ANNEX 6

REPORT OF THE AD HOC WORKING GROUP ON INCIDENTAL MORTALITY ASSOCIATED WITH FISHING

(Hobart, Australia, 13 to 17 October 2008)

CONTENTS

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OPENING OF THE MEETING

1.1 The meeting of ad hoc WG-IMAF was held in Hobart, Australia, from 13 to 17 October 2008.

1.2 The Co-conveners, Ms K. Rivera (USA) and Mr N. Smith (New Zealand), opened the meeting and welcomed participants, including the invited experts from ACAP and BirdLife International.

ORGANISATION OF THE MEETING AND ADOPTION OF THE AGENDA

1.3 The agenda of the meeting was discussed and it was agreed to add emphasis on marine mammals, a new item on the review of action plans relating to areas of high incidental mortality, and to clarify that mitigation discussions should include review of the use of fishing methods. The revised agenda was adopted (Appendix A).

1.4 The report was prepared by the participants, and includes the agenda (Appendix A) and list of participants (Appendix B). The list of documents considered at the meeting is given in the report of WG-FSA (Annex 5, Appendix C).

INTERSESSIONAL WORK OF AD HOC WG-IMAF

1.5 The Secretariat reported on the intersessional activities of ad hoc WG-IMAF according to the agreed plan of intersessional activities for 2007/08 (SC-CAMLR-XXVI, Annex 6, Table 21).

1.6 The Working Group thanked the Secretariat for its work on the coordination of ad hoc WG-IMAF intersessional activities and the technical coordinators of national observer programs for their support. It also thanked the Secretariat for its work on the processing and analysis of data submitted to the Secretariat by international and national observers during the course of the 2007/08 fishing season.

1.7 The Working Group concluded that most tasks planned for 2007/08 had been successfully implemented. Much of the information requested intersessionally had been presented to the Working Group in papers submitted to the meeting. The list of current intersessional tasks was reviewed and a number of changes were agreed in order to consolidate specific tasks in future plans. The Working Group agreed that the plan of intersessional activities for 2008/09, compiled by the Co-conveners and the Science Officer, be appended to its report (Table 1).

1.8 The Working Group especially welcomed to the meeting Mr J. Moir Clark (UK), Ms F. Graham (France) and Ms K. O'Regan (Australia) who were attending the meeting for the first time. The Working Group encouraged expert advice on operational aspects of fishing from Members, in particular in relation to trotline and trawl fisheries, in future.

1.9 The Working Group greatly appreciated the participation of national technical coordinators who provided invaluable experience to the Working Group as it addressed numerous observer-related and data collection issues. In addition to the continued participation of technical coordinators at future meetings, ad hoc WG-IMAF would also welcome the participation of Members engaged in fishing activities in, or adjacent to, the Convention Area who have not recently participated in ad hoc WG-IMAF.

Advice to the Scientific Committee

1.10 The plan of intersessional work for 2008/09 (Table 1) summarises requests to Members and others for information of relevance to the work of ad hoc WG-IMAF (paragraph 1.7). Members are particularly invited to review participation in the Working Group and to facilitate attendance of their representatives at meetings, especially technical coordinators and Members engaged in fishing activities in, or adjacent to, the Convention Area who have not recently participated in ad hoc WG-IMAF (paragraph 1.9).

INCIDENTAL MORTALITY OF SEABIRDS AND MARINE MAMMALS IN FISHERIES IN THE CONVENTION AREA

Seabirds

Seabirds in longline fisheries

2.1 Data were available from all longline cruises conducted in the Convention Area, excluding those within the French EEZs in Subarea 58.6 and Division 58.5.1, during the 2007/08 season (WG-FSA-08/5, Table 1).

2.2 The proportions of hooks observed were similar to those observed last year, ranging from 13 to 100% with an average of 47% (Table 2).

2.3 The total extrapolated seabird mortalities due to interactions with fishing gear during longline fishing for *Dissostichus* spp. in the Convention Area in 2007/08 were estimated to be 1 355 petrels (91% white-chinned petrels (*Procellaria aequinoctialis*), 7% grey petrels (*Procellaria cinerea*) and 2% *Macronectes* species) (Table 3; WG-FSA-08/5 Rev. 1, Table 11).

2.4 The Working Group noted that this is the third consecutive year that no albatrosses were observed captured in longline fisheries in the Convention Area and the second consecutive year that the only incidental mortality of seabirds observed captured in longline fisheries in the Convention Area was from the French EEZs.

2.5 The total number of seabirds observed caught and released uninjured was 121 (Tables 2 and 4), all caught during hauling. Of these, 20 were caught within Subarea 48.3, 2 in Subareas 58.6, 58.7 and Area 51, and 99 from within the French EEZs in Subarea 58.6 and Division 58.5.1. All vessels recorded the use of a haul scaring device. The types of devices described by observers included: water cannon/fire hose, single boom with single attached object/streamer, single boom with multiple attached object/streamers, multiple booms and attached objects (Brickle curtain) and noise (WG-FSA-08/5 Rev. 1, paragraphs 6 and 7).

2.6 At the time of the meeting, Australia provided information on one additional observed mortality of a southern giant petrel (*M. giganteus*) on 23 August 2008 on the longline vessel *Austral Leader II* in Division 58.5.2. The observer data will be provided to the Secretariat once the cruise is completed.

Seabird incidental mortality in the French EEZs in Subarea 58.6 and Division 58.5.1

2.7 Data were available from 15 cruises in Subarea 58.6 and 21 cruises in Division 58.5.1 in 2007/08. All vessels in the French EEZs were autoliners using at least 50 g m^{-1} IWLs. The proportion of hooks observed was 24.6% in each of the areas (Table 5) and the total reported observed seabird incidental mortality was 34 and 304 birds respectively (sum of dead and injured birds) (Table 5). The corresponding incidental mortality rates were 0.0305 and 0.0585 birds/thousand hooks (Table 5) and the extrapolated total seabird mortalities for Subarea 58.6 and Division 58.5.1 were 131 and 1 224 respectively (Table 3).

2.8 The Working Group noted that this represented a 53 and 27% reduction in by-catch rates for Subarea 58.6 and Division 58.5.1 respectively, compared to the previous season; a reduction of 40% from the combined total estimated by-catch from these areas (Table 3).

2.9 The Working Group noted that 32% of seabirds observed captured were caught alive, indicating that they were taken on the haul (Table 5). This compares to 48% of the total number of birds that were caught on hauling last year. Most (77%) of the birds captured during the haul were taken at the start of the fishing season prior to the implementation of a haul mitigation device. The majority of birds caught were giant petrels (*Macronectes* species). The mid-season introduction of a requirement to use a haul-mitigation device considerably reduced captures.

2.10 The Working Group noted that the haul-mitigation device should be improved in order to further reduce capture rate during hauling. Based on evidence from the nearby Division 58.5.2 (Heard Island), where the combination of full offal retention and haul mitigation devices has virtually eliminated seabird captures (including giant petrels), the Working Group noted that it should be possible to reduce haul interactions to zero with an improved haul-mitigation device and offal management practices.

2.11 The Working Group discussed the definition of an injured bird (CCAMLR-XXII, paragraph 5.1; SC-CAMLR-XXII, paragraph 5.39 and Annex 5, paragraphs 6.213 to 6.217) to determine if the interpretation of the definition was uniform across the Convention Area (SC-CAMLR-XXVII/BG/10). It was agreed to clarify the issue by adding text to the

definition to indicate that any open wound, with or without the presence of blood, should be considered an injury. The Working Group requested that the Secretariat revise the scientific observer e-logbook instructions for all fisheries to reflect this revised definition of an injured bird.

Seabirds in trawl fisheries

Subarea 48.3 icefish

2.12 Data were available from all six trawl cruises conducted within Subarea 48.3 during the 2007/08 season (WG-FSA-08/6 Rev. 1). The Working Group noted that there was 100% observer coverage of fishing vessels in this fishery with 89% of tows observed (WG-FSA-08/6 Rev. 1, Table 2).

2.13 For 2007/08, five seabird mortalities (three white-chinned petrels and two king penguins (*Aptenodytes patagonicus*)) were reported in Subarea 48.3 from four vessels (WG-FSA-08/6 Rev. 1, Table 3). Two of the white-chinned petrels were killed on hauling and one on setting, it was unclear at what stage of the fishing process the penguins were killed as they were cold when hauled on board. In addition, five seabirds were released alive in Subarea 48.3 (four black-browed albatrosses (*Diomedea melanophrys*) and one grey-headed albatross (*D. chrysostoma*)) (WG-FSA-08/6 Rev. 1, Table 3).

2.14 The Working Group noted that this compares to six seabird mortalities (three released alive) in 2007 and 33 seabird mortalities (89 released alive) in 2006. The rate of mortality in Subarea 48.3 in 2008 was 0.024 birds per trawl compared to 0.07, 0.07 and 0.14 in 2007, 2006 and 2005 respectively (Table 6). One warp strike was recorded – an unidentified albatross on the *Betanzos*.

2.15 Observers recorded a number of different mitigation measures used. These included: net cleaning, streamer lines, Brady bafflers, water jets, net binding and net weighting (WG-FSA-08/6 Rev. 1, paragraph 10). The use of net bindings was reported on all vessels for all sets. Net bindings were spaced between 1 and 4 m apart, with the mesh sizes which were bound ranging from 96 to 800 mm. In the case of net weighting, three vessels, the *Betanzos*, *Robin M Lee* and the *Insung Ho*, reported on the use of net weights. The *Betanzos* attached 37.5 kg chains to each side of the mouth of the codend but increased this to 54.5 kg after five seabird entanglements were observed. They also had a second pair of chains weighing 95 kg each towards the rear of the codend. The *Insung Ho* attached 250 kg weights to either side of the mouth of the net, and 322 kg in the codend. The *Robin M Lee* used integrated weight rope, which added approximately 400 kg to the net. In addition, the *Robin M Lee* turned when hauling to close the net meshes.

2.16 The Working Group noted that the level of seabird mortality remains low in this subarea and requested additional information to isolate the success factors. The Working Group recommended that observers provide a more detailed description of the mitigation measures in place, including specific fishing techniques used by vessels (e.g. shorter trawls to reduce the size of the net when hauling) (paragraph 7.29(iv)(b)).

Division 58.5.2 toothfish/icefish

2.17 Data were available from one vessel which conducted three trawl cruises within Division 58.5.2 during the 2007/08 season (WG-FSA-08/6 Rev. 1, Table 2). The Working Group noted that there was 100% observer coverage of fishing vessels in this fishery with 97% of tows observed (Table 7).

2.18 No seabird mortalities were reported and one Cape petrel (*Daption capense*) was captured and released alive (WG-FSA-08/6 Rev. 1, Table 3). The vessel used net cleaning and minimal deck lighting to reduce seabird interactions and fully implemented Conservation Measure 25-03 (WG-FSA-08/6 Rev. 1, paragraph 15).

Krill

2.19 Data were available from eight[1] trawl cruises conducted within Area 48 during the 2007/08 season (WG-FSA-08/6 Rev. 1). In the krill fishery, 50% of vessels fishing in Subarea 48.1, 20% of vessels fishing in Subarea 48.2 (two cruises) and 67% of vessels fishing in Subarea 48.3 had observers on board at some time during their trips. There were no reported incidents of seabird mortality or entanglements in the krill fishery in Area 48 (WG-FSA-08/6 Rev. 1, Table 2).

2.20 The Working Group noted that no seabird mortality was reported on the *Saga Sea* while fishing with continuous trawls in Subareas 48.1, 48.2 and 48.3 (Table 7). Similarly, no mortalities were recorded on the *Dalmor II* and *Juvel* in Subarea 48.3 or the *Konstruktor Koshkin* in Subareas 48.1 and 48.2 using traditional krill pelagic trawl methods (Table 7). *Maksim Starostin* used both continuous and traditional systems in Area 48 with no bird mortalities recorded (Table 7).

2.21 The Working Group noted that the apparent low proportion of tows observed on some vessels in the krill fishery was due to the method used to record trawls during continuous trawling. Current CCAMLR protocols require these vessels to record every two-hour period when the net is in the water as a separate trawl, a vessel continuously trawling over a period of several days may record several hundred trawls although the net will only have been observed deployed and retrieved once. It was also noted that proportion of tows observed for the periods when observers were on board was still low on some vessels using conventional trawl (33% on the *Konstruktor Koshkin*, 20% on the *Dalmor II*).

Seabirds in pot fisheries

2.22 During pot fishing in 2007/08, no seabird mortalities were recorded during any of the cruises targeting *D. eleginoides* (WG-FSA-08/8, paragraph 7) or crabs in Subarea 48.3 (WG-FSA-08/5 Rev. 1, paragraph 17).

[1] One logbook was submitted by a national observer on board the *Konstruktor Koshkin*.

Marine mammals

Marine mammals in longline fisheries

2.23 Three seal mortalities were recorded in the Convention Area during the 2007/08 season (WG-FSA-08/5 Rev. 1, paragraph 5). One Antarctic fur seal (*Arctocephalus gazella*) was reported hooked through the bottom lip, presumably on setting, in Area 48, another one was recorded entangled on the backbone of a mainline and drowned in Division 58.5.2, and a crabeater seal (*Lobodon carcinophagus*) was caught on the line in Subarea 88.1.

2.24 At the time of the meeting, Australia provided information on one additional observed mortality of a southern elephant seal (*Mirounga leonina*) on 13 September 2008 on the longline vessel *Austral Leader II* in Division 58.5.2. The observer data will be provided to the Secretariat once the cruise is completed.

Marine mammals in trawl fisheries

Krill

2.25 Six marine mammal mortalities were recorded in the krill trawl fishery in 2007/08, all in Subarea 48.3 (Table 8). Five were fur seals and one was recorded as unidentified. This is an increase from the 2006/07 season where no mortalities were recorded (Table 9). Observers reported on the use of seal excluder devices and routine net cleaning (WG-FSA-08/6 Rev. 1, paragraph 5).

2.26 The Working Group noted that observed marine mammal mortalities are currently not extrapolated to estimated totals as they are for seabirds (paragraphs 7.4 to 7.8).

Finfish

2.27 No marine mammal entanglements were observed in finfish trawl fisheries (Table 8; WG-FSA-08/6 Rev. 1, paragraph 14). This was also the case for 2006/07 season.

Marine mammals in pot fisheries

2.28 No marine mammal mortalities were reported for pot fisheries in the Convention Area (WG-FSA-08/8). This was also the case for 2006/07 season.

Information relating to the implementation of
Conservation Measures 26-01, 25-02 and 25-03

2.29 Information from observer reports relating to the implementation of Conservation Measures 26-01, 25-02 and 25-03 in 2007/08 was provided by the Secretariat (WG-FSA-08/7 Rev. 2). The data reported exclude fishing activity within the French EEZs in Subarea 58.6 and Division 58.5.1 for which data were not available.

Conservation Measure 26-01 'General environmental protection during fishing'

Plastic packaging bands

2.30 Conservation Measure 26-01 prohibits the use of plastic packaging bands to secure bait boxes. The use of other plastic packaging bands is restricted to those vessels with on-board incineration facilities. On such vessels all bands must be cut and disposed of using this facility. Information from observer reports indicated that plastic packaging bands to secure bait boxes were on board during seven cruises: *Antarctic Bay, Argos Froyanes* and *Koryo Maru No. 11* in Subarea 48.3, *Argos Froyanes* in Subarea 48.4, *Shinsei Maru No. 3* in Divisions 58.4.1, 58.4.2, 58.4.3a and 58.4.3b, *Austral Leader II* in Division 58.5.2, and *Koryo Maru No. 11* in Subareas 58.6 and 58.7 (WG-FSA-08/7 Rev. 2, Table 1). Observers reported that on all vessels where plastic packaging bands to secure bait boxes were present, they were cut and retained or incinerated. There was full compliance with Conservation Measure 26-01 with respect to the use of other plastic packaging bands.

Gear debris and garbage

2.31 The Working Group noted the discharge of gear debris from the *Viking Bay* and the *Koryo Maru No. 11* in Division 48.3 (WG-FSA-08/7 Rev. 2, Table 1). This included fishing gear, such as snoods and hooks. The Working Group noted that these discharges would have negative effects on seabirds and marine mammals which could not be quantified.

Conservation Measure 25-02 'Minimisation of the incidental mortality of seabirds in the course of longline fishing or longline fishing research in the Convention Area'

Line weighting

2.32 For Spanish-system vessels, two vessels did not meet the line-weighting regime as specified in Conservation Measure 25-02, paragraph 3, as weights were spaced beyond the 40 m maximum spacing: the *Hong Jin No. 707* in Subarea 88.1 and the *Koryo Maru No. 11* in Subareas 58.6 and 58.7 (WG-FSA-08/7 Rev. 2, Figure 1).

