

**FISHERY REPORT: EXPLORATORY FISHERY
FOR *DISSOSTICHUS* SPP. IN SUBAREA 48.6**

CONTENTS

	Page
1. Details of the fishery	1
1.1 Reported catch	2
1.2 IUU catch	2
1.3 Size distribution of catches	2
2. Stocks and areas	3
3. Parameter estimation	3
3.1 Observations	3
3.2 Fixed parameter values	4
4. Stock assessment	4
5. By-catch of fish and invertebrates	5
5.1 By-catch removals	5
5.2 Assessment of impacts on affected populations	5
5.3 Identification of levels of risk	5
5.4 Mitigation measures	5
6. By-catch of birds and mammals	5
6.1 By-catch removals	5
6.2 Mitigation measures	6
7. Ecosystem implications/effects	6
8. Harvest controls and management advice	6
8.1 Conservation measures	6
8.2 Management advice	7

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1. Details of the fishery

The longline fishery for *Dissostichus* spp. in Subarea 48.6 began as a new fishery in 1996/97 (Conservation Measure 114/XV). In 1999, the Commission agreed 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 the fishery was re-classified as exploratory.

2. In 2006/07, the exploratory fishery for *Dissostichus* spp. in Subarea 48.6 was limited to Japanese, Korean, New Zealand and Norwegian flagged vessels using longlines only, and no more than one vessel per country was permitted to fish at any one time (Conservation Measure 41-04). The precautionary catch limit for *Dissostichus* spp. was 455 tonnes north of 60°S (SSRU A) and 455 tonnes south of 60°S (SSRUs B–F; see Figure 1). The catch limits for by-catch species were defined in Conservation Measure 33-03. The fishing season was from 1 December 2006 to 30 November 2007.

3. The Japanese-flagged vessel operating in this fishery has been using a new type of longline (WG-FSA-06/15; see also SC-CAMLR-XXIV, Annex 5, paragraphs 3.23 and 7.21; SC-CAMLR-XXV, Annex 5, paragraph 3.14).

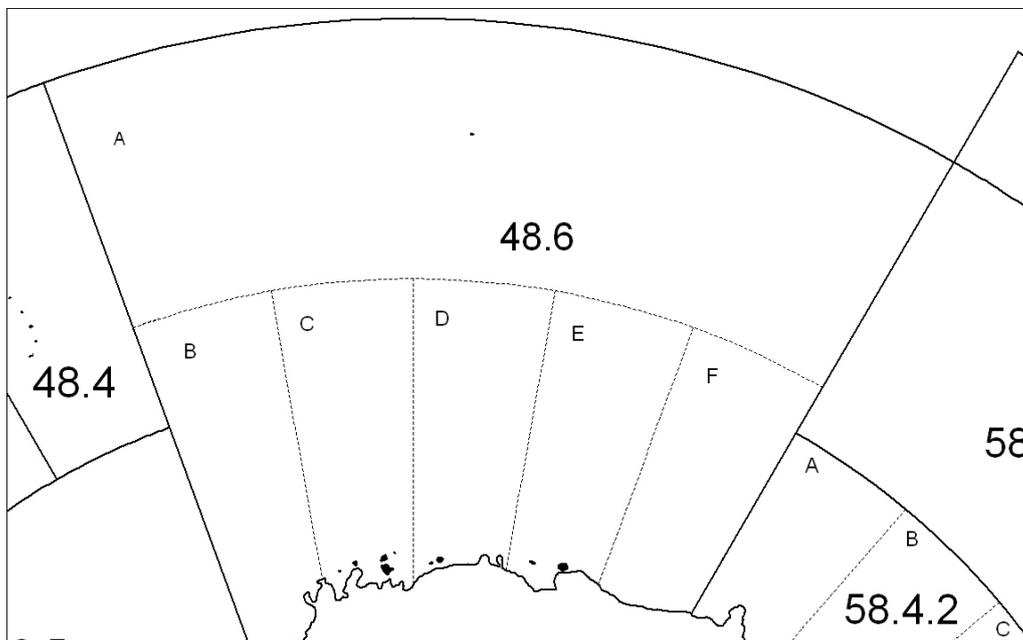


Figure 1: General map of Subarea 48.6 and location of SSRUs (A–F in that subarea).

