to date in Division 58.4.3b is also included. (Source: observer data and catch and effort reports to October 2006.)

Season	Flag State	Vessel name	<i>Dissostichus</i> spp. tagged and released	
			Number of fish*	Tagging rate
2003/04	Australia	<i>Eldfisk</i>	0	0
2004/05	Chile	<i>Globalpesca II</i>	13	0.33
	Korea, Republic of	<i>Yeon Seong No. 829</i>	1	0.08
	Spain	<i>Arnela</i>	206	0.93
	Spain	<i>Galaecia</i>	11	0.52
2005/06	Chile	<i>Globalpesca I</i>	0	0
	Spain	<i>Galaecia</i>	97	0.66
	Spain	<i>Tronio</i>	38	0.23
	Uruguay	<i>Paloma V</i>	40	0.85
Total number of fish tagged and released			406	
Total number of tagged fish recaptured in Division 58.4.3b			7	

\* 14 fish tagged were *D. eleginoides*

### 3.2 Fixed parameter values

13. None available for this fishery

## 4. Stock assessment

14. The catch limits in this fishery were agreed by the Commission based on advice provided by the Scientific Committee.

## 5. By-catch of fish and invertebrates

### 5.1 By-catch removals

15. Catches of by-catch species groups (macrourids, rajids and other species) reported in fine-scale data, and respective catch limits, are summarised in Table 4. The by-catch in this fishery consists predominantly of macrourids (up to 7 tonnes per season). Catches of rajids have reached 6 tonnes per season (note that rajids cut from lines and released are not included in these estimates).

Table 4: Catch history for by-catch species (macrourids, rajids and other species) and catch limits in Division 58.4.3b. Rajids cut from lines and released are not included in these estimates. Catch limits are for the whole fishery (see Conservation Measure 33-03 for details). (Source: fine-scale data to October 2006.)

Season	Macrourids		Rajids		Other species	
	Catch limit (tonnes)	Reported catch (tonnes)	Catch limit (tonnes)	Reported catch (tonnes)	Catch limit (tonnes)	Reported catch (tonnes)
2003/04	159	0	50	0	20	
2004/05	159	7	50	6	20	0
2005/06	159	6	50	1	20	0

### 5.2 Assessment of impacts on affected populations

16. The current by-catch limit for *Macrourus* spp. was estimated in 2003 using the precautionary approach adopted for krill (SC-CAMLR-XXII, Annex 5, paragraphs 5.250 to 5.252; van Wijk et al., 2003), where the estimate of  $B_0$  was taken from the trawl survey in 1999 (van Wijk et al., 2000).

17. No new information was available for this fishery.

### 5.3 Identification of levels of risk

18. None available for this fishery

## 5.4 Mitigation measures

19. The Commission has agreed that, where possible, vessels should release rays from the lines by cutting the snoods when the rays are still in the water, unless requested not to do so by the scientific observer during the biological sampling period (CCAMLR-XXIV, paragraph 4.51).

## 6. By-catch of birds and mammals

### 6.1 By-catch removals

20. Details of seabird by-catches are summarised in Table 5.

Table 5: Seabird by-catch limit, observed mortality rate and total estimated mortality of seabird by-catch in Division 58.4.3b (from Appendix D, Table 3).

Season	By-catch limit (number of birds)	Mortality rate (birds/thousand hooks)	Total estimated mortality (number of birds)
2003/04	3*	0	0
2004/05	3*	0	0
2005/06	3*	0.0002	2

\* Per vessel during daytime setting

21. No marine mammal interactions or mortalities were reported.

22. Ad hoc WG-IMAF assessed the risk level of seabirds in this fishery in Division 58.4.3b as category 3 (average) (Appendix D, Table 19).

### 6.2 Mitigation measures

23. Conservation Measure 25-02 applies to this fishery and in recent years has been linked to an exemption for night setting in Conservation Measure 24-02 and subject to a seabird by-catch limit. Offal and other discharges are regulated under annual conservation measures (e.g. Conservation Measures 41-09 and 41-10).

## 7. Ecosystem implications/effects

24. No evaluation available for this fishery.



## 8. Harvest controls for 2005/06 and advice for 2006/07

### 8.1 Conservation measures

25. The limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b are defined in Conservation Measure 41-07. The limits in force in 2005/06 and the Working Group's advice to the Scientific Committee for the forthcoming 2006/07 season are summarised in Table 6.

Table 6: Limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.3b in 2005/06 (Conservation Measure 41-07) and advice to the Scientific Committee for 2006/07.

Element	Limit in 2005/06	Advice for 2006/07
1. Access	No more than one vessel per country at any one time.	Carry forward
2. Catch limit	Precautionary catch limit for <i>Dissostichus</i> spp. was 300 tonnes outside areas of national jurisdiction.	Carry forward
3. Season	1 May to 31 August, with fishing permitted outside the prescribed season provided that each vessel demonstrated its capacity to comply with the requirements for longline weighting outlined in Conservation Measure 24-02.	Same period and conditions
4. By-catch	Regulated by CM 33-03.	Carry forward
5. Mitigation	In accordance with CM 25-02, except paragraph 4 if requirements of CM 24-02 are met. Limit of three (3) seabirds per vessel during daytime setting.	Carry forward Carry forward
6. Observers	At least one scientific observer appointed in accordance with the CCAMLR Scheme.	Carry forward
7. Data	Five-day catch and effort reporting Haul-by-haul catch and effort data Biological data reported by the CCAMLR scientific observer.	Carry forward Carry forward Carry forward
8. Research	Fishery-based research in accordance with CM 41-01, including the collection of detailed catch, effort and biological data (Annex 41-01/A), setting of research hauls (Annex 41-01/B) and tagging (Annex 41-01/C).	Carry forward

### 8.2 Management advice for *D. mawsoni* in Subarea 58.4

26. The Working Group recommended urgent consideration of how to acquire appropriate data for assessments of stock status and yield of *D. mawsoni* in the Indian Ocean sector because of (i) the lack of progress towards assessments in these divisions and (ii) a rapidly escalating catch in the region.

27. The Working Group requested submissions by Members on stock structure, biological parameters (e.g. growth, length–weight relationship, maturity), recruitment and methods for assessment of these stocks.

28. The Working Group recommended that tagging rates in Divisions 58.4.1 and 58.4.2 should be raised to three per tonne.

## References

- van Wijk, E.M., A.J. Constable, R. Williams and T. Lamb. 2000. Distribution and abundance of *Macrourus carinatus* on BANZARE Bank in the southern Indian Ocean. *CCAMLR Science*, 7: 171–178.
- van Wijk, E.M., R. Williams and A.J. Constable. 2003. Age, growth and size at sexual maturity of *Macrourus carinatus* caught as by-catch in Australian sub-Antarctic trawl fisheries. *CCAMLR Science*, 10: 139–151.