2.33 For autoline vessels, all vessels fishing in Subareas 88.1 and 88.2 and Divisions 58.4.1, 58.4.2, 58.4.3a and 58.4.3b, met the requirement to achieve a consistent minimum line sink rate as described in Conservation Measure 24-02 (WG-FSA-08/7 Rev. 2, Table 7 and Figure 1). As in previous years, this line-weighting requirement has been fully achieved by all vessels. For 2007/08, the Working Group noted that one autoline vessel (*Antartic III* in Subarea 88.1) used clip-on weights to achieve the sink rate requirements. All other autoline vessels were using IWLs (WG-FSA-08/7 Rev. 2, Figure 1).

2.34 The Working Group noted that a line-weighting specification for the trotline method of longlining is not currently provided in Conservation Measure 25-02.

Night setting

2.35 There was 100% compliance with night setting in all areas where this was required (Subareas 48.3, 48.4, 58.6 and 58.7) (Table 10).

2.36 Vessels fishing in Subareas 48.6, 88.1 and 88.2 and Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b and 58.5.2, may set longlines during daylight hours providing they can demonstrate a consistent minimum line sink rate of 0.3 m s^{-1}, or use an IWL of at least 50 g m^{-1} and achieve a sink rate of 0.2 m s^{-1}. All vessels fishing in these areas fully implemented one or both of these requirements (WG-FSA-08/7 Rev. 2, Table 7).

Offal discharge

2.37 All longline vessels fully implemented the requirement to retain offal on board in all areas where this was required (Subareas 48.6, 88.1 and 88.2 and Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b and 58.5.2) during the 2007/08 season (Table 10).

Discard of hooks

2.38 Observers reported hooks being present in offal discharge from one of 37 longline cruises (WG-FSA-08/7 Rev. 2, Table 1). The observer on board the *Viking Bay*, fishing in Subarea 48.3, reported that for the first two days of fishing operations no attempt was made to remove hooks from offal, and this only changed when it was brought to the attention of the Fishing Master. This compares to three of 39 cruises last year with reports of hooks in offal discharge (SC-CAMLR-XXVI, Annex 6, paragraph II.52).

2.39 The Working Group expressed continued concern at the discarding of hooks in offal, given that nest surveys had once again found a high level of hooks around nests of wandering albatrosses (*D. exulans*) on Bird Island, South Georgia (WG-FSA-08/25) (paragraph 12.5). The Working Group stressed that hook ingestion persists as a severe impact on Convention Area seabirds; these hooks come from longline fisheries inside and outside the Convention Area.

Streamer lines

2.40 Full implementation of all elements of the streamer line specification increased from 80% (29 of 37 longline cruises) in 2005/06 to 87% (34 of 39 cruises) in 2006/07 and to 94.5% in 2007/08 (35 of 37 cruises) (Table 10).

2.41 The cruises where streamer lines did not meet the specification failed on streamer lengths (two cruises: *Insung No. 1* in Divisions 58.4.1, 58.4.2, 58.4.3a and 58.4.3b; *Antartic III* in Subareas 88.1 and 88.2) (Table 11).

2.42 The Working Group noted that these small deviations from full implementation with streamer line configuration had not led to any observed seabird incidental mortality. Nevertheless, the Working Group encouraged vessels to strive for full implementation.

Haul-scaring devices

2.43 Paragraph 8 of Conservation Measure 25-02 requires that a device designed to discourage seabirds from accessing baits during the haul of longlines (haul-scaring devices) shall be employed in those areas defined by CCAMLR as average-to-high or high (level of risk 4 or 5) in terms of risk of seabird by-catch. These areas are currently Subareas 48.3, 58.6 and 58.7 and Divisions 58.5.1 and 58.5.2.

2.44 Apart from one vessel (*Punta Ballena*, 96%) on one cruise in Subarea 48.3, which did not use haul-scaring devices on all hauls due to the haul-scaring device being considered dangerous on those occasions, there was full implementation of this requirement by all other vessels (Table 11).

Conservation Measure 25-03 'Minimisation of the incidental mortality of seabirds and marine mammals in the course of trawl fishing in the Convention Area'

2.45 A range of mitigation measures were used on board icefish vessels in Subarea 48.3 and Division 58.5.2 (WG-FSA-08/6 Rev. 1, paragraph 10) and implementation of Conservation Measure 25-03 was generally good.

Net sonde cables

2.46 There was a report of one vessel, the *Maksim Starostin,* which used a net sonde cable in the Convention Area during the 2007/08 season (WG-FSA-08/7 Rev. 2). The Working Group recalled its clarifications of what constitutes a net sonde cable in SC-CAMLR-XXV, Annex 5, Appendix D, paragraph 48 and SC-CAMLR-XXVI, Annex 6, paragraph II.60, and noted that this latest report was in contravention of Conservation Measure 25-03, although the observer recorded that this only occurred on one continuous trawl lasting 26 hours, which did not result in any observed seabird mortalities.

Offal discharge

2.47 One krill vessel, the *Dalmor II,* fishing in Subarea 48.3 was observed discarding offal during net hauling. The observer on board reported that the offal discharge was due to accidents and technical problems (WG-FSA-08/7 Rev. 2, Table 6). The observer reported that in normal circumstances, to avoid discarding offal when the net is on the surface near the vessel, a red light is turned on in the factory and meal and meat production is halted.

2.48 The Working Group noted that the nature, type and definition of discharges varies both within and between finfish and krill trawl fisheries. This difference should be evaluated in considering the application of paragraph 3 of Conservation Measure 25-03 in the krill fishery.

Summary of conservation measure implementation

2.49 The Working Group noted that in 2005 it had explicitly identified those vessels that had fully implemented the requirements of Conservation Measures 25-01, 25-02 and 25-03 (SC-CAMLR-XXIV, Annex 5, Appendix O, paragraphs 48, 61 and 62). The Working Group further noted COMM CIRC 08/109 which outlined the provision in Conservation Measure 41-02 for an extension to the fishing season for toothfish in Subarea 48.3 for those vessels that have exhibited full compliance with Conservation Measure 25-02. In order to facilitate any such assessment of compliance in the coming season, the Working Group noted that the following vessels did not fully implement the requirements of Conservation Measures 26-01, 25-02 and 25-03:

(i) *Antarctic Bay, Argos Froyanes, Shinsei Maru No. 3, Austral Leader II* and *Koryo Maru No. 11* which had plastic packing bands to secure bait boxes on board during cruises in the Convention Area (paragraph 2.30);

(ii) gear debris from the *Viking Bay* and the *Koryo Maru No. 11* and the discharge of garbage from the *Viking Bay* (paragraph 2.31);

(iii) *Koryo Maru No. 11* and the *Hong Jin No. 707* which exceeded the maximum spacing between weights on longlines (paragraph 2.32);

(iv) *Viking Bay* due to the discharge of hooks in offal (paragraph 2.38);

(v) *Insung No. 1* and *Antartic III* which used streamers that did not meet the minimum length specified (paragraph 2.41);

(vi) *Punta Ballena* which did not use haul-scaring devices on all hauls (paragraph 2.44);

(vii) *Maksim Starostin*, which used a net monitor cable during one krill trawl (paragraph 2.46);

(viii) *Dalmor II* which discharged offal during net hauling while trawling for krill (paragraph 2.47).

Advice to the Scientific Committee

2.50 The total extrapolated seabird mortalities due to interactions with fishing gear during longline fishing for *Dissostichus* spp. in the Convention Area in 2007/08 were estimated to be 1 355 petrels (91% white-chinned petrels, 7% grey petrels and 2% *Macronectes* species). All these estimated mortalities were from within the French EEZ, with 131 seabirds in Subarea 58.6 and 1 244 in Division 58.5.1 (paragraphs 2.3 and 2.4).

2.51 A total of five seabird mortalities (3 white-chinned petrels and 2 king penguins) were reported during trawling for finfish in the Convention Area, all occurring in the icefish fishery in Subarea 48.3. No seabird mortalities were reported during trawling for krill or during pot fishing (paragraphs 2.13, 2.18, 2.19 and 2.22).

2.52 Nine seal mortalities were recorded in the Convention Area during the 2007/08 season (WG-FSA-08/5 Rev. 1, paragraph 5); comprising 2 Antarctic fur seals and 1 crabeater seal in the longline fishery and 5 Antarctic fur seals and 1 unidentified seal in the trawl fishery (paragraphs 2.23 to 2.26).

2.53 The Working Group recommended that the Scientific Committee refer to SCIC the information about less than full implementation of Conservation Measures 26-01, 25-02 and 25-03 (paragraph 2.49 and references therein).

2.54 Recalling the development during 2008 of a CCAMLR poster to educate fishers about the need to avoid discarding of hooks in offal, the Working Group recommended that the Scientific Committee request Commission Members to actively circulate this poster, and (when developed) the CCAMLR marine debris poster, to their fishers operating in areas where Convention Area seabirds and marine mammals occur, and ensure display of the posters on their vessels (paragraphs 2.31, 2.39 and 12.12).

REVIEW OF ACTION PLANS TO ELIMINATE SEABIRD MORTALITY

France's action plan to reduce/eliminate seabird mortality in Subarea 58.6 and Division 58.5.1

3.1 The Working Group reviewed France's action plan developed to reduce seabird incidental mortality in Subarea 58.6 and Division 58.5.1 (SC-CAMLR-XXVII/8). As noted by France last year (SC-CAMLR-XXVII, paragraph 5.7), the objective of the action plan is to reduce the level of incidental mortality (noted in SC-CAMLR-XXVI, paragraph 5.3) by a factor of two by 2010. The plan contains action details for the following five elements:

- prescription of conservation measures
- regulatory instruments
- education and training
- data collection
- research and development.

3.2 Key actions to note include: a cooperative study to evaluate the seabird incidental mortality problem in the French fishery and develop recommendations and solutions; an analysis of the environmental, spatial, temporal and operational effects on the incidental mortality of white-chinned and grey petrels in the longline fishery in Subarea 58.6 and Division 58.5.1; substantial improvements to the mitigation measures being used (particularly haul-mitigation devices and streamer lines), use of seasonal/area fishery closures, improvements to observer data collection and reporting, coordination between TAAF and ad hoc WG-IMAF, and formation of an independent technical working group to advise TAAF.

3.3 Mr C. Marteau (France) reported that in response to recommendations (SC-CAMLR-XXVII/BG/10) to improve the performance of streamer lines, modifications were made in the

latter part of the 2007/08 season to use multiple streamer lines and to increase the aerial coverage of the lines. The Working Group noted that vessels were operating with up to 10 streamer lines, including outboard extensions to increase the breadth of aerial coverage and that this would likely be more effective at reducing white-chinned and grey petrel mortality than installing a boom and bridle system as recommended (SC-CAMLR-XXVI, Annex 6, paragraph II.26(v)). It was also noted that in the 2008/09 season the attachment height of the streamer lines would be increased to maximise the aerial extent of streamer lines.

3.4 The Working Group also understood that offal management practices have been modified and vessels may only discard offal twice during fishing operations: between the end of setting operations for the day and the start of hauling operations; and, in the period between completing the haul of one line and starting the haul of the next line. The Working Group reiterated that full offal retention is best practice for reducing the attractiveness of the vessel to seabirds and avoiding interactions between seabirds and fishing gear.

3.5 Mr Marteau presented data that demonstrated the overlap between annual incidental mortality by fishing effort in the French EEZs and the breeding season of white-chinned petrels and he stated that there will be additional closure in Division 58.5.1 from 1 February to 10 March 2009 (closure in the 2007/08 season: from 15 February to 15 March) in order to cover the most sensitive time for the white-chinned petrels. In the context of fisheries management and potential seasonal closures to reduce seabird incidental mortality in the peak breeding season, the Working Group considered this very useful information. The Working Group requested that France submit similar figures in 2009 for both Subarea 58.6 and Division 58.5.1, based on an incidental mortality rate calculated for each week of the season, overlaying fishing effort and the breeding seasons of white-chinned and grey petrels.

3.6 The Working Group reviewed the action plan as well as six other papers containing information and analyses on seabird incidental mortality in the French EEZ (SC-CAMLR-XXVII/10, 12 and BG/8, 10, 11 and 12). These papers were submitted in French and the Working Group acknowledged that the translation into English undertaken by the Secretariat greatly facilitated discussion by ad hoc WG-IMAF. The Working Group summarised the progress in implementing the recommendations contained in these papers and the Scientific Committee's recommendations (SC-CAMLR-XXVI, paragraph 5.6) in Table 12.

3.7 The Working Group assumed that the observed reduction in incidental mortality is mainly attributable to the intensified management efforts and implementation of the action plan. As several measures were newly implemented simultaneously, it is not possible to quantify the contributions of each individual measure to reduced by-catch rates. While this suite of measures may ultimately be effective in reducing the incidental mortality to targeted levels, the lack of understanding of the contribution of each measure to the overall mitigation outcome may create difficulties in the future should fishing practices change.

3.8 The Working Group was not able to ascertain the specific incidental mortality thresholds used in the real-time management controls. The Working Group recognised the complexity of these management decisions and the need to maintain real-time flexibility. Some of these factors include: weekly or daily reports of vessel-specific by-catch rates and numbers of birds taken, area and date of fishing (with respect to risks associated with interactions with white-chinned and grey petrels), the vessel's target fish catch amounts and quota.

3.9 The Working Group thanked Mr Marteau and Dr S. Waugh for their work on the cooperative study and the considerable assistance of Ms Graham at the meeting.

Advice to the Scientific Committee

3.10 The Working Group requested France to submit an English translation of SC-CAMLR-XXVII/BG/8 to WG-SAM (SC-CAMLR-XXVI, paragraph 5.6(ii)) in order to allow that Working Group to consider the modelling approach in the context of providing management advice (paragraphs 3.6 and 8.7).

3.11 The Working Group is very encouraged by these interim results and France's progress in implementing the action plan. The Working Group recognised that some of the recommendations are still under consideration and many have already been implemented. It appears that significant reductions, and perhaps near-zero mortalities, can be realised with continued diligence and strict attention to adherence with the action plan. The Working Group looked forward to intersessional work with TAAF and providing assistance as needed.

3.12 The Working Group requested that when France submits its progress report on action plan implementation in 2009 to CCAMLR, figures be included to show the overlap between weekly fishing effort by sector and seabird incidental mortality rates. Similar figures were presented to ad hoc WG-IMAF this year and were informative to its discussions (paragraph 3.5).

3.13 The Working Group noted that its advice remained that were France to fully implement all elements of CCAMLR's best-practice advice for mitigation of incidental mortality of seabirds, the levels of mortality observed in the French EEZ would be substantially reduced to near-zero levels.

INCIDENTAL MORTALITY OF SEABIRDS AND MARINE MAMMALS IN FISHERIES OUTSIDE THE CONVENTION AREA

4.1 The Working Group discussed the incidental mortality of seabirds outside the Convention Area in respect of the CCAMLR standing request to Members to report on the details and magnitude of seabird mortality for species breeding within the Convention Area, but arising from fisheries conducted outside the Convention Area (SC-CAMLR-XXIV/BG/28, item 3.2). Members, non-Contracting Parties and international organisations are also asked to provide information on longline fishing effort in the Southern Ocean outside the Convention Area and on the use and effectiveness of mitigation measures outside the Convention Area.

4.2 Written reports were provided by New Zealand (WG-FSA-08/47) and Australia (WG-FSA-08/37 Rev. 1). The Working Group welcomed these reports noting that both Members had applied mitigation measures and processes that had been used by CCAMLR to significantly reduce seabird incidental mortality in the Convention Area.

Advice to the Scientific Committee

4.3 Given that considerably greater levels of mortality of Convention Area seabirds continue to occur in areas north of the Convention Area, compared to levels within the Convention Area, the Working Group again urged all Members to comply with the request to report on incidental mortality of Convention Area seabirds and marine mammals arising from fisheries conducted outside the Convention Area (Resolution 22/XXV, paragraph 3; SC-CAMLR-XXV, Appendix D, Table 20, item 3.2). Members submitting reports in 2009 are encouraged to give emphasis to information on incidental mortality, numbers by species wherever possible, and the use of mitigation measures and management approaches similar to those used in CCAMLR fisheries or potentially relevant to such fisheries.

4.4 No data were received relating to fisheries' incidental mortality of Convention Area marine mammals outside the Convention Area.

INCIDENTAL MORTALITY OF SEABIRDS DURING IUU FISHING IN THE CONVENTION AREA

5.1 As no information is available on rates of incidental mortality of seabirds from the IUU fishery, estimation of the incidental mortality of seabirds during IUU fishing within the Convention Area presents a number of difficulties, requiring various assumptions to be made. Notwithstanding this, in previous years the Working Group has prepared estimates of seabird incidental mortality in IUU longline fisheries using both the average catch rate for all cruises from the appropriate period of the regulated fishery in a particular area and the highest catch rate for any cruise in the regulated fishery for that period. The method used to prepare estimates of the incidental mortality of seabirds during IUU fishing within the Convention Area is described in full in SC-CAMLR-XXV/BG/27 and in SC-CAMLR-XXII, Annex 5, paragraphs 6.112 to 6.117.

