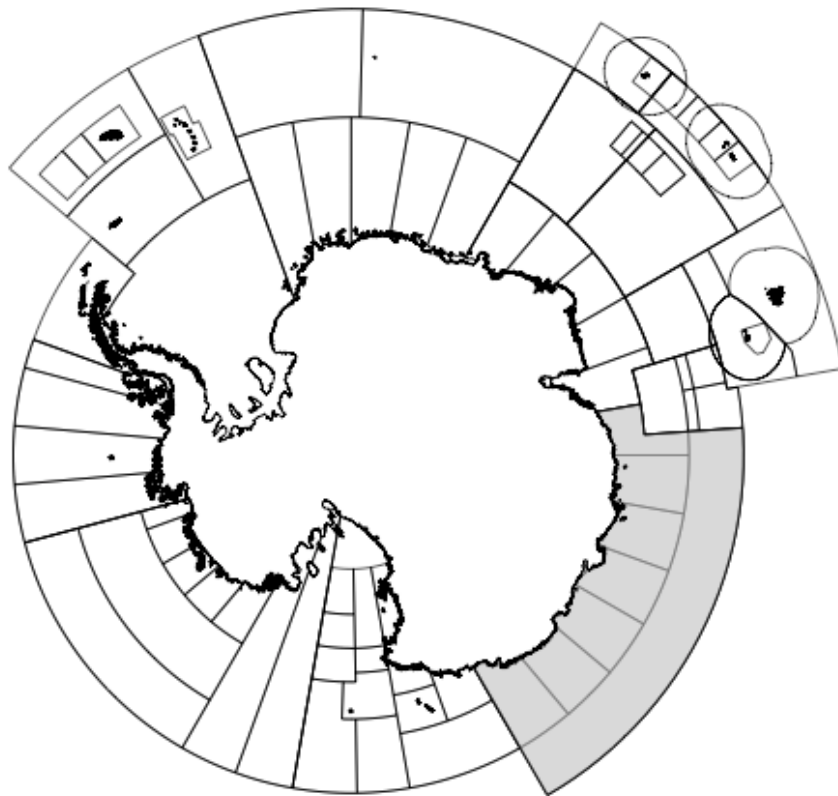




FISHERY REPORT

Fishery Report 2015: Exploratory fishery for *Dissostichus* spp. in Division 58.4.1



The map above shows the management areas within the CAMLR Convention Area, the specific region related to this report is shaded.

Throughout this report the CCAMLR fishing season is represented by the year in which that season ended, e.g. 2015 represents the 2014/15 CCAMLR fishing season (from 1 December 2014 to 30 November 2015).

Fishery Report 2015: Exploratory fishery for *Dissostichus* spp. in Division 58.4.1

Introduction to the fishery

1. This report describes the exploratory longline fishery for toothfish (*Dissostichus* spp.) in Division 58.4.1. This fishery was first agreed by the Commission in 1999 (Conservation Measure (CM) 166/XVII) and licensed vessels have operated in this fishery since 2005, targeting primarily Antarctic toothfish (*Dissostichus mawsoni*).
2. The current limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.1 are described in CM 41-11. The precautionary catch limit for *Dissostichus* spp. in 2015 was 724 tonnes and this was applied to research fisheries at small-scale research units (SSRUs) including research blocks within those SSRUs (Figure1).
3. In 2015, the fishery was limited to one Korean and one Spanish flagged vessel using longlines, although Korea was the only Member that conducted research fishing during this season.
4. For 2016, a total of five vessels, one each from Australia, France, Japan, the Republic of Korea and Spain, have notified their intention to participate in the exploratory fishery for *Dissostichus* spp. in Division 58.4.1.

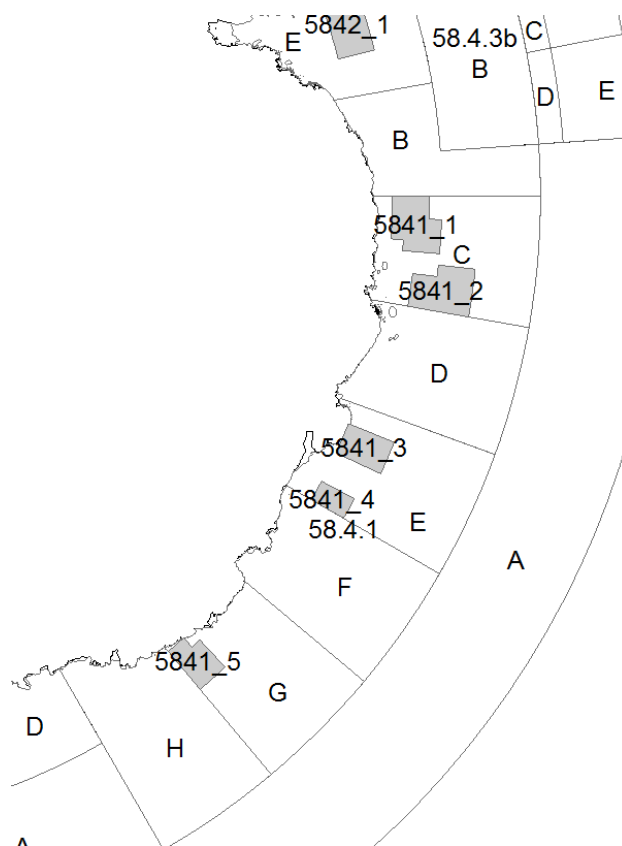


Figure 1: Location of research blocks in Division 58.4.1.