1.1 Reported catch

4. Licensed longline vessels have fished the exploratory fishery for *Dissostichus* spp. in Subarea 48.6 since 2003/04, and the main species caught is *D. eleginoides* (Table 1(a)). In 2006/07, three vessels reported a total catch of 113 tonnes of *Dissostichus* spp. in SSRUs A, D and E (Tables 1(a) and 1(b)). The proportion of *D. mawsoni* in the catches has increased from 0% in 2003/04 to 30–40% in recent seasons.

5. The total catch of *Dissostichus* spp. in 2006/07 represents 12% of the precautionary catch limit for the fishery.

1.2 IUU catch

6. There is no information to derive an estimate of the level of IUU fishing in Subarea 48.6 (Table 1(a)).

Table 1(a): Catch history for *Dissostichus* spp. in Subarea 48.6 (source: STATLANT data for past seasons, and catch and effort reports for current season, WG-FSA-07/10 Rev. 5 and past reports for IUU catch).

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (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		
2003/04	6	1	910	7	0	7	-	7
2004/05	3	2	910	49	2	51	-	51
2005/06	2	1	910	100	63	163	-	163
2006/07	4	3	910	78	35	113	-	113

Table 1(b): Catch of *Dissostichus* spp. in Subarea 48.6 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	E	A	B	C	D	E
2003/04	7									
2004/05	49									2
2005/06	100					63				
2006/07	78					25			2	8

1.3 Size distribution of catches

7. Most *D. eleginoides* caught in the fishery ranged from 60 to 170 cm in length, with a broad mode at approximately 80–110 cm in 2006/07, and most *D. mawsoni* ranged from 100 to 180 cm in length, with a broad mode at approximately 140–160 cm in 2006/07 (Figure 2). The length-frequency distributions indicate a consistent difference in modal size between the two species.