5.2 Estimates of IUU seabird incidental mortality in longline fisheries have been prepared every year since 1996. The most recent estimates (2007) of potential IUU seabird incidental mortality in the Convention Area for longline vessels are provided in SC-CAMLR-XXVI/BG/32.

5.3 The Working Group noted that during the 2007/08 season, at least five of the six IUU vessels sighted in the Convention Area were reported to be using gillnets (WG-FSA-08/10 Rev. 2). There was discussion on how estimates of IUU seabird incidental mortality could be estimated, in the absence of a clear understanding of:

(i) the types and extent of gillnet gear being used, and how the gear was deployed;

(ii) the composition of seabird species impacted by gillnets, noting that penguins may be more likely to be caught in gillnets than in longline and trawl gear operations;

(iii) the likely incidental mortality rates occurring in gillnet operations in Antarctic waters;

(iv) an appropriate method of estimating incidental mortality for gillnet gear.

5.4 It was concluded that it was not possible to develop reasonable estimates without such knowledge. The Working Group would welcome any additional information from Members with a regulated gillnet fishery that would provide some empirical data and guidance to assist in this purpose in the future.

5.5 The assessment of the risk from fishing in CCAMLR subareas and divisions that is reviewed annually by ad hoc WG-IMAF (SC-CAMLR-XXVI/BG/31) currently considers albatrosses and petrels as species at risk from trawl and longlines, but no consideration has been given to gillnet operations.

5.6 Irrespective of the level of knowledge about the incidental mortality on IUU gillnet vessels, the Working Group expressed serious concern that there would likely be interactions with seabirds, particularly if fishing was occurring in high-risk areas and at times of the year when albatrosses, petrels and penguins were breeding. It is important to recognise that the inability to estimate incidental mortality associated with IUU gillnet fishing does not imply that it is lower than would be anticipated had all of those IUU vessels deployed longlines.

5.7 Because many seabird species are facing potential extinction as a result of fisheries-related mortality, the Working Group again requested the Commission to continue to take action to prevent further incidental mortality of seabirds by IUU vessels in the forthcoming fishing season.

Advice to the Scientific Committee

5.8 Estimates of seabird incidental mortality during IUU fishing within the Convention Area, previously estimated for longline effort, have not been prepared this year because most IUU effort was observed to be from vessels using gillnets and information from which to make extrapolations for this gear type were not available (paragraph 5.3).

5.9 The Working Group would welcome any additional information from Members with a regulated gillnet fishery that would provide some empirical data and guidance to assist in this purpose in the future (paragraph 5.4). Further, information from actions against IUU vessels should provide information of utility for ad hoc WG-IMAF in describing the interaction between gillnet fishing and seabirds.

5.10 The Working Group expressed serious concern that there would likely be seabird incidental mortality arising from IUU gillnet fishing and recognised that the inability to estimate incidental mortality associated with this fishing activity does not imply that it is lower than would be anticipated had all of the reported IUU vessels deployed longlines (paragraph 5.6).

RESEARCH INTO AND EXPERIENCE WITH MITIGATION MEASURES

Longline

6.1 WG-FSA-08/44 reported the results of a preliminary comparison conducted in Subarea 48.3 of Spanish system longlines and trotlines with respect to the CPUE of toothfish

and selected non-target species. Toothfish CPUE (kg/thousand hooks and kg/set) was greater for trotlines than Spanish system lines when cetaceans were present. This difference increased with increasing abundance of cetaceans, highlighting the potential of this gear to reduce cetacean depredation. By-catch to catch ratio was greater by number for Spanish system lines when cetaceans were present during hauling. However, there was an increase in the incidence of injury to skates and toothfish associated with trotlines fitted with 'cachalotera'. The Working Group supported further trials with larger sample sizes in the future and encouraged that, as far as is practicable, future comparisons of the two fishing methods include not only effects on target and non-targeted fish species, but environmental attributes, such as seabirds and seals, the benthos, gear loss, marine pollution and operational considerations.

6.2 WG-FSA-08/60 provided a descriptive review of the autoline method to clarify CCAMLR conservation measures relating to the autoline method of fishing. The paper provided useful descriptions of gear used and operational procedures, including diagrams and a glossary of terms appropriate to autolining. The Working Group acknowledged the usefulness of the document and encouraged Members to submit similar reviews of the other fishing methods used in the Convention Area, such as the Spanish system and trotline methods of longlining, use of pots and trawl methods for mackerel icefish, toothfish and krill, including the continuous trawling variation.

6.3 The Working Group discussed the line-weighting regime that might be required for the trotline method of longlining (paragraph 2.34). The Working Group recommended, based on previous descriptions of the gear and its line sink rate (SC-CAMLR-XXVI, Annex 6, paragraphs II.81 to II.91 and II.100), that a line-weighting regime be specified for this gear type. The specification is as follows: vessels using the trotline system exclusively (not a mix of trotlines and the Spanish system within the same longline) shall deploy weights on the hook-end of all droppers in the trotline. Weights shall be traditional weights of at least 6 kg or solid steel weights of at least 5 kg. Vessels alternating between the use of the Spanish system and trotline method shall use: (i) for the Spanish system, line weighting shall conform to the provisions in paragraph 3 of Conservation Measure 25-02; (ii) for the trotline method, line weighting shall be either 8.5 kg traditional weights or 5 kg steel weights attached on the hook-end of all droppers in the trotline at no more than 80 m intervals.

Trawl

6.4 The Working Group reviewed the data from cruise reports on mitigation measures used in trawl fisheries and developed advice for minor changes to the observer logbooks to capture improved detail on the use of mitigation measures used during shooting and hauling. The recommended changes were provided directly to the Secretariat.

6.5 The Working Group noted that data from four seasons of operational experience indicate that net binding is a highly effective and simply applied mitigation measure and that, in combination with net cleaning and net weighting, it was considered to be largely responsible for the continued reduction in incidental mortality in the icefish trawl fishery. Noting that changes adopted to Conservation Measure 42-01 last year made net binding mandatory in the icefish trawl fisheries in Subarea 48.3 in 2007/08 (CCAMLR-XXVI,

paragraph 13.72; Conservation Measure 42-01, paragraph 7 (Subarea 48.3)), the Working Group reiterated the Scientific Committee's recommendation to test its utility as appropriate in other Convention Area pelagic trawl fisheries (SC-CAMLR-XXVI, paragraph 5.29(v)).

6.6 Mr B. Baker (ACAP) updated the Working Group on the Second Meeting of the ACAP Seabird Bycatch Working Group (SBWG) held in Hermanus, South Africa (22 to 25 August 2008) (WG-FSA-08/61). At that meeting, New Zealand tabled a review of measures to reduce seabird incidental mortality in trawl fisheries (AC4 Doc 55, www.acap.aq), with the view to ACAP developing best-practice recommendations for mitigating seabird incidental mortality in trawl fisheries. The review highlighted work conducted in CCAMLR trawl fisheries, particularly offal management and measures to reduce net entanglements in pelagic trawl fisheries.

6.7 The ACAP SBWG identified the following four research priorities to reduce seabird incidental mortality in trawl fisheries:

(i) offal discharge management
(ii) methods to reduce seabird entanglement during hauling
(iii) improving the performance of streamer lines
(iv) investigating effectiveness of net binding and net weighting.

Advice to the Scientific Committee

6.8 The Working Group recommended that the incidental mortality and depredation mitigation measure developed by Chile be reported as trotlines fitted with 'cachaloteras' (paragraph 6.1).

6.9 The Working Group requested that the Scientific Committee seek from ad hoc TASO a technical description of the continuous trawling methods used in Convention Area krill fisheries that includes gear used, fishing operations and details of on-board processing and overboard discharges, and detailed descriptions of other gear types (paragraph 6.2).

6.10 The Working Group reiterated the Scientific Committee's recommendation (SC-CAMLR-XXVI, paragraph 5.29(v)) to test the utility of net binding, as appropriate, in other Convention Area pelagic trawl fisheries (paragraph 6.5).

6.11 The Working Group recommended that Conservation Measure 25-02 be modified to include line-weighting specifications for vessels using the trotline method of longlining (paragraph 6.3).

OBSERVER REPORTS AND DATA COLLECTION

Banded bird observation data

7.1 The Working Group noted that although several observers on longline vessels had reported seeing banded seabirds in the 2007/08 season, only three observers were able to

record the band details (WG-FSA-08/5 Rev. 1, paragraph 10). No banded birds were observed from trawlers (WG-FSA-07/8 Rev. 1, paragraph 11). Information on banded birds is recorded in the observer's cruise report.

7.2 The Working Group noted that at-sea observations of banded seabirds from fishing vessels have allowed useful research into the provenance and activity of seabirds interacting with fishing fleets (e.g. Croxall et al., 1999; Otley et al., 2007).

7.3 The Working Group recommended that in future the observers record the following information on any observed banded birds in their cruise reports: date of observation, location of observation (latitude and longitude is preferred), number of bands, identification number on each band, colour of each band, whether each band is plastic or metal, attachment location of each band (e.g. left or right leg), any other visible text or identifying feature on each band, photo of band/s if possible, status of the bird at the time of observation (e.g. on water, flying, caught on fishing gear), and what happened to the bird and band since the encounter (e.g. bird died and band removed, released alive with the band).

Extrapolation of total marine mammal incidental mortality

7.4 The Working Group noted that due to the nature of marine mammal incidental mortality events, observers are likely to be aware of and record all such events that occur while they are on board. Therefore only fisheries that do not have 100% coverage of cruises require any extrapolation of observed marine mammal incidental mortality to total marine mammal incidental mortality for the fishery. Therefore, the Working Group only considered the requirements and design of a protocol for the extrapolation of the total marine mammal incidental mortality of the krill trawl fishery.

7.5 The Working Group noted that observer coverage in the krill fishery has been limited in scope and representation of vessels and areas, subareas and divisions. This limited observer coverage does not allow full consideration of the factors that influence the occurrence of marine mammal incidental mortality.

7.6 Factors that the Working Group considered may be important for determining an overall estimate of marine mammal incidental mortality are: fishing method, duration of trawl, trawl speed, size of wing mesh, design and location of seal exclusion device, different styles and nature of processing, vessel turning behaviour, and relative seal abundance in the area fished.

7.7 The Working Group noted that due to the operational differences between continuous and traditional trawling for krill, extrapolation should be done separately for the two methods. The Working Group considered that an initial scalar for the continuous trawling method could be hours trawled and for traditional trawling the number of tows, and those extrapolations should ideally be calculated within vessel and fishing area stratifications. The Working Group noted that an indicative extrapolation of total incidental mortality of marine mammals could be based on a gear type and fishing area stratification given systematic observer coverage from the krill fishery.

7.8 The Working Group noted that once more observer information is available, it should examine whether there is a difference in interactions within fisheries between various marine mammal groups (e.g. between pinniped families, *Phocidae* and *Otaridae*).

Progress on a trawl warp strike data collection protocol
for inside the Convention Area

7.9 The Working Group evaluated data collected on seabird warp strikes in Convention Area trawl fisheries in 2007/08. Warp-strike data were collected in 157 of 227 (69%) icefish trawls in Subarea 48.3. One warp strike was recorded with an albatross on the water. These data suggest that warp strikes pose minimal risk to seabirds in the Subarea 48.3 icefish trawl fishery. Warp-strike data were also collected for 49 of 347 (14%) trawls for toothfish and icefish in Division 58.5.2 and for 248 of 375 (66%) krill trawls (including conventional and continuous gear types) in Subareas 48.1, 48.2 and 48.3.

7.10 The Working Group noted that warp-strike data were collected in almost 70% of icefish and krill trawls in Subareas 48.1, 48.2 and 48.3. This is an increase from the 59% achieved in 2006/07 from the icefish trawl fishery in Subarea 48.3 and an increase from 0 to 66% in the krill trawl fishery (SC-CAMLR-XXVI, Annex 6, paragraph II.122). The Working Group congratulated observers and technical coordinators on the improved implementation of this protocol. The data suggest that, unlike trawl fisheries outside the Convention Area, warp strikes pose minimal risk to seabirds in the Subarea 48.3 icefish trawl fishery.

7.11 The Working Group noted that advice provided in 2007/08 (SC-CAMLR-XXVI, Annex 6, paragraph II.123) to improve the quality of data collected on specific issues related to the warp-strike protocol resulted in improved data quality. However, a review of the data indicated that when recording data, care needed to be taken to ensure that the presence of birds ('yes/no') corresponded correctly with the data field of their estimated abundance.

Modification of the warp-strike protocol for krill continuous trawling

7.12 The Working Group was requested by ad hoc TASO (SC-CAMLR-XXVII/BG/6, paragraph 3.7) and WG-EMM (Annex 4, paragraph 4.53) to clarify the application of the warp-strike protocol for use on krill vessels using the continuous trawl method.

7.13 Noting the successful implementation of warp-strike protocols in the majority of trawl fisheries, the Working Group recommended that the protocol be adapted for continuous trawl vessels targeting krill. Current protocols only stipulate monitoring the warps at least once per day during daylight hours for a 15-minute period after the shot. In the case of a continuous trawl this may only happen once over a period of several days, leaving extended periods of trawling unmonitored.

7.14 The Working Group considered that the protocol should be used during 2008/09 to detect if there is any risk of warp strike from continuous trawling for krill. Therefore, it was decided that the warps should be monitored at times of potentially higher risk, i.e. after the net had entered the water and the deck is washed down, when offal is being discharged, when the vessel is turning and during any other similar events as noted by the observer.

7.15 The Working Group noted that observations should be made on a daily basis for a 15-minute period during one of these higher-risk events and after the net has been shot. If a 15-minute period during one of these higher-risk events is not possible, then one random 15-minute period during daylight hours should be selected to monitor the trawl warp. The data collected will be reviewed and analysed at future ad hoc WG-IMAF meetings with subsequent reviews of the protocol where necessary.

7.16 The Working Group recommended that a change be made to the current reporting protocols for observers operating on krill vessels using the continuous trawl system as information needs to differentiate between when the net enters and leaves the water and when the net remains in the water but a trawl is recorded every two hours (paragraph 2.21).

Data collection of aerial extent of streamer lines

7.17 The Working Group recommended several revisions to the aerial extent estimation methods to standardise and improve the quality of data collected by observers on the L2 forms in the scientific observer e-logbook in accordance with the appendix to Conservation Measure 25-02. These methods for estimating aerial extent are:

(i) record accurately the spacing between streamers and count the streamers until the streamer line touches the water;

(ii) stream a separate rope graduated in metres with a 'tension device' on end to the point where the streamer line touches the water (suggested for use where multiple or V-type streamer lines are deployed);

(iii) when conducting sink rate trials using bottles, record the time from the stern to when it passes the point where the streamer line touches the sea surface. Calculate the aerial extent taking into account the speed of the vessel.

7.18 The Working Group recommended that the L2 data form in the e-logbook be revised to include reporting on the method used to assess aerial extent.

7.19 Where vessels deploy more than one streamer line at a time, the vessel must advise the observer which line is deployed in accordance with Conservation Measure 25-02. The specifications of this line are to be measured and recorded in the L2 datasheet at least once every seven days. Observers are also to be encouraged to record additional environmental data, i.e. wind and sea conditions, as well as a description of the towed object that may affect aerial extent.

7.20 The Working Group requested that Members report on the use and efficacy of multiple streamer line combinations.

Ad hoc WG-IMAF priorities for data collection by observers

7.21 The Working Group revised Table 21 from SC-CAMLR-XXVI, Annex 5, to provide more detail on its priorities for observer data collection (Table 13).

Trawl

7.22 The Working Group reiterated its needs and priorities for data collection in the finfish trawl fisheries as stated in SC-CAMLR-XXVI, Annex 6, Table 19 (Table 14).

7.23 The Working Group identified the needs and priorities for data collection in the krill trawl fisheries to be the following:

(i) observe 100% of hauls to record any incidental mortality of seabirds and marine mammals;

(ii) record the use and design of mitigation devices;

(iii) warp-strike observations at least once per 24-hour period.

Longline

7.24 Noting that ad hoc TASO requested that all working groups consider required statistical power and importance of coverage levels (SC-CAMLR-XXVII/BG/6, paragraph 3.27), the Working Group recalled that it had considered statistical power previously (e.g. WG-FSA-05/50) which led to the guidance contained within SC-CAMLR-XXVI, Annex 6, Tables 19 and 20).