Reported catches

5. Reported catches of *Dissostichus* spp. in Division 58.4.1 peaked at 634 tonnes in 2007, which exceeded the catch limit set for that year by 6%. The catch limit was again exceeded in 2009 and 2011 by 6% and 2% respectively (Table 1). The catches reported in Division 58.4.1 include catch data from particular vessels that CCAMLR has agreed should be quarantined as there is no confidence in the amount and/or the location of those catches (SC-CAMLR-XXXIII, paragraph 3.68). Those years that include quarantined data are indicated with a superscript q and vessel-specific details are provided in the footnote to Table 1. All ancillary data associated with these vessels (e.g. by-catch, tagging, observer data) is also quarantined and is not included in the data presented in this report.

6. In 2015, the Republic of Korea undertook research fishing in this division with a total catch of 123 tonnes (Table 1), taken as follows: 3 tonnes in research block 5841_1, 16 tonnes in research block 5841_2, 68 tonnes in research block 5841_3, 10 tonnes in research block 5841_4 and 26 tonnes in research block 5841_5.

Table 1: Catch history for *Dissostichus* spp. in Division 58.4.1. (Source: STATLANT data for past seasons and catch and effort reports for the current season, past reports for IUU catch.)

Season	Catch limit (tonnes)	Reported catch (tonnes)			Estimated IUU catch (tonnes)
		<i>D. mawsoni</i>	<i>D. eleginoides</i>	Total	
2005	600	479	1	480	-
2006	600	421	0	421	597
2007	600	513 ^q	0 ^q	634	626
2008	600	410	1	410	136
2009	210	162 ^q	0	162	152
2010	210	86 ^q	2	88	910
2011	210	113 ^q	0	113	*
2012	210	157	0	157	*
2013	210	48	0	48	*
2014	724	101	<1	101	
2015	724	123	0	123	*

^q Some catch data in these years is now quarantined, the following catch is not included in the reported catch table above:

2007 – vessel *Paloma V*, 94 tonnes *D. eleginoides* and 24 tonnes *D. mawsoni*

2009 – vessel *In Sung No. 22*, 60 tonnes *D. mawsoni*

2010 – vessel *In Sung No. 2*, 108 tonnes *D. mawsoni*

2011 – vessel *In Sung No. 7*, 101 tonnes *D. mawsoni*.

* Not estimated.

Illegal, unreported and unregulated (IUU) fishing

7. Illegal, unreported and unregulated (IUU) fishing in the Indian Ocean sector of the Convention Area remains an issue for the Commission. Estimates of IUU fishing in Division 58.4.1 indicate that >2 400 tonnes of *Dissostichus* spp. have been taken illegally since the fishery began (Table 1). In Division 58.4.1, IUU fishing was first detected in 2006 and data from vessel sightings and the recovery of IUU fishing gear (gillnets) indicate that IUU activity may have increased in recent years. The high levels of IUU fishing in 2006,

2007 and 2010 resulted in estimates of total removals in this division being well in excess of the catch limits. However, since 2011, following the recognition of methodological issues in its assessment, no estimates of the IUU catch of *Dissostichus* spp. have been provided for this division (SC-CAMLR-XXIX, paragraph 6.5). IUU vessels using gillnets were detected in 2014 in SSRUs 5841D and E and in 2015 in SSRUs 5841E and H.

Data collection

8. Catch limits for CCAMLR's fisheries for *D. mawsoni* and Patagonian toothfish (*D. eleginoides*) for the 'assessed' fisheries in Subareas 48.3, 88.1 and 88.2 and Division 58.5.2 are set using fully integrated assessments; more basic approaches are used for the 'data-poor' fisheries (in Subarea 48.6 and in Area 58 outside the exclusive economic zones (EEZs)). The management of these data-poor fisheries has been a major focus of attention in CCAMLR in recent years after the acknowledgement that commercial fishing by itself had resulted in too few data to develop a full assessment of the targeted stocks in these areas. CCAMLR has developed a framework for designing and undertaking research fishing designed to lead to an assessment of these toothfish stocks in the short to medium term, established under the provisions of CM 41-01. This research planning framework has three phases: prospecting phase, biomass estimation phase and assessment development phase, with a set of decisions and review for the progression between stages.

