

**FISHERY REPORT: EXPLORATORY FISHERY
FOR *DISSOSTICHUS* SPP. IN DIVISION 58.4.2**

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FISHERY REPORT: EXPLORATORY FISHERY FOR *DISSOSTICHUS* SPP. IN DIVISION 58.4.2

1. Details of the fishery

The exploratory fishery for *Dissostichus* spp. in Division 58.4.2 was first agreed by the Commission in 1999/2000. This was a trawl fishery which was permitted in association with a new fishery for *Chaenodraco wilsoni*, *Lepidonotothen kempfi*, *Trematomus eulepidotus* and *Pleuragramma antarcticum* (Conservation Measure 186/XVIII). The exploratory trawl fishery was also permitted in 2000/01, and in 2001/02 in association with a new fishery for *Macrourus* spp. In 2002/03, the fishery for *Dissostichus* spp. in Division 58.4.2 changed to an exploratory longline fishery.

2. In 2005/06, the exploratory fishery for *Dissostichus* spp. in Division 58.4.2 was limited to Australian, Chilean, Korean, New Zealand and Spanish vessels using longlines only (Conservation Measure 41-11). The precautionary catch limit for *Dissostichus* spp. was 780 tonnes, of which no more than 260 tonnes could be taken in SSRUs A, C and E (see Figure 1). Two other SSRUs (B and D) were closed to fishing. Fishing was prohibited in depths less than 550 m in order to protect benthic communities. The catch limits for by-catch species were defined in conservation Measure 33-03. The fishing season was from 1 December 2005 to 30 November 2006.

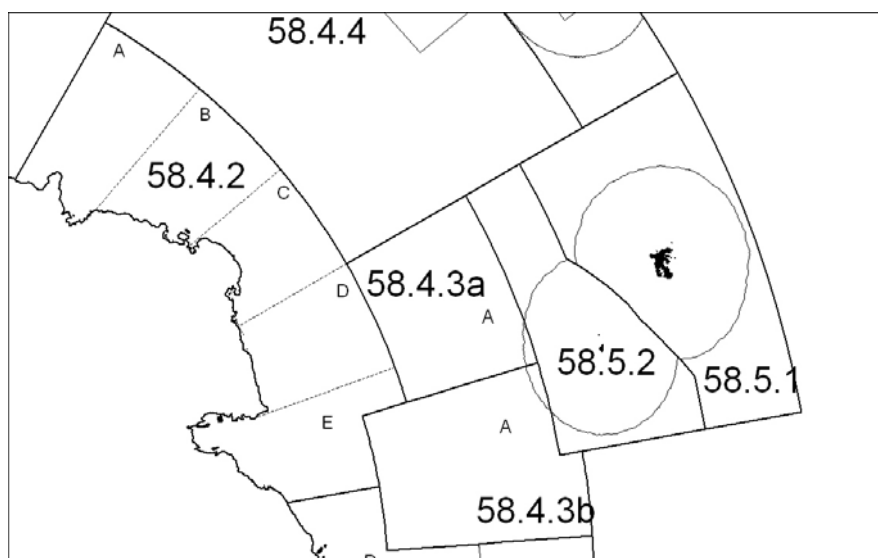


Figure 1: General map of Division 58.4.2 and location of SSRUs (A–E in that division).

1.1 Reported catch

3. Licensed longline vessels have fished the exploratory fishery for *Dissostichus* spp. in Division 58.4.2 since 2003/04, and the target species is *D. mawsoni* (Tables 1(a) and 1(b)). In 2005/06, three vessels fished in SSRUs A, C and E and reported a total catch of 164 tonnes of *Dissostichus* spp. (Table 1(b), Figure 1); this catch represented 21% of the precautionary catch limit for the fishery.

4. The reported catches of *Dissostichus* spp. in SSRUs A, C and E were 4 tonnes (1% of catch limit), 4 tonnes (1% of catch limit) and 156 tonnes (60% of catch limit) respectively (CCAMLR-XXV/BG/3, Table 3).

1.2 IUU catch

5. Information on IUU fishing indicated that approximately 602 tonnes of *Dissostichus* spp. had been taken during IUU fishing in Division 58.4.2 between 2002/03 and 2005/06 (Table 1(a); see also WG-FSA-06/11 Rev. 2). As a result, the total extraction of *Dissostichus* spp. was estimated at 1 114 tonnes, and this was in excess of the catch limit for 2005/06.