7.25 The Working Group again reviewed its needs and priorities for data collection in the longline fisheries and clarified in detail its requirements and revised its advice (Table 15). Noting the current recommended proportion of observer coverage for hauling and setting operations (SC-CAMLR-XXVI, Annex 6, Table 20) and concerns expressed about the relative proportion of time that observers spend on ad hoc WG-IMAF-related tasks during a day (SC-CAMLR-XXVII/BG/6, paragraph 3.23), the Working Group revised its advice with respect to observations during longline setting as follows:

(i) for 100% of sets, at least one observation should be undertaken to record the use of mitigation measures and offal management practices;

(ii) observers are no longer requested to observe 100% of hooks set.

7.26 The Working Group recommended the percentage of hooks observed hauled (SC-CAMLR-XXVI, Annex 6, Table 20) remain unchanged and noted that the time spent on hauling observations for ad hoc WG-IMAF is also used to collect information for other working groups and committees.

7.27 The Working Group reiterated that, when reporting on longline fishing, there was a need to distinguish which of the three fishing methods, Spanish system, autoline system or trotline system, or combination thereof, were used on a vessel. In addition, if a trotline system was in use, it was important to report whether 'cachaloteras' were used.

Marine debris data collection

7.28 To assist in tracing the source of debris, observers are requested to provide details and photographs of the fishing gear used within the Convention Area. Observers are requested to record if plastic packaging bands are on board and any observations of accidental or intentional loss of fishing gear, plastic packaging bands or any other non-biodegradable material. The Working Group requested that ad hoc TASO develop a protocol for the collection of a photo library of fishing gear used (see also paragraph 12.9).

Advice to the Scientific Committee

7.29 The Working Group recommended that:

(i) with respect to general issues –

(a) in future the observers record detailed information on any observed banded birds in their cruise reports in order that the Secretariat can investigate the provenance of those birds (paragraph 7.3);

(b) its updates to the matrix of observers' tasks and priorities (SC-CAMLR-XXVI, Annex 5, Table 21) and the recommendations of observer coverage required by risk level (SC-CAMLR-XXVI, Annex 6, Table 20) in Tables 13 to 15 be noted (paragraphs 7.21, 7.22 and 7.25);

(c) observers be requested to provide photographs of gear used within the Convention Area and any accidental or intentional loss of fishing gear, plastic strapping or any other non-biodegradable material (paragraph 7.28);

(d) ad hoc TASO develop a protocol for the collection of a photo library of fishing gear used (paragraphs 7.28 and 12.9);

(ii) with respect to krill fisheries –

(a) systematic observer coverage in the krill fishery is required to allow extrapolation of total marine mammal incidental mortality (paragraphs 7.4 to 7.8);

(b) the modified warp-strike protocol be used in 2008/09 on continuous trawl vessels targeting krill (paragraphs 7.14 and 7.15);

(c) the data required to address the priorities of the Scientific Committee for observer data collection on krill trawl vessels pertaining to incidental mortality of seabirds and marine mammals (paragraph 7.23) are:

- observe 100% of vessels with the proportion of sets and hauls to be observed identified in Table 14;
- record the use and design of mitigation devices;
- warp-strike observations at least once per 24-hour period;

(iii) with respect to longline fisheries –

(a) technical coordinators encourage observers to undertake measurements of the streamer line once every seven days, and that the L2 form and appropriate instructions are modified to include the measurement technique used to estimate aerial extent (paragraphs 7.17 and 7.18);

(b) when reporting on longline fishing, there was a need to distinguish which of the three fishing methods, Spanish system, autoline system or trotline system, or combination thereof, were used on a vessel. In addition, if a trotline system was in use, it was important to report whether 'cachaloteras' were used (paragraph 7.27);

(iv) with respect to trawl fisheries –

(a) the warp-strike protocol in all Convention Area trawl fisheries (SC-CAMLR-XXVI, Annex 6, paragraph II.124) should be implemented in 2008/09, particularly in trawl fisheries in Division 58.5.2 (paragraphs 7.9 to 7.11);

(b) observers provide a more detailed description of the mitigation measures used in the icefish fishery in Subarea 48.3 (paragraph 2.16).

RESEARCH INTO THE STATUS AND DISTRIBUTION OF SEABIRDS AND MARINE MAMMALS

8.1 The Working Group welcomed an update on the Fourth Meeting of the ACAP Advisory Committee and was encouraged by the progress in the work of the Status and Trends Working Group (AC4 and STWG reports at www.acap.aq). Significant progress has been achieved with the ACAP Species Assessments (SC-CAMLR-XXVI, Annex 6, paragraph II.127) which are due to be completed and available on the ACAP website before the April 2009 ACAP Meeting of Parties. The Working Group agreed that the information presented in the Species Assessments (which include up-to-date data on population status and trends, foraging distributions and interactions with fisheries) will be very useful to ad hoc WG-IMAF's future work.

8.2 In order to maintain assessments of risk in CCAMLR subareas and divisions, ad hoc WG-IMAF requires comprehensive and current information on the foraging distribution of seabirds in the Convention Area. To assist with this, BirdLife International offered to provide a brief annual information paper describing new data added to the BirdLife Global Procellariiform tracking database and a more detailed summary every 3–4 years. The Working Group welcomed this offer and planned to consider the first annual report in 2009.

8.3 The Working Group received a presentation on SeaBird, a generalised age-and/or stage-structured seabird population dynamics model (WG-SAM-08/P3). The model has been applied to population data for Buller's albatross (*Thalassarche bulleri*) and will also be applied to black petrels (*P. parkinsoni*). The Working Group noted the potential for application of this modelling approach, in particular that, as it had been reviewed by WG-SAM, it might be used to develop management advice in future.

8.4 The Working Group noted that the text of SC-CAMLR-XXVII/BG/8 was available in French but that a substantial part of that paper was available in part in English as Barbraud et al. (2008). The results of this paper indicate a 37% decline in white-chinned petrels at Crozet Island and that this decline could be attributed to climate change and, to a lesser extent, fishing-related mortality.

8.5 The Working Group made the following comments on the analysis:

(i) the modelling approach did not detect any effect of incidental mortality on adult survival (one of the most sensitive model parameters for population growth rate), despite there being the evidence of an interaction as indicated by adults feeding chicks on fisheries waste;

(ii) the effects of rat eradication (which is limited to this particular colony) on the improved breeding success in the study colony and the potential impact of this on the extrapolation of the findings to other colonies in the archipelago;

(iii) the lack of any inclusion of the effects of IUU fishing in the model.

8.6 The Working Group thanked the authors for their comprehensive approach and noted that the conclusions of the paper were based on one model scenario and that the relative impact of fishing versus climate change on the population decline may differ given different plausible parameterisation.

8.7 In recognising the importance of this type of work, the Working Group reiterated its advice of last year (SC-CAMLR-XXVI, Annex 6, paragraph II.20) that the authors should submit an English translation of SC-CAMLR-XXVII/BG/8 (as this contains population modelling of both white-chinned and grey petrels) to WG-SAM (SC-CAMLR-XXVI, paragraph 5.6(ii)) in order to allow that Working Group to consider the modelling approach in the context of providing management advice. The Working Group suggested that this was an appropriate process for similar studies that may be submitted in the future.

8.8 The Working Group considered the information presented in WG-EMM-PSW-08/5 regarding the population size of white-chinned petrels at South Georgia (an estimated 70% of the global population (Brooke, 2004)). Comprehensive population surveys at South Georgia were conducted during 2005/06 and 2006/07. It was estimated that the current population of white-chinned petrels at South Georgia comprises just under one million pairs. The Working Group noted that this population estimate is 50% of the estimate from the 1980s. However, uncertainty in the confidence intervals associated with the earlier estimate precludes the determination of the magnitude of the decline. Nevertheless, had a decline of 50% occurred over the last 20 years, this would represent a catastrophic reduction in the population of white-chinned petrels.

8.9 The Working Group noted that more white-chinned petrels are incidentally killed in more fisheries than any other seabird, but the population impact of this mortality is poorly understood, partly because there are few estimates of white-chinned petrel population abundance. The Working Group thus welcomed the survey information from South Georgia and highlighted the importance of obtaining estimates of white-chinned petrel population abundance for other breeding sites, and ongoing monitoring of white-chinned petrel population abundance at all breeding sites.

8.10 Of relevance to Convention Area seabirds, the Working Group noted the 2008 update of the IUCN Red List that has resulted in changes to the status of Tristan albatross (*D. dabbenena*), which was up-listed from Endangered to Critically Endangered, and Buller's albatross which was down-listed from Vulnerable to Near-Threatened (ACAP-AC4, 2008). Of the 19 species of albatross currently listed in Annex 1 of the ACAP Agreement, four (21%) are listed as Critically Endangered, five (26%) are listed as Endangered, six (32%) are Vulnerable and four (21%) are Near-Threatened. For the seven petrel species, four (57%) are currently listed as Vulnerable and three (43%) as Near-Threatened (AC4 doc 48, Attachment A). The Working Group concurred with ACAP in recognising the significance of fisheries incidental mortality, invasive species and disease as threats influencing the survival and conservation of these species.

8.11 The Working Group noted the progress in estimating population size and status of marine mammals and seabirds made by the WG-EMM Predator Survey Workshop (WG-EMM-08/8) and data made available to the Joint CCAMLR-IWC Workshop (SC-CAMLR-XXVII/14 and BG/16).

Advice to the Scientific Committee

8.12 The Working Group noted the fundamental importance of up-to-date information on the status and distribution of seabirds in the development of risk assessments of interactions in fisheries. The Working Group welcomed continued cooperation and coordination with ACAP and BirdLife International, including the standing invitation to experts from ACAP and BirdLife International (SC-CAMLR-XXVI, paragraph 5.56) to ensure the best available scientific information was available to CCAMLR (paragraph 8.2).

ASSESSMENT OF RISK IN CCAMLR SUBAREAS AND DIVISIONS

New information relating to risk assessment

9.1 As in previous years, the Working Group assessed the numerous proposals for new and exploratory fisheries and the potential for these fisheries to lead to increases in seabird incidental mortality (paragraphs 10.2 to 10.9).

9.2 In order to address these concerns, the Working Group reviewed its assessments for relevant subareas and divisions of the Convention Area in relation to the:

(i) timing of fishing seasons
(ii) need to restrict fishing to night time
(iii) magnitude of general potential risk of by-catch of albatrosses and petrels.

9.3 Comprehensive assessments on the potential risk of interaction between seabirds and fisheries for all statistical areas in the Convention Area are carried out each year. However, there was no additional information provided this year on the at-sea distribution of seabirds. Accordingly, the assessments and advice reviewed in 2007 and combined into a background document for use by the Scientific Committee and Commission (SC-CAMLR-XXVI/BG/31) were again endorsed by the Working Group.

9.4 A summary of ad hoc WG-IMAF's assessment of risk to seabirds posed by trawl and longline fisheries in the Convention Area can be found in Tables 14 and 15 respectively and Figure 1.

Risk assessment methodology

9.5 Ad hoc WG-IMAF noted that New Zealand provided documents detailing a risk assessment methodology, known as a Productivity-Susceptibility Assessment, which examines the potential for adverse effects of fishing mortality for selected seabird and marine mammal species (WG-FSA-08/47 and 08/51). This methodology has been modified from previous assessments to include distributional overlap of the species and fisheries for five fishing methods within the New Zealand EEZ. There is interest in WCPFC to conduct such a risk assessment for the entire WCPFC Convention Area. New Zealand suggested that this method could, at some point in the future, provide a validation for the current risk methodology used within CCAMLR.

Proposals for changes to conservation measures and management advice to minimise fisheries impact on seabirds

9.6 WG-FSA-08/39 proposed to continue scientific research carried out in 2007/08 by the *Shinsei Maru No. 3* in Division 58.4.4 over the 2008/09 fishing season. The proposal incorrectly notes that this area has been assessed by CCAMLR as having a low to average risk of potential interaction between seabirds and longline fisheries, when in fact, the area is considered to have an average risk (SC-CAMLR-XXVI/BG/31). No mention is made of conservation measures relating to seabird incidental mortality in the application and the Working Group has assumed that the research will be conducted in full compliance with Conservation Measure 25-02.

9.7 WG-FSA-08/36 proposed that, for fishers whose vessels comply with certain conditions, the requirement in Protocol C1 of Conservation Measure 24-02 to test the sink rate of IWLs before entering the Convention Area is an impost on fishers that is no longer warranted. The proposal suggested that testing could instead be conducted in the first week of fishing inside the Convention Area, subject to a number of conditions. Other requirements of Conservation Measure 24-02, including the requirement for regular sink rate testing of IWL gear during fishing in the Convention Area and reporting of sink rate test results, would remain unchanged, as would the requirements applicable to fishers using other types of longlines.

9.8 The Working Group discussed the likely risk posed by initial sink rate testing within the Convention Area. It was agreed that such a change, subject to the testing being carried out with unbaited hooks, posed no additional risk to seabirds at this stage. However, maintaining a near-zero by-catch level within CCAMLR's fisheries was paramount, and failure to maintain such levels would warrant a reconsideration of this relaxation. The Working Group recommended revision of Conservation Measure 24-02 to incorporate this change to Protocols A, B and C.

9.9 WG-FSA-08/40 proposed that the Japanese-flagged vessel *Shinsei Maru No. 3* be exempted from the requirement to conduct longline sink rate tests outside the Convention Area when fishing at the end of the 2007/08 season and into the 2008/09 season, provided that the vessel conducted regular longline sink rate testing and met line sink rate requirements in 2007/08. This is because the vessel is proposing to continue fishing without leaving the Convention Area at the end of the 2007/08 season. The Working Group agreed that this proposed exemption did not present an additional risk to seabirds in the Convention Area.

9.10 WG-FSA-08/45 advised that the provisions for fishing season and mitigation measures in Conservation Measure 41-03 regulating fishing in Subarea 48.4 do not currently conform to the ad hoc WG-IMAF risk assessment advice given in CCAMLR-XXIV/BG/26. The UK proposed text that should be added to Conservation Measure 41-03 to bring the measure into line with the risk assessment, which would allow fishing outside the season (April–September) if it is conducted in accordance with Conservation Measure 24-02. The recommended small change to the first paragraph of Conservation Measure 24-02 to recognise Subarea 48.4 was endorsed by the Working Group and recommended for inclusion in a draft revision of the conservation measure.

9.11 Noting that Conservation Measure 24-02 does not currently include a protocol for trotline systems, with or without 'cachaloteras', the Working Group recommended the inclusion of a new protocol within the conservation measure for these gear types.

Advice to the Scientific Committee

9.12 Revisions to the comprehensive assessments on the potential risk of interaction between seabirds and fisheries for all statistical areas in the Convention Area were not carried out this year as no new relevant information on the at-sea distribution of seabirds was provided. Accordingly, the assessments and advice provided in 2007 and combined into a background document for use by the Scientific Committee and Commission (SC-CAMLR-XXVI/BG/31) were again endorsed by the Working Group (paragraph 9.3).

9.13 The Working Group recommended the research proposed in Division 58.4.4 by Japan be conducted in full compliance with Conservation Measure 25-02 (paragraph 9.6).

9.14 The Working Group noted that the proposal from Japan to be exempted from the requirement to conduct longline sink rate tests outside the Convention Area when fishing at the end of the 2007/08 season and into the 2008/09 season in Subarea 48.6, did not present an additional risk to seabirds in the Convention Area (paragraph 9.9).

9.15 The Working Group recommended that Conservation Measure 24-02 be modified to include:

(i) relaxation of the need to conduct initial sink rate testing outside the Convention Area, thus allowing such testing to be carried out within CCAMLR waters subject to the testing being undertaken with unbaited hooks. This would be applied to existing protocols A, B and C (paragraph 9.8);

(ii) Subarea 48.4 be added to paragraph 1 (paragraph 9.10);

(iii) a new protocol for the trotline and trotlines fitted with 'cachaloteras' systems (paragraph 9.11).

INCIDENTAL MORTALITY OF SEABIRDS IN RELATION TO NEW AND EXPLORATORY FISHERIES

New and exploratory fisheries operational in 2007/08

10.1 Of the 44 applications for exploratory longline fisheries for 2007/08, 23 were undertaken (WG-FSA-08/4). No incidental seabird mortality was recorded. The strict adherence to the requirements in Conservation Measures 24-02 and 25-02 has proven successful in achieving zero incidental mortality of seabirds. One seal, probably a crabeater, was reported caught in the exploratory fishery in Subarea 88.1 (WG-FSA-08/5 Rev. 1).

New and exploratory fisheries proposed for 2008/09

10.2 The assessment of the risk to seabirds posed by new and exploratory longline fisheries in the Convention Area is incorporated into SC-CAMLR-XXVI/BG/31, and is summarised in Table 15 and Figure 1. Table 15 also includes an assessment of recommended levels of observer coverage.