9. In order to obtain the data necessary for a stock assessment, catch limits for research fishing by commercial vessels are set at a level intended to provide sufficient information (including sufficient recaptures of tagged fish) to achieve a stock assessment within a time period of 3 to 5 years. These catch limits are also set so that they provide reasonable certainty that exploitation rates at the scale of the stock or research unit will not negatively impact the stock. Appropriate exploitation rates are based on estimates from areas with assessed fisheries and are not more than 3–4% of the estimated stock size. In 2014, five research blocks were designated in Division 58.4.1 with catch limits applied to each research block (Figure 1). These research blocks were designed to ensure that research fishing occurred in those areas with the highest probability of recapturing tagged fish; fishing in this division, other than the depletion experiment conducted by Spain, is restricted to the research blocks only. Further details on research in this division are given in Appendix 1.

Biological data

10. The collection of biological data under CM 23-05 is conducted as part of the CCAMLR Scheme of International Scientific Observation. In exploratory longline fisheries targeting *D. mawsoni* and *D. eleginoides*, biological data collection includes representative samples of length, weight, sex and maturity stage, as well as collection of otoliths for age determination of the target and most frequently taken by-catch species.

Length distributions of catches

11. The length-frequency distributions of *D. mawsoni* caught in this fishery are presented in Figure 2 for all years in which the number of that species measured was more than 150 fish. These length-frequency distributions are unweighted (i.e. they have not been adjusted for factors such as the size of the catches from which they were collected). The interannual variability exhibited in the figure may reflect differences in the fished population but is also likely to reflect changes in the gear used, the number of vessels in the fishery and the spatial and temporal distribution of fishing.

12. The majority of *D. mawsoni* caught in the Division 58.4.1 fishery ranged from 100 to 170 cm in length, with a relatively consistent broad mode at approximately 125–150 cm (Figure 2).

13. Length-frequency distributions of *D. eleginoides* have not been presented for Division 58.4.1 as the data from the only year in which more than 150 fish were reported measured is currently quarantined (see Table 1 footnote).

Tagging

14. Since 2012, vessels have been required to tag and release *Dissostichus* spp. at a rate of 5 fish per tonne of green weight caught (Table 2). The tag-overlap statistic estimates the representative similarity between the size distributions of those fish that are tagged by a vessel and of all the fish that are caught by that vessel. Each vessel catching more than 10 tonnes of each species of *Dissostichus* is required to achieve a minimum tag-overlap statistic of 60% (Annex 41-01/C).

15. Since 2005, a total of 6 728 *D. mawsoni* and 85 *D. eleginoides* have been tagged and 27 *D. mawsoni* and one *D. eleginoides* have been recaptured in Division 58.4.1 (Tables 3(a) and 3b). No fish tagged in Division 58.4.1 has been recaptured outside that division, although one fish tagged in Division 58.4.3b was recaptured in Division 58.4.1.

Life-history parameters

Data collection

16. The life histories of *D. mawsoni* and *D. eleginoides* are characterised by slow growth, low fecundity and late maturity. Both *D. mawsoni* and *D. eleginoides* appear to have protracted spawning periods, taking place mainly in winter, but which may start as early as late autumn and extend into spring. However, as this is the period least accessible to fishing, and thus the collection of biological data, specific life-history traits for these species are limited (WG-FSA-08/14). The areas that are considered to be the most likely spawning grounds for *D. mawsoni* include the north of the Ross Sea associated with the Pacific–Antarctic Ridge (SSRUs 881B–C) and the Amundsen Ridge (SSRU 881E) in the Amundsen Sea. In the Cooperation Sea, *D. mawsoni* most likely spawn on BANZARE Bank (Division 58.4.3b). *Dissostichus eleginoides* are thought to spawn in deep water around South Georgia Island (Subarea 48.3), Bouvet Island (Subarea 48.6) and on the Kerguelen Plateau (Divisions 58.5.1 and 58.5.2).