Table 1(a): Catch history for *Dissostichus* spp. in Division 58.4.2 (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)	<i>Dissostichus</i> spp.				
	Limit	Reported		Reported catch (tonnes)				
				<i>D. eleginoides</i>	<i>D. mawsoni</i>	Total		
2002/03	-	2	500	0	117	117	98	215
2003/04	-	1	500	0	20	20	197	217
2004/05	8	4	780	1	125	127	86	213
2005/06	7	3	780	0	163	164	221	385

Table 1(b): Catch of *Dissostichus* spp. in Division 58.4.2 reported by SSRU (source: Reported catch in Table 1(a) pro-rated using fine-scale data to 2005/06).

Season	SSRU				
	A	B	C	D	E
2002/03			17	17	83
2003/04				5	15
2004/05	63		16		49
2005/06	4		4		157

1.3 Size distribution of catches

6. Most *D. mawsoni* caught in the fishery ranged from 50 to 170 cm in length (Figure 2). A bimodal distribution was observed from 2002/03 to 2004/05, with broad modes at approximately 60–80 cm and 130–160 cm, while the distribution in 2005/06 peaked between 125–150 cm. This peak at 60–80 cm was not seen in 2005/06. The detailed distribution of catches will have to be investigated in order to understand these changes.

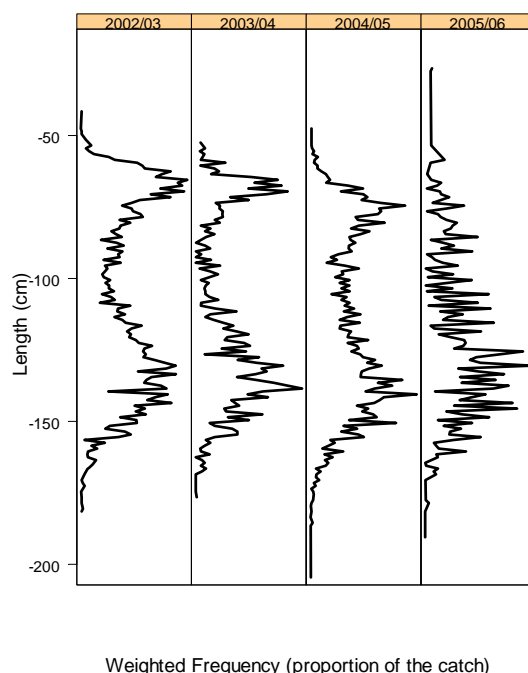


Figure 2: Catch-weighted length frequencies for *Dissostichus mawsoni* in Division 58.4.2 derived from observer, fine-scale and STATLANT data reported by 5 October 2005. (The length–weight relationship used in these plots was taken from observations on *D. mawsoni* in Subarea 88.1.)

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. 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).

9. 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.

10. 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 463 *D. mawsoni* and 15 *D. eleginoides* (total 478 fish) have been tagged

and released; there are no reports of recaptures (Table 3). Of the fish tagged and released, 237 fish were in SSRU A, 51 fish in SSRU C, and 190 fish in SSRU E. No fish were tagged in SSRU D in the first two years of the fishery.

Table 2: Research (R) and commercial (C) longline hauls reported by vessels operating in the exploratory fishery for *Dissostichus* spp. in Division 58.4.2 (source: fine-scale data to October 2006).

Season	Flag State	Vessel name	SSRU	Number of hauls		
				R	C	Total
2002/03	Australia	<i>Eldfisk</i>	C	21	17	38
		<i>Eldfisk</i>	D	16	4	20
		<i>Eldfisk</i>	E	20	63	83
2003/04	Australia	<i>Eldfisk</i>	D	10	8	18
		<i>Eldfisk</i>	E	19	9	28
2004/05	Chile	<i>Globalpesca II</i>	A	20	2	22
		<i>Globalpesca II</i>	E	8		8
	Korea, Republic of	<i>Bonanza No. 707</i>	A	15	38	53
		<i>Bonanza No. 707</i>	C	*	18	18
	New Zealand	<i>Janas</i>	A	15	2	17
		<i>Janas</i>	E	20	7	27
	Spain	<i>Arnela</i>	E	13	7	20
2005/06	Chile	<i>Globalpesca I</i>	A	8		8
		<i>Globalpesca I</i>	C	4		4
		<i>Globalpesca I</i>	E	19	16	35
	Korea, Republic of	<i>Insung No. 2</i>	E	20	22	42
		<i>Galaecia</i>	E	19	2	21