10.3 Thirty-seven notifications for exploratory longline fisheries, submitted by 11 Members, were received by CCAMLR in 2008. The areas for which longline proposals were received (CCAMLR-XXVII/12, Table 1) were assessed in relation to the risk of seabird incidental mortality according to the approach and criteria set out in SC-CAMLR-XXVI/BG/31.

10.4 All longline notifications provided sufficient information to indicate that the proposals fully comply with relevant seabird incidental mortality minimisation measures (Conservation Measures 24-02 and 25-02, and the relevant measures in the 41-series), and do not conflict with the ad hoc WG-IMAF assessment.

10.5 One notification for an exploratory trawl fishery for krill was received by CCAMLR in 2008. The area for which a trawl proposal was received (Subarea 48.6, CCAMLR-XXVII/12, Table 2) was assessed in relation to the risk of seabird incidental mortality according to the approach and criteria set out in SC-CAMLR-XXVI/BG/31.

10.6 The Working Group noted that Norway advised it would apply Conservation Measure 25-03 in this fishery. Due to the paucity of information about seabird and marine mammal interactions in this area and the assessed risk level (SC-CAMLR-XXVI/BG/31), the Working Group recommended that marine mammal exclusion devices, designed to prevent pinnipeds from entering the net, be used in this fishery, and that observation of 25% of sets and 75% of hauls be undertaken (Table 14).

10.7 Two notifications for new pot fisheries for crabs were received by CCAMLR in 2008. The areas for which these proposals were received (CCAMLR-XXVII/12, Table 3) have not been assessed in relation to the risk of seabird incidental mortality in pot fisheries. A risk assessment for pot fisheries may be possible in future, but at this time insufficient information is available to undertake such an exercise.

10.8 The Working Group agreed that in the interim, observation of pot fishing was required to collect descriptive information about the potential for seabird and marine mammal incidental mortality using this fishing method. Observation should focus on hauls for incidental mortality events and description of any entanglements.

10.9 The Working Group welcomed the improvements in notifications this year, in particular that all longline notifications provided sufficient information compared with 15% of proposals that had insufficient information in 2007.

10.10 In 2005 the Working Group developed a checklist to assist Members when completing their longline notifications (SC-CAMLR-XXIV, Annex 5, Appendix O, paragraph 193). Given the success with that method this year, the Working Group recommended that a similar checklist be developed for trawl and pot fishery notifications.

10.11 The Working Group noted that it had not undertaken a risk assessment for marine mammals to date and that this was an identified item of future work for ad hoc WG-IMAF. Completion of such a risk assessment would allow the provision of more complete advice on incidental mortality associated with fishing.

Advice to the Scientific Committee

10.12 The Working Group reiterated its recommendation that vessels fishing in new and exploratory longline and trawl fisheries have the required level of observer coverage for incidental mortality and associated information as detailed in Tables 13 to 15 (paragraph 10.2).

10.13 The Working Group recommended that marine mammal exclusion devices designed to prevent pinnipeds from entering the net be used in the exploratory krill fishery to be undertaken by Norway in Subarea 48.6, and that observation of at least 25% of sets and 75% of hauls be undertaken. The Working Group further recommended that marine mammal exclusion devices designed to prevent pinnipeds from entering the net be used in all krill fisheries (paragraph 10.6).

10.14 The Working Group recommended observation to collect descriptive information about the potential for incidental mortality in the proposed pot fisheries (paragraph 10.8).

10.15 The Working Group recommended that a checklist similar to that used for longline notifications for new and exploratory fisheries be designed by the Secretariat specifically for notifications for other new and exploratory fisheries (paragraph 10.10).

INTERNATIONAL AND NATIONAL INITIATIVES RELATING TO INCIDENTAL MORTALITY OF SEABIRDS AND MARINE MAMMALS IN FISHING

ACAP

11.1 The ACAP representative (Mr Baker) presented a report on ACAP activities in the last year; those of most relevance to ad hoc WG-IMAF are ACAP's outreach efforts with tuna RFMOs to reduce seabird incidental mortality in those fisheries and the second meeting of the ACAP Advisory Committee's Seabird Bycatch Working Group. This meeting, and meetings of ACAP's Advisory Committee, the Status and Trends Working Group and the Breeding Sites Working Group, were held in South Africa in August 2008.

11.2 The report of ACAP's Seabird Bycatch Working Group meeting was discussed (WG-FSA-08/61). Key outcomes from that meeting included:

(i) the development of a plan to guide ACAP's interactions with RFMOs and individually tailor them to each RFMO;

(ii) an agreement to appoint an ACAP 'coordinator' for each RFMO meeting who would represent ACAP at those meetings and coordinate the efforts of other ACAP Parties that are also members of that RFMO;

(iii) agreed priority ACAP 'products' for RFMOs, principally expert information and advice about seabird distribution and population trends, strategies to reduce incidental mortality, use of best-practice risk-assessment methodologies to assess seabird incidental mortality, observer data collection protocols and desirable research on mitigation measures.

11.3 CCAMLR was represented at ACAP's Seabird Bycatch Working Group meeting by the Science Officer (Dr K. Reid) who gave a presentation on the CCAMLR seabird incidental mortality risk assessment approach. The comprehensive nature of the CCAMLR data collection and assessment methodology was noted by the ACAP Working Group which also agreed that it formed a useful model for ACAP. ACAP noted that an observer program with high levels of coverage has been critical to understanding incidental mortality problems and underpinned CCAMLR's success in reducing incidental mortality in its fisheries. ACAP further agreed that the model was entirely relevant to other RFMOs and could also be adopted by ACAP for assessment of summary incidental mortality information provided by ACAP Parties. The ACAP representative thanked CCAMLR for its support for the work of ACAP and Dr Reid's attendance.

International initiatives

Implementation of CCAMLR Resolution 22/XXV

11.4 The Working Group recalled that in previous years, the Chair of the Commission wrote to their counterpart in several other RFMOs detailing the Commission's interest in reducing the by-catch of Convention Area seabirds in fisheries outside the Convention Area,

and seeking information on several matters, including seabird by-catch assessments those organisations may have conducted and mitigation measures in use in their fisheries. This correspondence had been acknowledged by one RFMO's Secretariat.

11.5 The Working Group noted that, as part of efforts in the 2007/08 intersessional period, to encourage effective implementation of Resolution 22/XXV, the CCAMLR Secretariat wrote to the designated CCAMLR observers for meetings of RFMOs with responsibility for fisheries adjacent to the Convention Area (IOTC, ICCAT, WCPFC). The CCAMLR observers were provided with a package of information to assist them to undertake the activities described in Resolution 22/XXV, paragraphs 1 (to encourage RFMOs to collect, report and disseminate annual data on seabird incidental mortality), 3 (adding seabird mortality issues to the agenda of RFMOs) and 5 (regarding measures to reduce or eliminate seabird incidental mortality). The package included the paper by Waugh et al. (2008) which describes the CCAMLR seabird incidental mortality risk assessment methodology.

11.6 In reviewing outcomes during the 2007/08 period, the Working Group noted that: (i) IOTC had agreed to a proposal for stronger and binding by-catch mitigation measures; (ii) WCPFC had adopted a proposal by some CCAMLR Parties for improved mitigation measures; and (iii) WCPFC and ICCAT are currently developing an agreed risk assessment for seabird by-catch. Thus, the Working Group concluded that, in conjunction with the efforts of CCAMLR Members who are also members of those RFMOs and had tabled proposals in those fora regarding seabird incidental mortality, this had been a more productive approach and that the earlier correspondence between the CCAMLR Secretariat and its counterparts could be usefully repeated.

11.7 Additionally, with regard to the effectiveness of Resolution 22/XXV, the Working Group recalled its previous advice that the key to future progress is the employment of robust scientific observer programs that can assist in the development of statistical estimations of incidental seabird mortality and in the targeting of efforts to reduce such mortality. Data derived from such observer programs have been critical to CCAMLR's success in reducing seabird by-catch, and the Working Group believed that such information would be invaluable to similar efforts in other RFMOs and should be a high priority for their work. The Working Group applauded Contracting Parties and NGOs that have requested that the topic of seabird mortality be included on the agenda of relevant RFMO meetings and the active role these Parties have played in advancing the adoption of risk assessment methodology and mitigation measures within these RFMOs. The Working Group encouraged continued reporting as required under paragraph 5 of Resolution 22/XXV in the future.

FAO IPOA-Seabirds

11.8 Dr B. Sullivan (BirdLife International) updated the Working Group on the UN FAO Expert Consultation held in Bergen, Norway, from 2 to 5 September 2008, to develop best-practice technical guidelines for IPOA/NPOA-Seabirds. The Consultation was chaired by Ms Rivera and the achievements of CCAMLR in reducing seabird by-catch featured prominently in the report of the Consultation. As reported in 2007 (SC-CAMLR-XXVI, Annex 6, paragraph I.65(ii)), these guidelines will extend the application of IPOA-Seabirds beyond longline fisheries and will provide guidance on best-practice to other relevant gear

(trawl and gillnet fisheries) and for regional plans developed by RFMOs. CCAMLR Members are encouraged to support the adoption of these FAO Technical Guidelines at the Twenty-eighth Session of COFI (2 to 6 March 2009).

RFMOs and international governmental organisations

WCPFC

11.9 The Working Group noted that, continuing from the adoption of a binding conservation and management measure (WCPFC-CMM 2006-02) for reducing seabird by-catch in 2006, the WCPFC meeting in December 2007 adopted minimum technical specifications for each of the seabird by-catch mitigation methods listed in the measure, based on advice and recommendations from the WCPFC's Scientific Committee and the Technical and Compliance Committee.

ICCAT

11.10 ICCAT has continued to develop and undertake its risk assessment methodology, including at a meeting in March 2008 at which, *inter alia*, seabird-tracking analysis, by-catch and population modelling was discussed. Its methodology is described in SC-CAMLR-XXVI, Annex 6, paragraph II.179. Species of interest to CCAMLR at highest risk from ICCAT fisheries include six species of albatross from South Georgia (Islas Georgia del Sur) and the Tristan da Cunha Islands, and black-browed albatross from the Falkland/Malvinas Islands.

CCSBT

11.11 The Working Group noted that CCSBT was currently meeting in New Zealand and that proposals to improve management and mitigation of seabird by-catch in CCSBT fisheries had been submitted. The Working Group reiterated its historic concerns that these fisheries are a major source of mortality for Convention Area seabirds. Given the recent adoption of mitigation measures by IOTC and WCPFC, the lack of progress in adopting such measures by CCSBT is in stark contrast with the practice in other tuna RFMOs and global best practice. The Working Group again considered that urgent action is required by CCSBT to address seabird incidental mortality.

IOTC

11.12 The Working Group noted that the IOTC, at its annual meeting in June 2008, had adopted Resolution 08/03 which contained binding seabird by-catch mitigation measures. The Working Group noted advice from the ACAP Seabird Bycatch Working Group (WG-FSA-08/61) that seabird by-catch mitigation measures in pelagic longline fisheries required further improvements and that there is still no best-practice mitigation strategy that

has been rigorously tested and available for widespread uptake by RFMOs with responsibility for managing pelagic longline fisheries. However, this IOTC Resolution represented current best practice amongst tuna RFMOs and was a useful refinement of IOTC Resolution 06/04.

11.13 Reflecting on the earlier discussions with WG-FSA about how to estimate the impact of IUU gillnet fishing, and the need for information from a regulated gillnet fishery (paragraphs 5.1 to 5.7), the Working Group noted information that suggested the IOTC was responsible for managing a gillnet fishery.

National initiatives

11.14 The Working Group noted that South Africa launched its National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries during the hosting of the 4th Advisory Committee meeting of ACAP on 22 August 2008.

11.15 The Working Group noted that New Zealand has implemented additional regulatory measures to reduce incidental mortality on longline vessels, and also considered new measures for trawl vessels (WG-FSA-08/47). Building on previous measures (use of streamer lines and night setting), pelagic longline vessels are now able to day-set with a streamer line and prescribed line-weighting regime. Demersal longliners must now use streamer lines and either night-set or employ specified line-weighting regimes when day-setting. In addition, demersal longliners must not discharge on setting, and must only discharge on the opposite side of the vessel to the hauling location. Larger trawl vessels are already required to use warp strike mitigation (e.g. streamer lines), and New Zealand is continuing to develop voluntary measures to reduce incidental mortality of seabirds in trawl fishing.

11.16 New Zealand has also streamlined reporting by fishers of seabird, marine mammal, and other protected species by-catch using a standardised mandatory reporting form. Previously, such reporting was mandatory and several different reporting methods could be used.

11.17 The Working Group noted that the newly regulated mitigation measures would benefit Convention Area seabirds, as these species occurred in New Zealand waters and encountered fisheries there, and that the reporting changes should improve understanding of the nature and extent of incidental mortality.

11.18 The Working Group welcomed a range of information and papers submitted by France to ad hoc WG-IMAF-08 (Agenda Item 3).

11.19 Mr I. Hay (Australia) reported on the second year of a trial of demersal longlining for toothfish off Macquarie Island, which lies adjacent to the Convention Area, and the seabird by-catch mitigation measures used during the trial (WG-FSA-07/19). No seabirds have been caught during the two years of the trial, which is expected to continue in 2009.

Advice to Scientific Committee

11.20 The Working Group recommended that:

(i) Members are encouraged to support the adoption of the FAO Technical Guidelines at the Twenty-eighth Session of COFI (2 to 6 March 2009) (paragraph 11.8);

(ii) the Commission be requested to consider what additional actions might be undertaken to expedite the adoption of measures to avoid or mitigate the incidental mortality of Convention Area seabirds during fishing managed by CCSBT (paragraph 11.11);

(iii) the Secretariat be asked to explore the possibility of obtaining incidental mortality and effort data, and other details, from the IOTC Secretariat about gillnetting regulated by the IOTC (paragraph 11.13);

(iv) the Scientific Committee note the increasing and beneficial role being played by ACAP in improving RFMOs' management of incidental mortality of Convention Area seabirds outside the Convention Area (paragraphs 8.1 and 11.1 to 11.3);

(v) in addition to any other activities that might routinely occur:

(a) the CCAMLR Executive Secretary be requested to write to the Executive Secretaries of the RFMOs listed in Appendix 1 of Resolution 22/XXV, again reiterating the Commission's interests in reducing the incidental mortality of Convention Area seabirds outside the Convention Area (paragraphs 11.5 and 11.6);

(b) the CCAMLR Executive Secretary be requested to seek the inclusion of an agenda item, reflecting the Commission's interests in reducing the incidental mortality of Convention Area seabirds outside the Convention Area, on the agenda of the meeting of RFB secretariats to be held in March 2009;

(c) relevant CCAMLR Parties be encouraged to undertake, or continue to undertake, the actions described in paragraphs 1, 3 and 5 of Resolution 22/XXV (paragraph 11.5).

MARINE DEBRIS AND ITS IMPACTS ON MARINE MAMMALS AND SEABIRDS IN THE CONVENTION AREA

12.1 Ad hoc WG-IMAF noted that CCAMLR's current priorities to address incidental mortality of seabirds and marine mammals include consideration of the impact of marine pollution (including lost fishing gear) and that this had been referred to ad hoc WG-IMAF by the Scientific Committee in 2007 (SC-CAMLR-XXVI, paragraph 6.2).

12.2 Ad hoc WG-IMAF also noted the deliberations of the workshop held before the ad hoc WG-IMAF meeting (WG-FSA-08/65), and agreed that the ad hoc WG-IMAF scope should be

amended. Consequently, ad hoc WG-IMAF agreed to modify its terms of reference to include the review and analysis of data on the level and significance of direct impacts of marine debris in the Convention Area. The Working Group considered that, in the next two to five years, ad hoc WG-IMAF could consider the development of risk assessment methodologies for direct impacts of marine debris on Convention Area seabirds and marine mammals (data sources on gear loss, beach surveys etc.).

12.3 With respect to marine debris, ad hoc WG-IMAF considered WG-FSA-08/9, 08/24, 08/25, 08/26 and 08/27. The Working Group agreed that it would be beneficial to clarify the definition of 'debris associated with seabird colonies' as proposed in WG-FSA-08/9 to distinguish between debris brought to colonies by seabirds compared to those debris washed up at colony sites. The Working Group also agreed to simplify the categories used to record debris at seabird colonies to material found 'in/on seabirds' and those items that have been 'regurgitated' and are found in or near the nest.

12.4 With respect to the reporting of entanglement of marine mammals, the Working Group agreed to adopt the definitions of age and sex of Antarctic fur seals as follows: adult males are defined as large animals capable of holding territory (≈7+ years old), sub-adult males are smaller males that were easily distinguished from females, adult females can be recognised by the absence of a thickened neck and the presence of smaller canine teeth (compared to sub-adult males), juveniles are all small, post-weaning seals where the sexes are indistinguishable by simple observation. The category of pup would remain as it currently stands.