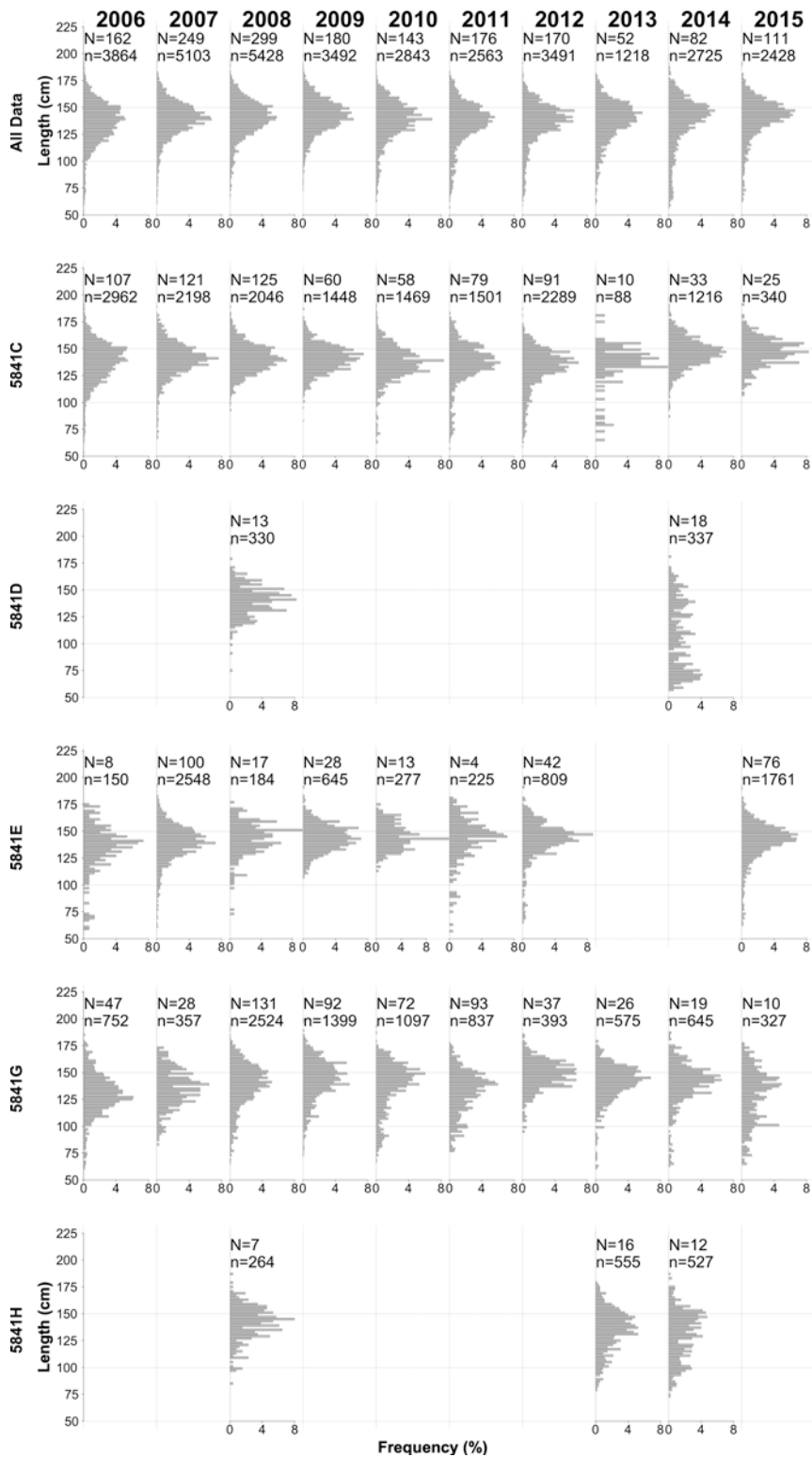


Figure 2: Annual length-frequency distributions of *Dissostichus mawsoni* caught in Division 58.4.1 (top panel) and in each SSRU (lower panels). The number of hauls from which fish were measured (N) and the number of fish measured (n) in each year are provided. Note: length-frequency distributions are only presented for those years/SSRUs in which the number of fish measured was >150.

Table 2: Annual tagging rate, reported by vessel, operating in the exploratory fishery for *Dissostichus* spp. in Division 58.4.1. The tag-overlap statistics (CM 41-01) for *D. mawsoni* and *D. eleginoides* respectively are provided in brackets. Values for the tag-overlap statistic are not calculated for catches of less than 10 tonnes (2007–2014) or less than 30 fish tagged (since 2015) (*).- indicates that no fish were tagged.

Flag State	Vessel name	Season										
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Chile	<i>Globalpesca I</i>		1.6									
	<i>Globalpesca II</i>	0.6	0.6									
Japan	<i>Shinsei Maru No. 3</i>						3.1 (57,*)					
Korea,	<i>Bonanza No. 707</i>	1.4										
Republic of	<i>Hong Jin No. 701</i>							4.5 (70, -)	5.2 (89, -)			
	<i>Insung No. 1</i>			>500fish (25, -)	3.0 (25, -)	3.8 (19, -)						
	<i>Insung No. 2</i>		1.2		2.9 (27,*)							
	<i>Insung No. 3</i>								9.5 (*, -)			
	<i>Kingstar</i>										5.1 (91, -)	
	<i>Yeon Seong No. 829</i>	1.1										
Namibia	<i>Antillas Reefer</i>			0.1 (27, *)	1.2 (30, -)							
	<i>Paloma V</i>				3.4 (21,*)							
New Zealand	<i>Janas</i>	2.7										
	<i>San Aspiring</i>	1.1	^a									
Spain	<i>Arnela</i>	0.9										
	<i>Galaecia</i>	1.1										
	<i>Tronio</i>		1.1	>500fish (30, -)	3.0 (21, *)			3.1 (52, -)		5.2 (68, *)	5.3 (76, *)	
Uruguay	<i>Banzare</i>			1.0 (*, -)	1.0 (*, -)	3.4 (36, -)						
	<i>Paloma V</i>		0.8									
Required tagging rate		1	1	3	3	3	3	3	5	5	5	5

^a No catch data provided.