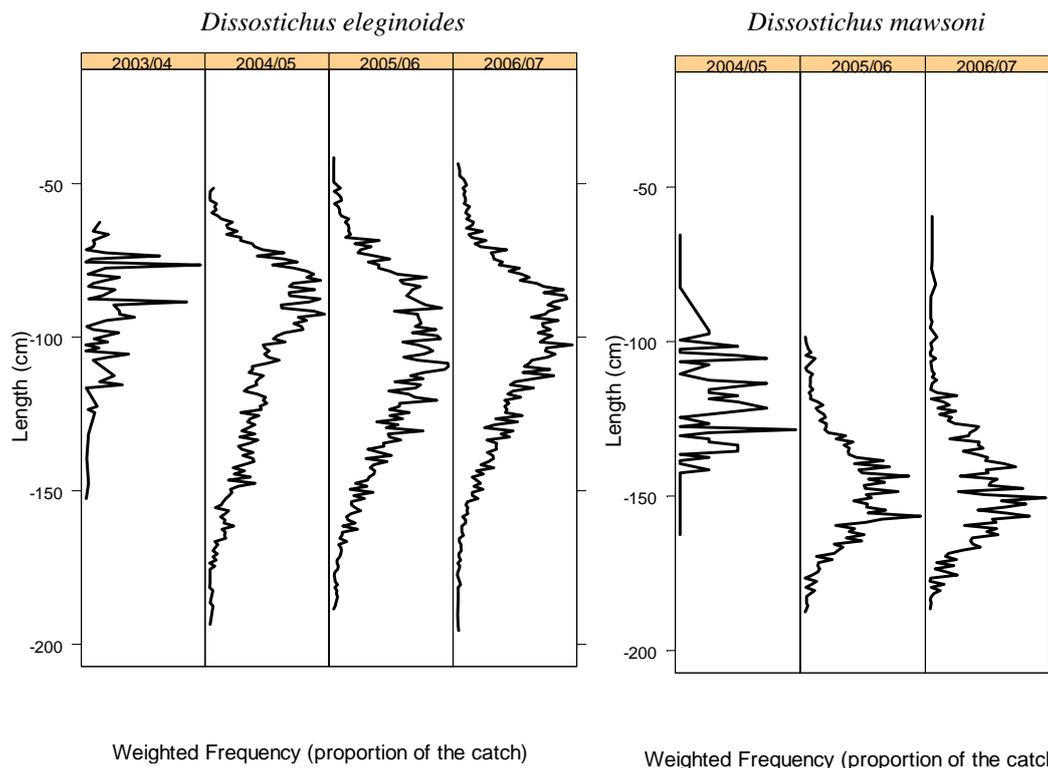


Figure 2: Catch-weighted length frequencies for *Dissostichus eleginoides* and *Dissostichus mawsoni* in Subarea 48.6 (source: observer, fine-scale and STATLANT data, and the length–weight relationships were taken from observations on *D. eleginoides* in Subarea 48.3 and *D. mawsoni* in Subarea 88.1).

2. Stocks and areas

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

3. Parameter estimation

3.1 Observations

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 321 *D. eleginoides* and 44 *D. mawsoni* (total 365 fish) have been tagged

and released, and five *D. eleginoides* have been recaptured in that subarea (Table 3). Of the fish tagged and released, 345 fish were in SSRU A, two fish were in SSRU D and 18 fish were in SSRU E.

Table 2: Research (R) and commercial (C) longline hauls reported by vessels operating in the exploratory fishery for *Dissostichus* spp. in Subarea 48.6 (source: fine-scale data).

Season	Flag State	Vessel name	SSRU	Number of hauls		
				R	C	Total
2003/04	Japan	<i>Shinsei Maru No. 3</i>	486A	*	29	29
2004/05	Japan	<i>Shinsei Maru No. 3</i>	486A	32	86	118
	Korea, Republic of	<i>Bonanza No. 707</i>	486E	6		6
2005/06	Japan	<i>Shinsei Maru No. 3</i>	486A	20	243	263
2006/07	Japan	<i>Shinsei Maru No. 3</i>	486A	20	169	189
	Korea, Republic of	<i>Jung Woo No. 2</i>	486A	7	13	20
		<i>Jung Woo No. 2</i>	486E	6		6
	Norway	<i>Frøyanes</i>	486D	10		10
<i>Frøyanes</i>		486E	8	1	9	

* 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 Subarea 48.6. The number of *D. eleginoides* is indicated in brackets. The total number of tagged fish recaptured to date in Subarea 48.6 is also included. (Source: observer data and catch and effort reports.)

Season	Flag State	Vessel name	<i>Dissostichus</i> spp. tagged and released		
			Number of fish	Tagging rate	
2003/04	Japan	<i>Shinsei Maru No. 3</i>	4	(4)	0.61
2004/05	Japan	<i>Shinsei Maru No. 3</i>	57	(57)	1.21
	Korea, Republic of	<i>Bonanza No. 707</i>	5	(0)	2.21
2005/06	Japan	<i>Shinsei Maru No. 3</i>	171	(169)	1.05
2006/07	Japan	<i>Shinsei Maru No. 3</i>	99	(76)	1.00
	Korea, Republic of	<i>Jung Woo No. 2</i>	18	(14)	2.80
	Norway	<i>Frøyanes</i>	11	(1)	1.57
Total number of fish tagged and released			365	(321)	
Total number of tagged fish recaptured in Subarea 48.6			5	(5)	

3.2 Fixed parameter values

12. None available for this fishery.

4. Stock assessment

13. 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

14. Catches of by-catch species groups (macrourids, rajids and other species) reported in fine-scale data, their respective catch limits, and number of rajids cut from lines and released alive are summarised in Table 4. The by-catch in this fishery consists predominantly of macrourids (up to 13 tonnes per season), and the total reported catch of rajids has been low (<100 kg).