12.5 When reviewing WG-FSA-08/25, the Working Group considered that while seabird chicks may be able to digest hooks wholly or in part, the digestion of metal could have a harmful impact and that the effects of metal digestion on chicks were unknown.

12.6 In considering WG-FSA-08/24 to 08/27, all reporting on the UK debris monitoring scheme, the Working Group requested that for future meetings the UK consolidate these into one paper.

12.7 The Working Group considered it informative to link the type and occurrence of debris with particular fishing practices and data on lost gear. This linking of debris with fisheries of origin would highlight the need for strengthened debris management measures in those fisheries. Mr Moir Clark noted that fishers in Subarea 48.3 were very concerned about the prevalence of debris, and are interested in linking fishing operations to debris recorded when possible.

12.8 To better understand the origin of marine debris and consider current data collection processes, the Working Group requested that the Secretariat prepare, intersessionally, a compilation of recent observer information on gear recorded as lost by vessels (e.g. two years or as appropriate, depending on the volume and nature of information, from cruise reports and observer e-logbooks). The Working Group requested that this compilation include an indication of the type and detail of information reported.

12.9 To facilitate the identification of fishing-related debris, the Working Group considered it valuable to develop a digital library of images of fishing gear. This library could be developed with photographs of fishing gear taken by observers on vessels. The Working Group requested that ad hoc TASO develop a protocol for observers taking and cataloguing

such photographs. The Working Group also requested that, when undertaking data collection on debris, photos of fishing-related debris be taken (with a size scale) to facilitate the identification of the origin of debris. The Working Group requested that the Secretariat archive these photos.

12.10 In noting that not all debris recorded was from fishing vessels, the Working Group agreed that it may be appropriate for CCAMLR to communicate with appropriate international bodies to more broadly address debris discharge in, and adjacent to, the Convention Area. The Working Group recommended that CCAMLR include reference, to and advice on, management of marine debris when communicating with RFMOs and other appropriate international bodies.

12.11 Coincident with the incidence of wildlife entanglements and debris at colonies, and the findings of WG-FSA-08/26 and 08/27, the Working Group emphasised the need for ongoing diligence on vessels, both observed and unobserved, in complying with conservation measures including those relating to marine debris.

12.12 The Working Group agreed that, following the success of the hook discard poster, a similar poster should be produced to increase the profile of debris management on vessels, and highlight the danger to wildlife of debris disposal in the Convention Area. This poster should comprise photographs of entangled wildlife such as seals, and debris from beaches. It should be produced in A3 size, at a minimum laminated, and in all CCAMLR languages, as well as Indonesian, Korean and Japanese. The cost of printing laminated posters in A3 size would be ≈A$2 270 (A$4.50 each) for 500 posters, and ≈A$3 930 (A$3.93 each) for 1 000 posters. The Working Group recommended that it would be preferable to print posters with Perspex backing (like the hook discard poster) and noted this would cost ≈A$8.50/poster, plus A$250 set-up fee. The Working Group also noted there would be an additional higher cost in mailing these heavy Perspex-backed posters.

12.13 In considering the incidence of entanglement of seals in plastic packaging bands, the Working Group noted that it is very easy to cut bands and then to knot them for convenience of disposal, i.e. recreating a loop. In order to avoid this, the Working Group suggested that Conservation Measure 26-01 be amended to cut all plastic packaging bands into 10 cm sections prior to incineration.

12.14 The Secretariat reiterated its previous request to Members to submit any data relating to marine debris, noting that data held by the Secretariat is currently limited to Area 48 and Subarea 58.7 (Marion Island). The Working Group agreed that the collection and submission of debris data to the Secretariat was the priority for ad hoc WG-IMAF work on marine debris.

Advice to the Scientific Committee

12.15 Ad hoc WG-IMAF recommended that the Scientific Committee:

(i) note that ad hoc WG-IMAF's revised terms of reference include consideration of marine debris in the Convention Area, specifically the direct impacts of marine debris on seabirds and marine mammals (paragraph 12.2);

(ii) note the general increase in the incidence of marine debris (paragraph 12.11);

(iii) agree to implement the revised definitions of debris associated with seabird colonies (paragraph 12.3), and the age and sex of Antarctic fur seals for reporting of marine debris (paragraph 12.4);

(iv) support the development of a photo library of debris found, and inclusion of photos of fishing gear taken by observers, in this library (paragraph 12.9);

(v) support the inclusion of advice on marine debris when CCAMLR makes contact with other international organisations, including RFMOs (paragraph 12.10);

(vi) endorse the production of an A3 Perspex-backed poster to emphasise the importance of managing debris in accordance with conservation measures, and the consequences to marine life of not managing debris effectively (paragraph 12.12);

(vii) advise the Commission to amend Conservation Measure 26-01 to ensure plastic packaging bands are cut into small (~10 cm) sections prior to incineration (paragraph 12.13);

(viii) urge Members to provide data on marine debris to the Secretariat (paragraph 12.14).

INTERACTION WITH OTHER SCIENTIFIC COMMITTEE WORKING GROUPS

13.1 The Working Group noted that WG-EMM and WG-FSA have considered using a risk management framework for avoiding significant adverse impacts of bottom fishing gear on VMEs similar to that used by ad hoc WG-IMAF to minimise the risk of fishery mortalities on seabirds (e.g. Annex 4, paragraph 3.22). Ad hoc WG-IMAF acknowledged the utility of using such a risk-based approach for the krill fishery and thus considering various management actions with the knowledge of associated risks and contingencies.

13.2 The Working Group concurred with WG-EMM's noted priorities for data collection from the krill fishery (Annex 4, paragraph 4.66) with respect to incidental mortality of seabirds and marine mammals and information on trawl warp strikes. These priorities are consistent with ad hoc WG-IMAF's previous advice as endorsed by the Scientific Committee (SC-CAMLR-XXV, paragraph 5.32) with respect to krill trawl fisheries.

13.3 The Working Group addressed a request from ad hoc TASO (SC-CAMLR-XXVII/BG/6, paragraph 3.7) to provide clarity on the application the CCAMLR trawl warp-strike protocol on krill vessels, including those operating a continuous fishing method (paragraphs 7.12 to 7.16).

13.4 The Working Group welcomed the formation of ad hoc TASO and valued the participation of a TASO Co-convener and several observer technical coordinators at this year's ad hoc WG-IMAF meeting. Ad hoc WG-IMAF looked forward to continued collaborations with this group.

13.5 The Working Group received input from WG-SAM with respect to a generalised age- and/or stage-structured seabird population dynamics model (paragraph 8.3) and anticipated interacting with WG-SAM with respect to a population model analysis of impacts on white-chinned and grey petrels (paragraph 8.7).

13.6 As part of efforts to consider the streamlining of the Scientific Committee, ad hoc WG-IMAF held a one-day workshop in Hobart, Australia, on 10 October 2008 (paragraphs 15.1 and 15.5) to address its future work. Participants from other Scientific Committee working groups (WG-FSA, WG-SAM and ad hoc TASO) were in attendance and provided helpful insights as to ad hoc WG-IMAF's coordinated efforts to advise the Scientific Committee.

FISHERY REPORTS

14.1 The Working Group reviewed the Fishery Reports developed by WG-FSA (Annex 5, Agenda Items 5.1 and 5.2) and the information relating to the incidental mortality of seabirds and marine mammals contained within the reports.

14.2 The Working Group updated the Fishery Reports based on the information contained in SC-CAMLR-XXVI, Annex 6, and the information contained in WG-FSA-08/5 Rev. 1, 08/6 Rev. 1, 08/7 Rev. 2 and 08/8.

Advice to the Scientific Committee

14.3 The Working Group recommended that the process of updating Fishery Reports continue and noted that this process provided constructive interaction with WG-FSA and contributed to the streamlining of the work of the Scientific Committee's working groups.

STREAMLINING THE WORK OF THE SCIENTIFIC COMMITTEE

15.1 The Working Group discussed the report of the Co-conveners of the one-day workshop to review the future of ad hoc WG-IMAF (WG-FSA-08/65) held in Hobart, Australia, on 10 October 2008. The Working Group noted that the workshop had addressed its terms of reference (SC-CAMLR-XXVI, paragraph 5.59) as endorsed by the Commission (CCAMLR-XXVI, paragraph 4.92) and had discussed a range of issues relevant to the future work of ad hoc WG-IMAF.

15.2 The Working Group welcomed the use of the ad hoc WG-IMAF 'risk assessment approach' by other working groups to tackle other incidental mortality issues facing CCAMLR. However, it noted that, should the terms of reference of ad hoc WG-IMAF be expanded to include such work, this would require additional expertise, not currently available within ad hoc WG-IMAF.

15.3 The Working Group recommended that within the broader conservation objectives of CCAMLR (CAMLR Convention, Article II), ad hoc WG-IMAF should continue to focus annually on core functions of:

(i) annual review and monitoring of incidental mortality of seabirds and marine mammals in Convention Area fisheries;

(ii) annual review and monitoring of information relating to the performance of implementation of specific conservation measures;

(iii) research into and experience with fishing gears and mitigation methods;

(iv) evaluate and advise on changing needs for observer reports and data collection;

(v) conduct assessments of risk to seabirds in CCAMLR areas, subareas and divisions;

(vi) coordinate and collaborate with ACAP;

(vii) review the level and significance of direct impacts of marine debris in the Convention Area.

15.4 The Working Group discussed the ad hoc WG-IMAF meeting frequency, duration and cycle needed to address these core functions and new requirements to consider marine debris, and concluded that there is no need to change the current meeting schedule, however, this should be re-evaluated on a continuing basis.

15.5 The Working Group highlighted the importance of interactions with the other Scientific Committee working groups (WG-FSA, WG-SAM, ad hoc TASO and WG-EMM), and recommended that ad hoc WG-IMAF remain flexible with respect to meeting times in consultation with the Secretariat on matters relating to the resourcing of meetings.

15.6 The Working Group noted that it should include an item on its annual agenda to address and review its terms of reference.

15.7 The Working Group recommended the following revised terms of reference for ad hoc WG-IMAF:

The purpose of WG-IMAF is to contribute to the conservation of Convention Area seabirds and marine mammals through the provision of advice to the CCAMLR Scientific Committee. To achieve this, WG-IMAF will address the following terms of reference:

(i) review and analyse data on the level and significance of direct impacts of interactions and incidental mortality associated with fishing;

(ii) review the efficacy of mitigating measures currently in use in the Convention Area, and consider improvements to them, taking into account experience both inside and outside the Convention Area;

(iii) review and analyse data on the level and significance of direct impacts of marine debris in the Convention Area;

(iv) collaborate and coordinate with ACAP on achieving a favourable conservation status for Convention Area seabirds;

(v) prepare a summary of the above for the consideration of the Scientific Committee;

(vi) provide the Scientific Committee with advice for:

(a) improvements to the reporting requirements currently in use in the Convention Area;

(b) improvements to the measures in use to avoid incidental mortality and interactions associated with fisheries within the Convention Area;

(c) cooperation with ACAP;

(d) approaches to improve the conservation status of Convention Area seabirds and marine mammals directly impacted by fishing outside the Convention Area.

15.8 The Working Group recommended that, to reflect the duration of its existence, its current annual meeting schedule and the ongoing nature of the work of ad hoc WG-IMAF, it should simply be referred to as WG-IMAF.

15.9 The Working Group recommended that to reflect its status as a distinct Scientific Committee working group, documents submitted for the meetings of ad hoc WG-IMAF should be labelled as WG-IMAF papers instead of WG-FSA papers as is current practice.

15.10 The Working Group continued to see the importance and necessity of interacting with the other Scientific Committee working groups. Regardless of ad hoc WG-IMAF's distinct status, the Working Group recommended continuing to hold joint sessions with WG-FSA, and with other working groups as needed, to discuss issues of joint concern.

Advice to the Scientific Committee

15.11 The Working Group seeks the Scientific Committee's endorsement of the revised terms of reference for ad hoc WG-IMAF (paragraph 15.7), the core tasks to be addressed annually (paragraph 15.3), the recommendation to change the name of the Working Group (paragraph 15.8), the change to the naming of WG-IMAF papers (paragraph 15.9) and joint sessions of WG-IMAF with other Scientific Committee working groups as needed (paragraph 15.10).

OTHER BUSINESS

16.1 Mr Smith was retiring as Co-convener at the end of the present meeting, Ms Rivera will continue as Co-convener. Mr Smith was thanked for all his work and significant contributions to ad hoc WG-IMAF over the last four years as Co-convener. The Working Group recommended that Mr N. Walker (New Zealand) should be appointed as a Co-convener of WG-IMAF to work with Ms Rivera.

Advice to the Scientific Committee

16.2 Mr Walker should be appointed as a Co-convener of WG-IMAF, following the retirement of Mr Smith.

ADOPTION OF THE REPORT AND CLOSE OF THE MEETING

17.1 The report of the 2008 meeting of ad hoc WG-IMAF was adopted.

17.2 The Working Group paused in memory of Dr Edith Fanta who passed away in May 2008. Dr Fanta will be remembered for her thoughtful contributions to the work of ad hoc WG-IMAF over many years and her gentle and dedicated leadership of the Scientific Committee which she chaired from 2005 until her death.

17.3 In closing the meeting, Ms Rivera and Mr Smith thanked participants for a successful and constructive meeting and thanked the Secretariat for their dedicated professional support.

17.4 Mr Hay, on behalf of the Working Group, thanked Ms Rivera and Mr Smith for their skill and dedication in guiding ad hoc WG-IMAF through its work this year. The Co-conveners were also commended for their efforts in ensuring the successful workshop to review the future of ad hoc WG-IMAF.

17.5 The meeting was closed.

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Table 1: Intersessional work plan for ad hoc WG-IMAF for 2008/09.

	Task/Topic	Paragraphs of WG-IMAF report	Priority	Members	Secretariat	Delivery	Specific action
1.	**Planning and coordination of work**						
1.1	Develop checklist similar to that used for longline notifications for new and exploratory fisheries, specifically for notifications for other new and exploratory fisheries.	10.15	Medium		Secretariat		
2.	**Integrate work of WG-IMAF and ACAP**						
2.1	Maintain dialogue with ACAP on issues of common interest and plan for migration of tasks as appropriate.		High	Co-conveners	Secretariat		ACAP
3.	**Research and development activities**						
3.1	Request BirdLife International to provide brief annual summary data on distribution of Southern Ocean seabirds from its tracking database. Plan with BirdLife for more detailed three-year review of tracking database to be provided in 2010/11.	8.2	for IMAF-09	Co-conveners	Science Officer	Jul 09	Request information from BirdLife International in July 09 for paper presented to WG-IMAF-09. Circulate any new information to WG-IMAF. Co-conveners to liaise with BirdLife International with respect to three-year review.
3.2	Develop a methodology paper on steps required to conduct a risk assessment for marine mammals.	9.5	for IMAF-09	Australia, New Zealand	Science Officer (coordinator)		R. Gales, B. Baker, N. Walker
3.3	Produce and distribute a marine debris outreach poster.	2.54, 12.12	2009		Secretariat	Dec 08/ Jan 09	Secretariat distribute poster via technical coordinators to all longline vessels operating in the Convention Area.
3.4	Report on implementation of action plan. Submit progress report of action plan. Include figures to show the overlap between the weekly fishing effort by sector and seabird incidental mortality rates. Note status of implementation with recommendations from Table 12.	3.11, 3.12, Table 12	High	France		Report to IMAF-09	

(continued)

Table 1 (continued)

	Task/Topic	Paragraphs of WG-IMAF report	Priority	Members	Secretariat	Delivery	Specific action
3.5	Submit English translation of evaluation of the impact of fisheries on the populations of petrels in the French EEZs (i.e. SC-CAMLR-XXVII/BG/8) to WG-SAM.	3.10	High	France		WG-SAM July 09 meeting	
4.	**Information from outside the Convention Area**						
4.1	Develop standard format for reporting data from outside the Convention Area about Convention Area marine mammal and seabird incidental mortality.	4.3	Medium	Co-conveners	Science Officer		ACAP
5.	**Cooperation with international organisations**						
5.1	Correspond with Executive Secretaries of RFMOs listed in Appendix 1 of Resolution 22/XXV reiterating the Commission's interest in reducing the incidental mortality of Convention Area seabirds outside the Convention Area. When communicating with RFMOs and other appropriate international bodies, address marine debris discharge in, and adjacent to, the Convention Area.	11.20(v)(a) and 12.1	High		Executive Secretary	Nov 08 Sep 09	Brief CCAMLR observers on desired feedback on IMAF matters (seabird by-catch levels and mitigating measures).
5.2	Seek inclusion of agenda item for the RFB meeting in March 2009 to reflect the Commission's interest in RFMOs addressing the incidental mortality of seabirds.	11.20(v)(b)	High		Executive Secretary		

(continued)

Table 1 (continued)

	Task/Topic	Paragraphs of WG-IMAF report	Priority	Members	Secretariat	Delivery	Specific action
6.	**Data acquisition and analysis**						
6.1	Request information on gillnet gear operations, associated seabird incidental mortalities etc. to inform a process to be able to estimate seabird mortalities associated with IUU gillnet fishing in the Convention Area.	5.3, 11.13, 11.20(iii)	High	Members, IOTC	Secretariat	Nov 08 Sep 09	
6.2	Compile observer information (including cruise reports and C2 data) on gear reported as lost by vessels during the past three years.	12.8	High		Secretariat		
6.3	Detailed descriptive review of continuous trawl fishing method, including offal discharge and management issues.	6.9	High	Members (Norway)			
6.4	Descriptive review of fishing methods in the Convention Area, such as Spanish system and trotline methods of longlining, use of pots and trawl methods for mackerel icefish. Review would be similar to that done for autoline method in 2008 (WG-FSA-08/60) and would be submitted as a working group paper.	6.2	Medium	Members			

Table 2: Observed incidental mortality of seabirds in the longline fisheries for *Dissostichus* spp. in Area 51, Subareas 48.3, 48.4, 58.6, 58.7, 88.1, 88.2 and Divisions 58.4.1, 58.4.2, 58.4.3 and 58.5.2 during the 2007/08 season, including related mitigation information. A – auto, Sp – Spanish, T – trotline, N – night-time setting, D – daytime setting (including nautical dawn and dusk), O – opposite side to hauling, S – same side as hauling.