Table 3: The number of individuals of (a) *Dissostichus mawsoni* and (b) *D. eleginoides* tagged in each year. The number of fish recaptured by each vessel/year is provided in brackets.

(a)

Flag State	Vessel name	Season										
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Chile	<i>Globalpesca I</i>		12 (0)									
	<i>Globalpesca II</i>	93 (0)	23 (0)									
Japan	<i>Shinsei Maru No. 3</i>						263 (2)					
Korea, Republic of	<i>Bonanza No. 707</i>	17 (0)										
	<i>Hong Jin No. 701</i>							180 (2)	812 (0)			
	<i>Insung No. 1</i>			723 (2)	370 (2)	418 (2)						
	<i>Insung No. 2</i>		182 (0)		441 (0)							
	<i>Insung No. 3</i>									29 (0)		
	<i>Kingstar</i>											624 (3)
	<i>Yeon Seong No. 829</i>	166 (0)										
Namibia	<i>Antillas Reefer</i>			3 (1)	56 (2)							
	<i>Paloma V</i>				42 (0)							
New Zealand	<i>Janas</i>	1 (0)										
	<i>San Aspiring</i>	22 (0)	1 (0)									
Spain	<i>Arnela</i>	25 (0)										
	<i>Galaecia</i>	116 (0)										
	<i>Tronio</i>		249 (0)	497 (1)	195 (2)			232 (2)		227 (0)	522 (6)	
Uruguay	<i>Banzare</i>				10 (0)	176 (0)						
	<i>Paloma V</i>		1 (0)									
Total		440 (0)	468 (0)	1223 (4)	1114 (6)	594 (2)	263 (2)	412 (4)	812 (0)	256 (0)	522 (6)	624 (3)

(b)

Flag State	Vessel name	Season											
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Chile	<i>Globalpesca I</i>												
	<i>Globalpesca II</i>	1 (0)											
Japan	<i>Shinsei Maru No. 3</i>						12 (1)						
Korea, Republic of	<i>Bonanza No. 707</i>												
	<i>Hong Jin No. 701</i>												
	<i>Insung No. 1</i>			9 (0)									
	<i>Insung No. 2</i>				8 (0)								
	<i>Insung No. 3</i>												
	<i>Kingstar</i>												0 (0)
	<i>Yeon Seong No. 829</i>	1 (0)											
Namibia	<i>Antillas Reefer</i>												
	<i>Paloma V</i>				5 (0)								
New Zealand	<i>Janas</i>												
	<i>San Aspiring</i>	2 (0)											
Spain	<i>Arnela</i>												
	<i>Galaecia</i>	18 (0)											
	<i>Tronio</i>			5 (0)	7 (0)					4 (0)	12 (0)		
Uruguay	<i>Banzare</i>												
	<i>Paloma V</i>		1 (0)										
Total		22 (0)	1 (0)	14 (0)	20 (0)	0 (0)	12 (1)	0 (0)	0 (0)	4 (0)	12 (0)	0 (0)	

Parameter estimates

17. There are no specific life-history parameters for either *D. mawsoni* or *D. eleginoides* in this division; the parameters used in assessed fisheries can be found in the ‘Stock assessment’ appendices of the relevant Fishery Reports.

Stock assessment status

18. There has been no integrated stock assessment for this data-poor exploratory fishery. Research in this fishery is in the biomass estimation phase and includes depletion experiments and tag-based research (details of ongoing and proposed research can be found in the report of WG-FSA-13 (SC-CAMLR-XXXII, Annex 6)).

By-catch of fish and invertebrates

Fish by-catch

19. Catch limits for by-catch species groups (macrourids, rajids and other species) are defined in CM 33-03 and provided in Table 4. Within these catch limits, the total catch of by-catch species in any SSRU or combination of SSRUs, as defined in relevant conservation measures, shall not exceed the following limits:

- skates and rays (rajids) – 5% of the catch limit of *Dissostichus* spp. or 50 tonnes, whichever is greater
- *Macrourus* spp. – 16% of the catch limit of *Dissostichus* spp. or 20 tonnes, whichever is greater
- all other species combined – 20 tonnes.

Table 4: Catch history for by-catch species (macrourids, rajids and other species), including catch limits and number of rajids released alive, in Division 58.4.1. Catch limits are for the whole fishery (see CM 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)
2005	96	17	50	0	-	60	1
2006	96	15	50	0	-	60	1
2007	96	28 ^q	50	0	-	60	2
2008	96	36	50	0	-	60	1
2009	33	3 ^q	50	0	-	60	<1
2010	33	5 ^q	50	0	-	60	<1
2011	33	3 ^q	50	0	-	60	<1
2012	33	2	50	0	-	60	<1
2013	33	5	50	0	-	60	<1
2014	116	6	50	0	-	100	<1
2015	116	2	50	0	-	100	<1

^q Quarantined data (see paragraph 5).