* Research hauls were not identified in the data

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 58.4.2. The total number of tagged fish recaptured to date in Division 58.4.2 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
2002/03	Australia	<i>Eldfisk</i>	-	-
2003/04	Australia	<i>Eldfisk</i>	-	-
2004/05	Chile	<i>Globalpesca II</i>	145	5.79
	Korea, Republic of	<i>Bonanza No. 707</i>	141	2.57
		New Zealand	<i>Janas</i>	45
	Spain	<i>Arnela</i>	11	1.34
2005/06	Chile	<i>Globalpesca I</i>	24	0.91
	Korea, Republic of	<i>Insung No. 2</i>	101	0.80
		Spain	<i>Galaecia</i>	11
Total number of fish tagged and released			478	
Total number of tagged fish recaptured in Division 58.4.2			0	

* 15 fish tagged were *D. eleginoides*

3.2 Fixed parameter values

11. None available for this fishery.

4. Stock assessment

12. 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

13. 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 28 tonnes per season). Catches of rajids have been reported up to 3 tonnes per season (note that rajids cut from lines and released are not included in these estimates).

14. The Working Group noted that the reported catch of macrourids in the fishery in 2004/05 was relatively higher (22% of the catch of *Dissostichus* spp.) when fishing was concentrated in SSRU A, than in other seasons (2–10% of the catch of *Dissostichus* spp.) when fishing was concentrated in SSRU E.

Table 4: Catch history for by-catch species (macrourids, rajids and other species) and catch limits in Division 58.4.2. 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)
2002/03	250*	12	250	0	100*	1
2003/04	80	1	50	0	20*	0
2004/05	124	28	50	3	100	2
2005/06	124	4	50	0	100	1

* Additional catch limits in place for species when targeted

5.2 Assessment of impacts on affected populations

15. None available for this fishery.

5.3 Identification of levels of risk

16. None available for this fishery.

5.4 Mitigation measures

17. 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

18. 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 58.4.2 (from Appendix D, Table 3).

Season	By-catch limit (number of birds)	Mortality rate (birds/thousand hooks)	Total estimated mortality (number of birds)
2002/03	3*	-	-
2003/04	3*	-	-
2004/05	3*	0	0
2005/06	3*	0	0

* Per vessel during daytime setting

19. No marine mammal interactions or mortalities were reported.
20. Ad hoc WG-IMAF assessed the risk level of seabirds in this fishery in Division 58.4.2 as category 2 (average to low) (Appendix D, Table 19).

6.2 Mitigation measures

21. 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

22. No evaluation available for this fishery.

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

8.1 Conservation measures

23. The limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.2 are defined in Conservation Measure 41-05. 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 58.4.2 in 2005/06 (Conservation Measure 41-05) and advice to the Scientific Committee for 2006/07.

Element	Limit in 2005/06	Advice for 2006/07
1. Catch limit	Precautionary catch limit for <i>Dissostichus</i> spp. was 780 tonnes, and catch limits for each SSRU was as follows: A – 260 tonnes; B – 0 tonnes; C – 260 tonnes; D – 0 tonnes; E – 260 tonnes.	Carry forward
2. Season	1 December to 30 November	Same period
3. By-catch	Regulated by CM 33-03	Carry forward
4. 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. No offal discharge.	Carry forward Carry forward
5. Observers	At least two (2) scientific observers, one of whom shall be appointed in accordance with the CCAMLR Scheme.	Carry forward
6. 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
7. 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. Discharge	Prohibition from discharging oil or fuel products, oily residues, garbage, food wastes >25mm, poultry products, sewage within 12 n miles of land or ice shelves or while travelling < 4 knots, and incineration ash.	Carry forward
9. Other	Live poultry or other living birds shall not be brought into Division 58.4.2, and any dressed poultry not consumed shall be removed from that division.	Carry forward

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

24. 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.

25. 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.

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