Vessel	Dates of fishing	Method	Sets deployed				No. of hooks (thousands)			No. of birds observed caught[1]						Observed seabird mortality (includes injured birds)[1] (birds/thousand hooks)			Streamer line in use %		Offal discharge during	
										Dead		Injured		Uninjured							Set (%)	Haul (%)
			N	D	Total	%N	Obs.	Set	% observed	N	D	N	D	N	D	N	D	Total	N	D		
Subarea 48.3																						
Antarctic Bay	28/5–22/8/08	Sp	247	0	247	100	302.6	1215.8	24	0	0	0	0	2	0	0	0	0	99.6		(1)	O (99)
Argos Froyanes	14/5–28/8/08	A	281	0	281	100	556.1	1790.4	31	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
Argos Georgia	3/5–31/8/08	A	300	0	300	100	478.1	1539.0	31	0	0	0	0	1	0	0	0	0	100		(0)	O (0)
Argos Helena	1/5–31/8/08	A	360	0	360	100	395.6	1759.0	22	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
Tronio	1/5–29/8/08	Sp	200	0	200	100	393.9	1702.0	23	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
Jacqueline	4/5–23/8/08	Sp	281	0	281	100	385.2	1548.5	24	0	0	0	0	0	0	0	0	0	100		(0)	O (100)
Koryo Maru No. 11	2/5–6/9/08	Sp	215	0	215	100	545.9	2097.6	26	0	0	0	0	0	0	0	0	0	100		(0)	O (95)
Punta Ballena	15/5–7/9/08	A	193	0	193	100	256.3	1184.7	21	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
San Aspiring	1/5–5/6/08	A	77	0	77	100	318.7	725.0	43	0	0	0	0	0	0	0	0	0	100		(0)	O (33)
San Aspiring	18/6–12/8/08	A	133	0	133	100	547.1	1200.0	45	0	0	0	0	0	0	0	0	0	100		(0)	O (31)
Viking Bay	1/5–28/8/08	Sp	263	0	263	100	397.4	1538.4	25	0	0	0	0	17	0	0	0	0	100		(0)	O (0)
Total						100	4576.9	16300.4	28							0	0	0				
Subarea 48.4																						
Argos Froyanes	21/4–12/5/08	A	63	0	63	100	111.8	313.2	35	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
San Aspiring	3/4–23/4/08	A	45	0	45	100	142.5	342.0	41	0	0	0	0	0	0	0	0	0	100		(0)	O (27)
Total						100	254.3	655.2	39							0	0	0				
Area 51																						
Banzare	16/4–9/6/08	T	32	42	74	43	410.4[2]	410.4	100	0	0	0	0	0	0	0	0	0	100	100	(0)	O (100)
Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b																						
Tronio[3]	2/12–16/2/08	Sp	18	95	113	16	581.1	922.3	63	0	0	0	0	0	0	0	0	0	100	100	(0)	O (0)
Antillas Reefer	16/12–21/2/08	Sp	28	69	97	29	136.5	765.7	17	0	0	0	0	0	0	0	0	0	100	100	(0)	O (0)
Banzare	6/1–27/2/08	T	11	39	50	22	304.9[2]	304.9	100	0	0	0	0	0	0	0	0	0	100	100	(0)	O (0)
Paloma V	21/12–17/2/08	Sp	0	69	69	0	261.8	814.5	32	0	0	0	0	0	0	0	0	0		100	(0)	O (100)
Janas	18/5–26/5/08	A	15	0	15	100	40.6	75.0	44	0	0	0	0	0	0	0	0	0	100		(0)	O (0)
Insung No. 1	20/12–12/3/08	Sp	0	138	138	0	888.1	980.0	90	0	0	0	0	0	0	0	0	0		100	(0)	O (0)
Shinsei Maru No. 3	30/12–19/2/08	T	53	81	134	40	339.8	673.4	50	0	0	0	0	0	0	0	0	0	100	100	(0)	O (0)
Insung No. 2[3]	4/12–25/2/08	Sp	6	125	131	5	671.4	918.9	73	0	0	0	0	0	0	0	0	0	100	100	(0)	O (0)
Total						18	3224.2	5454.7	59							0	0	0				
Division 58.5.2																						
Austral Leader II	25/5–28/6/08	A	36	30	66	55	132.6	336.6	39	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Janas	29/5–2/7/08	A	45	69	114	40	347.9	743.0	44	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Total						45	480.5	1079.6	45							0	0	0				
Subareas 58.6, 58.7, Area 51																						
Koryo Maru No. 11	9/2–30/3/08	Sp	76	0	76	100	269.2	667.7	40	0	0	0	0	2	0	0	0	0	100		(0)	O (100)
Total						100	269.2	667.7	40							0	0	0				

(continued)

Table 2 (continued):

Vessel	Dates of fishing	Method	Sets deployed				No. of hooks (thousands)			No. of birds observed caught[1]						Observed seabird mortality (includes injured birds)[1] (birds/thousand hooks)			Streamer line in use %		Offal discharge during	
			N	D	Total	%N	Obs.	Set	% Observed	Dead		Injured		Uninjured		N	D	Total	N	D	Set (%)	Haul (%)
										N	D	N	D	N	D							
Subarea 88.1, 88.2																						
Avro Chieftain	24/12–14/2/08	A	0	108	108	0	393.8	876.7	45	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Janas	1/12–20/2/08	A	0	89	89	0	261.7	556.0	47	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Jung Woo No. 2	5/12–17/2/08	Sp	0	81	81	0	620.0[2]	652.9	94	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Ross Mar	1/12–1/2/08	A	0	88	88	0	208.2	475.2	43	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Ross Star	14/1–1/3/08	A	5	52	57	9	186.2	350.7	53	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
San Aotea II	11/1–20/2/08	A	0	71	71	0	203.2	472.9	42	0	0	0	0	0	0	0	0	0		100	(0)	(0)
San Aspiring	2/12–16/2/08	A	0	76	76	0	266.6	491.5	54	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Antartic III	8/12–8/12/08	A	0	1	1	0	1.0	3.0	33	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Argos Georgia	1/12–15/2/08	A	12	71	83	15	247.5	486.0	50	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Argos Helena	1/12–11/2/08	A	0	135	135	0	377.9	697.5	54	0	0	0	0	0	0	0	0	0		100	(0)	(0)
Argos Froyanes	1/12–28/2/08	A	81	76	157	52	448.1	983.4	45	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Hong Jin No. 707	3/12–19/2/08	Sp	10	71	81	12	592.6[2]	647.5	91	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Yantar	10/1–10/3/08	T	4	73	77	5	416.8	562.6	74	0	0	0	0	0	0	0	0	0	100	100	(0)	(0)
Total						11	4223.6	7255.9	58							0	0	0				

[1] Bird 'caught' as defined by the Commission at CCAMLR-XXIII, paragraphs 10.30 and 10.31.

[2] Information obtained from cruise report.

[3] These vessels also conducted a small amount of fishing in Subarea 88.1 during this cruise.

Table 3: Total extrapolated incidental mortality of seabirds and observed mortality rates (birds/thousand hooks) in longline fisheries in Subareas 48.3, 48.4, 48.6, 58.6, 58.7, 88.1 and 88.2, Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b, 58.5.1 and 58.5.2 from 1997 to 2008 (- indicates no fishing occurred).

Subarea	Year											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Subarea 48.3												
Extrapolated mortality	5 755	640	210*	21	30	27	8	27	13	0	0	0
Observed mortality rate	0.23	0.032	0.013*	0.002	0.002	0.0015	0.0003	0.0015	0.0011	0	0	0
Subarea 48.4												
Extrapolated mortality	-	-	-	-	-	-	-	-	0	0	0	0
Observed mortality rate	-	-	-	-	-	-	-	-	0	0	0	0
Subarea 48.6												
Extrapolated mortality	-	-	-	-	-	-	-	0	0	0	0	-
Observed mortality rate	-	-	-	-	-	-	-	0	0	0	0	-
Subareas 58.6, 58.7												
Extrapolated mortality	834	528	156	516	199	0	7	39	76	0	0	0
Observed mortality rate	0.52	0.194	0.034	0.046	0.018	0	0.003	0.025	0.149	0	0	0
Subarea 58.6 French EEZ												
Extrapolated mortality	no	no	no	no	-	1243^{+}	720^{+}	343^{+}	242	235	314	131
Observed mortality rate	data	data	data	data	-	0.1672	0.1092	0.0875	0.0490	0.0362	0.065	0.0305
Subareas 88.1, 88.2												
Extrapolated mortality	-	0	0	0	0	0	0	1	0	0	0	0
Observed mortality rate	-	0	0	0	0	0	0	0.0001	0	0	0	0
Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b												
Extrapolated mortality	-	-	-	-	-	-	-	0	8	2	0	0
Observed mortality rate	-	-	-	-	-	-	-	0	<0.001	0.0002	0	0
Division 58.5.1 French EEZ												
Extrapolated mortality	no	no	no	no	1917^{+}	10814^{+}	13926^{+}	3666^{+}	4387	2352	1943	1224
Observed mortality rate	data	data	data	data	0.0920	0.9359	0.5180	0.2054	0.1640	0.0920	0.0798	0.0585
Division 58.5.2												
Extrapolated mortality	-	-	-	-	-	-	0	0	0	0	0	0
Observed mortality rate	-	-	-	-	-	-	0	0	0	0	0	0
Total seabird mortality	6589	1168	366	537	229	27	15	67	97	2	0	1355$^{\Delta}$

* Excluding *Argos Helena* line-weighting experiment cruise.

\+ The number of hooks has not been collected and the values given are from the total number of hooks set.

$^{\Delta}$ Beginning in 2008, total seabird mortality number includes birds reported from Subarea 58.6 and Division 58.5.1 (SC-CAMLR-XXVI, paragraph 5.6(iii)).

Table 4: Observed incidental mortality of seabirds in the longline fisheries for *Dissostichus* spp. in Subarea 58.6 and Division 58.5.1 during the 2007/08 season (September–August). N – night-time setting, D – daytime setting (including nautical dawn and dusk).

Vessel	Dates of fishing	No. of birds observed caught						Streamer line in use % setting		Attachment height above water (m)	Spacing of streamers per line (m)	No. of streamers per line	No. of lines	Streamer lines			Streamers	
		Dead		Injured		Uninjured								Total length (m)	Estimated length out of water (m)	Diameter (mm)	Minimal length (m)	Maximal length (m)
		N	D	N	D	N	D	N	D									
Subarea 58.6																		
Ship 1	6/4–22/5/08	0	0	0	0	1	0	100	0	7	3.6	16	7	200	50	12	3.5	5.5
Ship 2	12/11–24/11/07	0	0	1	0	5	0	100	0	7	1.2	60	6	190	75	14	3.5	7
Ship 2	8/2–24/2/08	0	0	0	0	0	0	100	0	7	1.4	?	6	300	70	11	2	3
Ship 2	1/5–20/5/08	0	0	0	0	0	0	100	0	7	1.2	150	6	200	70	12	1	1.75
Ship 3	15/2–27/2/08	15	0	0	0	0	0	100	0	7	2.5	17	2	200	150	10	2	6
Ship 3	7/5–31/5/08	0	0	0	0	0	0	100	0	9	2.6	24	2	150	100	8	1.5	7
Ship 5	5/2–20/2/08	1	0	0	0	1	0	100	0	5.5	4	12	3	260	40	13	1.5	4
Ship 5	29/3–8/4/08	6	0	0	0	1	0	100	0	4	3.5	17	3	200	80	13	2.5	3.5
Ship 6	22/2–17/3/08	7	0	0	0	2	0	100	0	7	1.2	130	10	165	60	12	0.8	1.5
Ship 6	7/7–15/7/08	0	0	0	0	0	0	100	0	10	2.5	77	3	220	150	5	0.2	8
Ship 7	31/10–8/11/07	0	0	0	0	0	0	100	0	8	3	8	6	150	100	12	4	8
Ship 7	3/2–11/2/08	0	0	0	0	0	0	100	0	8	24	15	6	220	70	12	6	12
Ship 7	7/5–26/5/08	0	0	0	0	1	0	100	0	7	3.5	15	6	150	60	8	3	8
Ship 11	25/10–01/11/07	0	0	0	0	0	0	100	0	5	3.5	15	3	100	50	6	1	4
Ship 11	16/02, 15/04, 11/03, 17/05/08	3	0	1	0	0	0	100	0	7	4	13	4	100	55	10	0.5	6.5
		32		2		11												
Division 58.5.1																		
Ship 1	7/9–13/11/07	23	0	2	0	14	0	100	0	7	3.6	16	7	200	50	12	3.5	5.5
Ship 1	13/12–13/2/08	61	0	0	0	2	0	100	0	8	3.6	15	7	160	50	12	3.5	7
Ship 1	1/5–13/6/08	12	0	0	0	1	0	100	0	7	3.6	16	7	200	50	12	3.5	5.5
Ship 2	18/9–9/11/07	3	0	0	0	5	0	100	0	6	1.4	178	6	250	50	12	1.7	3.5
Ship 2	17/12–4/2/08	4	0	0	0	0	0	100	0	7	1.4	?	6	300	70	11	2	3
Ship 2	16/3–27/4/08	17	0	0	0	1	0	100	0	7	1.2	150	6	200	70	12	1	1.75
Ship 3	8/9–20/10/07	5	0	0	0	3	0	100	0	12	2.5	16	2	220	25	10	2	6
Ship 3	8/12–12/2/08	31	0	0	0	1	0	100	0	7	2.5	17	2	200	150	10	2	6
Ship 3	4/4–1/5/08	17	0	0	0	0	0	100	0	9	2.6	24	2	150	100	8	1.5	7
Ship 5	5/9–11/11/07	10	0	0	0	19	0	100	0	7	5	12	3	250	40	13	1	6.5
Ship 5	20/12–1/2/08	13	0	0	0	2	0	100	0	5.5	4	12	3	260	40	13	1.5	4
Ship 5	27/4–9/6/08	2	0	0	0	0	0	100	0	4	3.5	17	3	200	80	13	2.5	3.5
Ship 6	3/9–1/12/07	0	0	0	0	18	0	100	0	7.5	1.2	125	10	165	50	11.5	0.6	2.4

(continued)

Table 4 (continued)

Vessel	Dates of fishing	No. of birds observed caught						Streamer line in use % setting		Attachment height above water (m)	Spacing of streamers per line (m)	No. of streamers per line	No. of lines	Streamer lines			Streamers	
		Dead		Injured		Uninjured								Total length (m)	Estimated length out of water (m)	Diameter (mm)	Minimal length (m)	Maximal length (m)
		N	D	N	D	N	D	N	D									
Division 58.5.1 (continued)																		
Ship 6	15/1, 20/3, 14/2, 31/3/08	23	0	0	0	1	0	100	0	7	1.2	130	10	165	60	12	0.8	1.5
Ship 6	12/5–2/7/08	7	0	0	0	0	0	100	0	10	2.5	77	3	220	150	5	0.2	8
Ship 7	3/9–29/10/07	14	0	3	0	7	0	100	0	8	3	8	6	150	100	12	4	8
Ship 7	14/12–31/1/08	9	0	0	0	0	0	100	0	8	24	15	6	220	70	12	6	12
Ship 7	30/3–3/5/08	26	0	0	0	4	0	100	0	7	3.5	15	6	150	60	8	3	8
Ship 11	1/9–29/9/07	1	0	0	0	7	0	100	0	7	5	10	2	100	50	6	1	4
Ship 11	3/11–6/1/08	12	0	0	0	2	0	100	0	5	3.5	15	3	100	50	6	1	4
Ship 11	16/3–10/4/08	8	0	1	0	1	0	100	0	7	4	13	4	100	55	10	0.5	6.5
		298		6		88												

Table 5: Observed incidental mortality of seabirds in the longline fisheries for *Dissostichus* spp. in Subarea 58.6 and Division 58.5.1 during the 2007/08 season (September–August). A – autoliner; N – night-time setting; D – daytime setting (including nautical dawn and dusk); NC – not collected.