20. If the by-catch of any one species is equal to, or greater than, 1 tonne in any one haul or set, then the fishing vessel must move at least 5 n miles away for a period of at least five days.
21. If the catch of *Macrourus* spp. taken by a single vessel in any two 10-day periods in a single SSRU exceeds 1 500 kg in a 10-day period and exceeds 16% of the catch of *Dissostichus* spp. in that period, the vessel shall cease fishing in that SSRU for the remainder of the season.
22. The by-catch in Division 58.4.1 consists predominantly of macrourids (Table 4).

Invertebrate by-catch including VME taxa

23. All Members are required to submit, within their general new (CM 21-01) and exploratory (CM 21-02) fisheries notifications, information on the known and anticipated impacts of their gear on vulnerable marine ecosystems (VMEs), including benthos and benthic communities such as seamounts, hydrothermal vents and cold-water corals. All of the VMEs in CCAMLR's VME Register are currently afforded protection through specific area closures.
24. There are two VMEs in SSRU 5841H (identified through a national research program); the locations and other details can be found in Annex 22-09/A. There have been no VME Risk Areas designated in Division 58.4.1.

Incidental mortality of seabirds and marine mammals

Incidental mortality

25. Since 2005 when two southern giant petrels (*Macronectes giganteus*) and three sooty shearwaters (*Puffinus griseus*) were reported injured or killed, there have been no observed incidental mortalities of birds in Division 58.4.1.
26. There have been no observed incidental mortalities of mammals in Division 58.4.1.

Mitigation measures

27. The requirements of CM 25-02 'Minimisation of the incidental mortality of birds in the course of longline fishing or longline fishing research in the Convention Area' apply to this fishery. There is an exemption to the requirement for night setting by achieving the sink rates described in CM 24-02 and subject to a bird by-catch limit.
28. The risk level for birds in the fishery in Division 58.4.1 is category 2 (average to low) (SC-CAMLR-XXX, Annex 8, paragraph 8.1).

Ecosystem implications and effects

29. There is no formal evaluation available for this fishery.

Current management advice and conservation measures

30. The limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.1 are defined in CM 41-11. The limits in force are summarised in Table 5.

Table 5: Limits on the exploratory fishery for *Dissostichus* spp. in Division 58.4.1 in force (CM 41-11).

Element	Limit in force
Access	Fishing for <i>Dissostichus</i> spp. in Division 58.4.1 shall be limited to the exploratory longline fishery by Japan, Republic of Korea and Spain. The fishery shall be conducted by one (1) Japanese, one (1) Korean and one (1) Spanish flagged vessel using longlines only. Japan and the Republic of Korea shall conduct research fishing in the research blocks defined in Annex 41-11/A, and Spain shall conduct depletion experiments in SSRUs C, D, G and H.
Catch limit	The total catch of <i>Dissostichus</i> spp. in Division 58.4.1 in 2015 shall not exceed a precautionary catch limit of 724 tonnes, applied as follows: SSRU A – 0 tonnes SSRU B – 0 tonnes SSRU C – 257 tonnes ¹ SSRU D – 42 tonnes ¹ SSRU E – 315 tonnes SSRU F – 0 tonnes SSRU G – 68 tonnes ¹ SSRU H – 42 tonnes ¹
Season	1 December to 30 November
Fish by-catch	Regulated by CM 33-03
Bird mitigation	In accordance with CM 25-02. Limit of three (3) birds per vessel during daytime setting
Observers	At least two (2) scientific observers, one of whom shall be appointed in accordance with the CCAMLR Scheme of International Scientific Observation
Data	Daily and five-day catch and effort reporting Haul-by-haul catch and effort data Biological data reported by the CCAMLR scientific observer
Research	Fishery-based research in accordance with Annex 41-07/A and 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), and CM 24-01. Toothfish tagged at a rate of at least 5 fish per tonne of green weight caught
Environmental protection	Regulated by CMs 22-06, 22-07, 22-08 and 26-01

¹ Includes a catch limit of 42 tonnes to permit Spain to undertake a depletion experiment in 2015.

Research plan summary for Division 58.4.1

Background

A1. Exploratory fishing for toothfish (*Dissostichus* spp.) in Divisions 58.4.1 began in 2003. However, robust stock assessment and catch limits according to CCAMLR decision rules remain to be determined for this division. Accordingly, the exploratory *Dissostichus* spp. fishery in this division has been identified as ‘data-poor’. In 2011, research blocks were designated in areas where previous tag releases had been focussed. Research plans are generally focussed in these areas, to facilitate the development of local biomass estimates. All Members notifying to fish in Division 58.4.1 submitted a research plan, based on CM 24-01, Annex A, Format 2.