Table 4: Catch history for by-catch species (macrourids, rajids and other species), catch limits and number of rajids released alive in Subarea 48.6. Catch limits are for the whole fishery (see Conservation Measure 33-03 for details). (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)
2003/04	146	0	100	0	-	120	0
2004/05	146	6	100	0	-	120	0
2005/06	146	10	100	0	-	120	3
2006/07	146	13	100	0	-	120	2

- Represents a lack of data.

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 rajids from the lines by cutting the snoods when the rajids 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). The Commission has been requested to review this mitigation practice (see SC-CAMLR-XXVI, Annex 5, paragraph 5.53).

6. By-catch of birds and mammals

6.1 By-catch removals

18. Details of seabird by-catch are summarised in Table 5.

Table 5: Seabird by-catch limit, observed mortality rate and total estimated mortality of seabird by-catch in Subarea 48.6 (from SC-CAMLR-XXVI, Annex 6, Part II, Table 2).

Season	By-catch limit (number of birds)	Mortality rate (birds per thousand hooks)	Total estimated mortality (number of birds)
2003/04	3*	0	0
2004/05	3*	0	0
2005/06	3*	0	0
2006/07	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 Subarea 48.6 as category 1 (low) south of 55°S, and category 2 (average to low) north of 55°S (SC-CAMLR-XXVI, Annex 6, Part II, Table 20).

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, 41-10 and 26-01).

7. Ecosystem implications/effects

22. No evaluation available for this fishery.

8. Harvest controls and management advice

8.1 Conservation measures

23. The limits on the exploratory fishery for *Dissostichus* spp. in Subarea 48.6 are defined in Conservation Measure 41-04. The limits in force in 2006/07 and the Working Group's advice to the Scientific Committee for the forthcoming 2007/08 season are summarised in Table 6.

Table 6: Limits on the exploratory fishery for *Dissostichus* spp. in Subarea 48.6 in 2006/07 (Conservation Measure 41-04) and advice to the Scientific Committee for 2007/08.

Element	Limit in 2006/07	Advice for 2007/08
Access	No more than one vessel per country at any one time.	Carry forward
Catch limit	Precautionary catch limit for <i>Dissostichus</i> spp. was 455 tonnes north of 60°S and 455 tonnes south of 60°S.	Carry forward
Season	1 December to 30 November	Same period
By-catch	Regulated by CM 33-03.	Review
Mitigation	In accordance with CM 25-02, except paragraph 4 if requirements of CM 24-02 are met.	Carry forward
Observers	Limit of three (3) seabirds per vessel during daytime setting.	Carry forward
	At least two (2) scientific observers, one of whom shall be appointed in accordance with the CCAMLR Scheme.	Carry forward
Data	Five-day catch and effort reporting	Carry forward
	Haul-by-haul catch and effort data	Carry forward
	Biological data reported by the CCAMLR scientific observer.	Carry forward
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
	Toothfish tagged at a rate of at least one fish per tonne green weight caught.	Carry forward
Environmental protection	Regulated by CM 26-01. No offal discharge.	Carry forward

8.2 Management advice

24. Given the concentration of fishing effort within SSRU A, the Working Group recommended that this SSRU be separated into two SSRUs along longitude 1.5°E (SC-CAMLR-XXVI, Annex 5, Figure 3). This separation would be beneficial for increasing information about catch rates by distributing a greater number of research sets over a larger area. The catch limit could be split between the two new SSRUs.

25. The Working Group noted that the catch limit for the *Dissostichus* spp. exploratory fishery in Subarea 48.6 had not been reviewed since 1997 when the catch limit was estimated based on seabed areas and catch rates from the Subarea 48.3 *D. eleginoides* fishery (SC-CAMLR-XVI, paragraphs 9.53 to 9.71). As it is now understood that there is considerable variation in catch rates across the Convention Area, the Working Group considered that the catch limit in place for this subarea was no longer precautionary.

26. The Working Group recommended that all the requirements of the fishery, including fishery-based research (Conservation Measure 41-01), by-catch limits (Conservation Measure 33-03) and associated measures, be carried forward to the 2007/08 season.