A2. The specific objectives of Members’ research in this division are set out in Table A1.

Table A1: Specific objectives of Members’ research in Division 58.4.1.

Member	Source	Objectives
Australia	WG-FSA-15/47	<ol style="list-style-type: none"> 1. Collect data required for an assessment of the status and productivity of toothfish stock/s in Divisions 58.4.1 and 58.4.2, including catch, fishing effort, tagging and biological data. 2. Collect and utilise environmental data to inform spatial management approaches for the conservation of toothfish, by-catch species and representative areas of benthic biodiversity. 3. Inform the designation of catch limits for by-catch species.
France	WG-FSA-15/73	<p>Two objectives are followed:</p> <ol style="list-style-type: none"> 1. To collect data required for an assessment of the status and productivity of toothfish stock. 2. To collect data required to a better understanding of by-catch species distribution and gear comparison.
Japan	WG-FSA-15/17, WG-FSA-15/18	<p>The establishment of stock assessment(s) of <i>Dissostichus</i> spp. population(s) in data-poor exploratory fisheries and robust stock/fisheries management thereon are of a very high priority for CCAMLR. To achieve this goal, understanding the resource structure through clarification of the life history is essential. Data collection by eligible fishing vessels will make significant contribution to this end. Further, cooperation between countries operating in the adjacent areas is important to progress this work. During the second three-season research, Japan will continue enhanced tagging program, and collection and analysis of biological data, including otoliths and gonads to clarify migration route and associated life stages of fish. In this regard, the research plan concentrates effort in locations where tagged fish has been released in order to increase the amount of data and the number of tags available for recapture as shown in SC-CAMLR-XXX, paragraphs 3.128 and 3.129, as was in the first term (2013–15) research. At the same time, Japan aim to maximise tag-recapture and data collection to the extent possible under a precautionary exploitation rate.</p>

(continued)

Table A1 (continued)

Member	Source	Objectives
Korea, Republic of	WG-FSA-15/56	Estimating the relationship between depth, water temperature and/or salinity and density of <i>Dissostichus</i> spp. Evaluating migration of <i>Dissostichus</i> spp. Evaluating distribution and abundance of <i>Dissostichus</i> spp. Evaluating biological parameters (reproduction, feed, food web, etc.) Assessing biomass of <i>Dissostichus</i> spp. Comparing the biological characteristics and abundance among the SSRUs.
Spain	WG-FSA-15/05	(i) To estimate local abundance of toothfish, mainly of <i>Dissostichus mawsoni</i> , implementing the use of depletion models in the specified local areas. (ii) To estimate the local abundance of <i>D. mawsoni</i> using a tag-recapture simple Petersen model. (iii) Comparison of local abundance estimates by these two methods. (iv) To increase our understanding on the potential fish mixing populations in Divisions 58.4.1 and 58.4.2 with those in adjacent areas (BANZARE Bank and Ross Sea), as well as between fish populations in SSRUs with zero catch limit and the populations in adjacent SSRUs that are open to exploratory fisheries. (v) Estimate biological parameters associated with productivity like maturity; length composition and mean length; and collect otoliths for age determination and growth studies.

Advice by the Scientific Committee

A3. The Scientific Committee further noted that Members notified to conduct research will confirm as whether they intend to pursue research by SC CIRC by 1 February 2016. If any Members are not able to confirm that they will pursue research, their allocation (Table A2) will be redistributed amongst the other notified Members that have confirmed they will pursue research. If any Members have not commenced research fishing by 28 February 2016, their research allocation will also be redistributed amongst the other Members that have commenced research fishing.

A4. Scientific Committee encouraged Members to continue to coordinate sample collection and exchange form research in this region and noted that Australia had undertaken to collect stomachs from 200 toothfish across a range of sizes in research block 5842_1 to facilitate the Republic of Korea's research plan, and Korea will provide representative samples of otoliths from toothfish from research block 5841_5 to Australia for analysis. The locations of research blocks in this subarea are shown in Figure A1 and research will be carried out in 2016 by the vessels in Table A3.

Table A2: Proposed initial allocation and total research catch limits for research plans in Divisions 58.4.1 and 58.5.2 in 2016. AUS – Australia; ESP – Spain; FRA – France; KOR – Republic of Korea.

Division	SSRU	Research block	AUS	ESP	FRA	JPN	KOR	2016 catch limit (tonnes)
58.4.1	C	5841_1	-	-	26	26	26	80
		5841_2	40 ^a	-	13	13	13	81
	D		-	42 ^b	-	-	-	42
			-	42 ^b	-	-	-	42
	E	5841_3	58	-	58	58	58	233
		5841_4	-	-	-	-	-	13
	G	5841_5	-	-	-	-	35	35
				50 ^c	42 ^b	-	-	-
	H		-	42 ^b	-	-	-	42
	58.4.2	E	5842_1	35	-	-	-	-
Total from catch limits			133	-	97	97	132	459
Total from additional research			50	168	-	-	-	677

^a Catch proposed by Australia to fish a grid overlapping with the location of a Spanish depletion experiment in SSRU 5841C, research block 5842_2. Uncaught catch will be reallocated as it is part of the existing SSRU catch limit.

^b Catch proposed by Spain to conduct depletion experiments. Uncaught catch will not be reallocated as it is not part of the existing SSRU catch limits.

^c Catch proposed by Australia to fish a grid overlapping with location of a Spanish depletion experiment in SSRU 5841G. Uncaught catch will not be reallocated as it is not part of the existing SSRU catch limits.

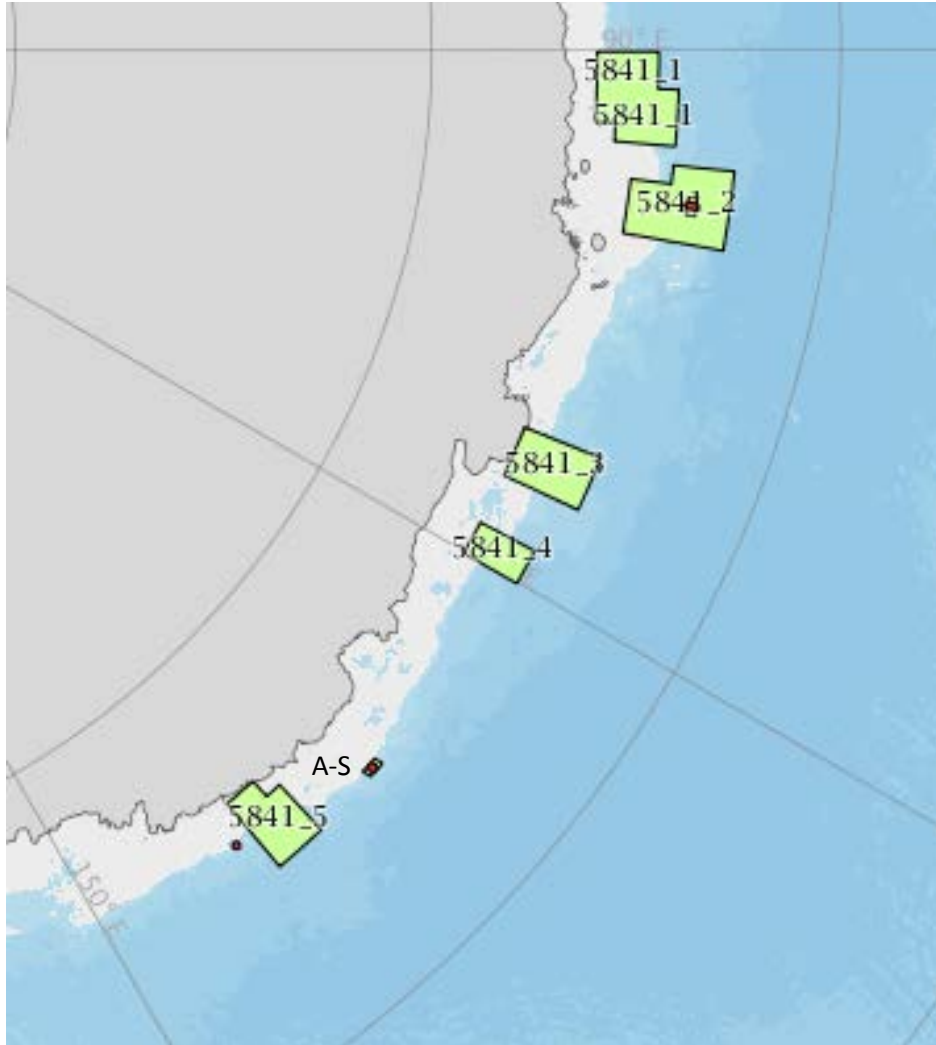


Figure A1: Location of research blocks in Division 58.4.1 in 2016. Red dots indicate the proposed location for the Spanish depletion experiments. The block labelled A–S is the proposed location of the Australian grid overlying the Spanish depletion experiment (the other such alignment of research occurs in research block 5841_2).

Table A3: Vessels proposing to take part in research in Division 58.4.1 in 2015/16.

Vessel name	Flag	Information
<i>Antarctic Chieftain</i>	Australia	www.ccamlr.org/en/node/83684
<i>St André</i>	France	www.ccamlr.org/en/node/75730
<i>Shinsei Maru No 3</i>	Japan	www.ccamlr.org/en/node/75733
<i>Tronio</i>	Spain	www.ccamlr.org/en/node/75760
<i>Kingstar</i>	Korea, Republic of	www.ccamlr.org/en/node/84031