Vessel	Dates of fishing	Method	Sets deployed				No. of hooks (thousands)			Hooks baited (%)	No. of birds observed caught						Observed seabird mortality (includes injured birds) (birds/thousand hooks)			Streamer line in use %	
											Dead		Injured		Uninjured						
			N	D	Total	%N	Obs.	Set	% observed		N	D	N	D	N	D	N	D	Total	N	D
Subarea 58.6																					
Ship 1	6/4–22/5/08	A	110	0	110	100	158.66	662.65	23.94	NC	0	0	0	0	1	0	0.0000	0	0.0000	100	0
Ship 2	12/11–24/11/07	A	38	0	38	100	57.16	238.04	24.01	NC	0	0	1	0	5	0	0.0175	0	0.0175	100	0
Ship 2	8/2–24/2/08	A	49	0	49	100	49.45	197.80	25.00	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 2	1/5–20/5/08	A	39	0	39	100	62.60	250.54	24.99	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 3	15/2–27/2/08	A	29	0	29	100	70.25	266.85	26.33	NC	15	0	0	0	0	0	0.2135	0	0.2135	100	0
Ship 3	7/5–31/5/08	A	45	0	45	100	104.95	451.50	23.24	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 5	5/2–20/2/08	A	54	0	54	100	53.73	215.75	24.90	NC	1	0	0	0	1	0	0.0186	0	0.0186	100	0
Ship 5	29/3–8/4/08	A	25	0	25	100	37.30	142.37	26.20	NC	6	0	0	0	1	0	0.1609	0	0.1609	100	0
Ship 6	22/2–17/3/08	A	67	0	67	100	135.91	530.40	25.62	NC	7	0	0	0	2	0	0.0515	0	0.0515	100	0
Ship 6	7/7–15/7/08	A	23	0	23	100	36.20	180	20.11	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 7	31/10–8/11/07	A	31	0	31	100	39.11	164.60	23.76	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 7	3/2–11/2/08	A	33	0	33	100	33.20	132.75	25.01	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 7	7/5–26/5/08	A	46	0	46	100	68.80	284.85	24.15	NC	0	0	0	0	1	0	0.0000	0	0.0000	100	0
Ship 11	25/10–1/11/07	A	13	0	13	100	18.58	72.45	25.65	NC	0	0	0	0	0	0	0.0000	0	0.0000	100	0
Ship 11	16/2, 15/4, 11/3, 17/5/08	A	152	0	152	100	187.27	733.69	25.52	NC	3	0	1	0	0	0	0.0214	0	0.0214	100	0
			754			100	1113.17	4 524.24	24.60		32		2		11		0.0305		0.0305		
Division 58.5.1																					
Ship 1	7/9–13/11/07	A	173	0	173	100	389.95	1 592.50	24.49	NC	23	0	2	0	14	0	0.0641	0	0.0641	100	0
Ship 1	13/12–13/2/08	A	133	0	133	100	344.97	1 371.45	25.15	NC	61	0	0	0	2	0	0.1768	0	0.1768	100	0
Ship 1	1/05–13/6/08	A	29	0	29	100	76.13	304.75	24.98	NC	12	0	0	0	1	0	0.1576	0	0.1576	100	0
Ship 2	18/9–9/11/07	A	134	0	134	100	74.89	299.42	25.01	NC	3	0	0	0	5	0	0.0401	0	0.0401	100	0
Ship 2	17/12–4/2/08	A	146	0	146	100	287.49	1 135.99	25.31	NC	4	0	0	0	0	0	0.0139	0	0.0139	100	0
Ship 2	16/3–27/4/08	A	114	0	114	100	228.44	923.02	24.75	NC	17	0	0	0	1	0	0.0744	0	0.0744	100	0
Ship 3	8/9–20/10/07	A	72	0	72	100	251.54	1 022.18	24.61	NC	5	0	0	0	3	0	0.0199	0	0.0199	100	0
Ship 3	8/12–12/2/08	A	121	0	121	100	431.55	1 704.57	25.32	NC	31	0	0	0	1	0	0.0718	0	0.0718	100	0
Ship 3	4/4–1/5/08	A	45	0	45	100	143.59	604.28	23.76	NC	17	0	0	0	0	0	0.1184	0	0.1184	100	0
Ship 5	5/9–11/11/07	A	147	0	147	100	398.50	1 576.78	25.27	NC	10	0	0	0	19	0	0.0251	0	0.0251	100	0

(continued)

Table 5 (continued)

Vessel	Dates of fishing	Method	Sets deployed				No. of hooks (thousands)			Hooks baited (%)	No. of birds observed caught						Observed seabird mortality (includes injured birds) (birds/thousand hooks)			Streamer line in use %	
			N	D	Total	%N	Obs.	Set	% observed		Dead		Injured		Uninjured						
											N	D	N	D	N	D	N	D	Total	N	D
Division 58.5.1 (continued)																					
Ship 5	20/12–1/2/08	A	108	0	108	100	227.31	930.85	24.42	NC	13	0	0	0	2	0	0.0572	0	0.0572	100	0
Ship 5	27/4–9/6/08	A	96	0	96	100	205.55	816.85	25.16	NC	2	0	0	0	0	0	0.0097	0	0.0097	100	0
Ship 6	3/9–1/12/07	A	198	0	198	100	473.90	2 095.50	22.62	NC	0	0	0	0	18	0	0.0000	0	0.0000	100	0
Ship 6	15/1, 20/3, 14/2, 31/3/08	A	90	0	90	100	270.05	1 047.00	25.79	NC	23	0	0	0	1	0	0.0852	0	0.0852	100	0
Ship 6	12/5–2/7/08	A	80	0	80	100	211.75	852.38	24.84	NC	7	0	0	0	0	0	0.0331	0	0.0331	100	0
Ship 7	3/9–29/10/07	A	140	0	140	100	298.50	1 315.13	22.70	NC	14	0	3	0	7	0	0.0570	0	0.0570	100	0
Ship 7	14/12–31/01/08	A	112	0	112	100	291.60	1 165.13	25.03	NC	9	0	0	0	0	0	0.0309	0	0.0309	100	0
Ship 7	30/3–3/5/08	A	73	0	73	100	161.00	651.50	24.71	NC	26	0	0	0	4	0	0.1615	0	0.1615	100	0
Ship 11	1/9–29/9/07	A	66	0	66	100	100.92	403.47	25.01	NC	1	0	0	0	7	0	0.0099	0	0.0099	100	0
Ship 11	3/11–6/1/08	A	185	0	185	100	238.27	953.27	24.99	NC	12	0	0	0	2	0	0.0504	0	0.0504	100	0
Ship 11	16/3–10/4/08	A	89	0	89	100	94.05	368.79	25.50	NC	8	0	1	0	1	0	0.0957	0	0.0957	100	0
			2 351			100	5 199.94	21 134.79	24.60		298		6		88		0.0585		0.0585		

Table 6: Seabird mortality totals and rates (BPT: birds/trawl) and species composition of by-catch, recorded by observers in the CAMLR Convention Area trawl fisheries over the last six seasons. DIC – grey-headed albatross; DIM – black-browed albatross; PRO – white-chinned petrel; MAH – northern giant petrel; KPY – king penguin; PTZ – unknown petrel; DAC – Cape petrel; MAI – southern giant petrel.

Season	Area	Target species	Trips observed	Trawls			BPT	Dead								Total dead	Alive
				Set	Observed	(%)		DIC	DIM	PRO	MAH	KPY	PTZ	DAC	MAI		
2002/03	48.3	*E. superba*	6	1928	1073	56										0	0
	48.3	*C. gunnari*	3	184	182	99	0.20	1	7	28						36	15
	58.5.2	*D. eleginoides* *C. gunnari*	8	1311	1309	100	<0.11		2	2				2		6	11
2003/04	48	*E. superba*	1	334	258	77	<0.10									0	0
	48.3	*E. superba*	6	1145	829	72	<0.10									0	0
	48.3	*C. gunnari*	6	247	238	96	0.37	1	26	59					1	87	132
	58.5.2	*D. eleginoides* *C. gunnari*	5	1218	1215	100	<0.10									0	13
2004/05	48.2	*E. superba*	2	391	285	73	<0.10							1		1	0
	48.3	*C. gunnari*	7	337	277	82	<0.14		9	1	1					11	14
	48.3	*E. superba*	5	1451	842	58	<0.10									0	0
	58.5.2	*D. eleginoides* *C. gunnari*	6	1303	1301	100	<0.11		5	3						8	0
2005/06	48.1	*E. superba*	2	1127	839	74	0.00									0	0
	48.3	*C. gunnari*	5	585	457	78	0.07	1	11	20			1			33	89
	48.3	*E. superba*	2	395	181	46	0.00									0	0
	58.5.2	*D. eleginoides* *C. gunnari*	3	1086	1086	100	0.00									0	0
2006/07	48.1/2	*E. superba*	2	656	418	64	0.00									0	2
	48.3	*C. gunnari*	4	102	91	89	0.07	1	2	3						6	3
	48.3	*E. superba*	4	580	194	33	0.00									0	0
	58.5.2	*D. eleginoides* *C. gunnari*	3	1005	936	93	<0.01							2		2	0
2007/08	48.1/2	*E. superba*	4	2877	233	8[1]	0.00									0	0
	48.3	*C. gunnari*	6	232	206	89	0.024			3		2				5	5
	48.3	*E. superba*	4	1058	81	8[1]	0.00									0	0
	58.5.2	*D. eleginoides* *C. gunnari*	3	723	700	97	0.00									0	1

[1] These low haul numbers are a result of continuous trawls, refer to paragraph 2.21.

Table 7: Seabird mortality totals and rates (BPT: birds/trawl) and species composition, recorded by observers in the CAMLR Convention Area trawl fishery during the 2007/08 season. KPY – king penguin; PRO – white-chinned petrel; DAC – Cape petrel.

Subarea/ division	Vessel (target species)	Cruise dates	Trawls		BPT	Dead			Total dead	Alive (combined)
			Set	Observed		KPY	PRO	DAC		
48.1, 48.2	*Saga Sea* (KRI)[1]	4/12–20/1/08	774	8[2]	0.00				0	0
	Saga Sea (KRI)[1]	31/1–30/3/08	884	15[2]	0.00				0	0
	Konstruktor Koshkin (KRI)	13/3–28/4/08	565	185	0.00				0	0
	Saga Sea (KRI)[1]	7/4–2/7/08	1219	25[2]	0.00				0	0
	Total		2877	233	0.00				0	0
48.3	*Betanzos* (ANI)	16/2–1/3/08	31	31	0.10		3		3	3
	Robin M Lee (ANI)	20/1–25/1/08	5	5	0.00				0	0
	Robin M Lee (ANI)	23/4–28/5/08	76	72	0.01	2			2	2
	Sil (ANI)	20/1–26/1/08	6	6	0.00				0	0
	Sil (ANI)	30/4–24/5/08	55	48	0.00				0	0
	Insung Ho (ANI)	18/1–2/2/08	59	44	0.00				0	0
	Total		232	206	0.02	2	3		5	5
48.3	*Maksim Starostin* (KRI)[1]	6/8–31/8/08	56	11[2]	0.00				0	0
	Saga Sea (KRI)[1]	6/7–3/9/08	733	10[2]	0.00				0	0
	Juvel (KRI)	27/8–12/9/08	14	14	0.00				0	0
	Dalmor II (KRI)	5/7–28/7/08	255	46	0.00				0	0
	Total		1058	81	0.00				0	0
58.5.2	*Southern Champion* (ANI/TOP)	7/4–4/5/08	168	168	0.00				0	0
	Southern Champion (ANI/TOP)	22/1–10/2/08	113	113	0.00				0	0
	Southern Champion (ANI/TOP)	30/5–24/7/08	442	419	0.00				0	1
	Total		723	700	0.00				0	1

[1] Continuous trawl method.
[2] These low haul numbers are a result of continuous trawls, refer to paragraph 2.21.

Table 8: Seal mortality totals and rates (SPT: seals/trawl) and species composition, recorded by observers in the CAMLR Convention Area trawl fishery during the 2007/08 season. SXX: unidentified seal; SEA: Antarctic fur seal.

Subarea/ division	Vessel (target species)	Cruise dates	Trawls		SPT	Dead		Total dead	Alive (combined)
			Set	Observed		SXX	SEA		
48.1,48.2	*Saga Sea* (KRI)[1]	4/12–20/1/08	774	8[2]	0.00			0	0
	Saga Sea (KRI)[1]	31/1–30/3/08	884	15[2]	0.00			0	0
	Konstruktor Koshkin (KRI)	13/3–28/4/08	565	185	0.00			0	0
	Saga Sea (KRI)[1]	7/4–2/7/08	1219	25[2]	0.00			0	0
	Total		2877	233	0.00			0	0
48.3	*Betanzos* (ANI)	16/2–1/3/08	31	31	0.00			0	0
	Robin M Lee (ANI)	20/1–25/1/08	5	5	0.00			0	0
	Robin M Lee (ANI)	23/4–28/5/08	76	72	0.00			0	0
	Sil (ANI)	20/1–26/1/08	6	6	0.00			0	0
	Sil (ANI)	30/4–24/5/08	55	48	0.00			0	0
	Insing Ho (ANI)	18/1–2/2/08	59	44	0.00			0	0
	Total		232	206	0.00			0	0
48.3	*Maksim Starostin* (KRI)[1]	6/8–31/8/08	56	11[2]	0.00			0	0
	Saga Sea (KRI)[1]	6/7–3/9/08	733	10[2]	0.10		1	1	0
	Juvel (KRI)	27/8–12/9/08	14	14	0.00			0	0
	Dalmor II (KRI)	5/7–28/7/08	255	46	0.13	1	4	5	0
	Total		1058	81	0.07			6	0
58.5.2	*Southern Champion* (ANI/TOP)	7/4–4/5/08	168	168	0.00			0	0
	Southern Champion (ANI/TOP)	22/1–10/2/08	113	113	0.00			0	0
	Southern Champion (ANI/TOP)	30/5–24/7/08	442	419	0.00			0	0
	Total		723	700	0.00			0	0

[1] Continuous trawl method.
[2] These low haul numbers are a result of continuous trawls, refer to paragraph 2.21.

Table 9: Seal mortality totals and rates (SPT: seals/trawl) and species composition of by-catch, recorded by observers in the CAMLR Convention Area trawl fisheries over the last seven seasons. SLP – leopard seal; SEA – Antarctic fur seal; SES – southern elephant seal; SXX – unidentified seal.

Season	Area	Target species	Trips observed	Trawls		SPT	Dead				Total dead	Alive (combined)
				Set	Observed		SLP	SEA	SES	SXX		
2001/02	48.3	*E. superba*	5	992	755	0.00					0	0
	48.3	*C. gunnari*	5	460	431	0.00					0	0
	58.5.2	*D. eleginoides*	6	904	850	0.001		1			1	0
		C. gunnari										
2002/03	48.3	*E. superba*	6	1928	1073	0.03		27			27	15
	48.3	*C. gunnari*	3	184	182	0.00					0	0
	58.5.2	*D. eleginoides*	8	1311	1309	0.003		2	2		4	2
		C. gunnari										
2003/04	48	*E. superba*	1	334	258	0		0			0	0
	48.3	*E. superba*	6	1145	829	0.17		142			142	12
	48.3	*C. gunnari*	6	247	238	0					0	0
	58.5.2	*D. eleginoides*	5	1218	1215	0.002		3			3	0
		C. gunnari										
2004/05	48.2	*E. superba*	2	391	285	0.06		16			16	8
	48.3	*C. gunnari*	7	337	277	0.00		0			0	2
	48.3	*E. superba*	5	1451	842	0.006		5			5	64
	58.5.2	*D. eleginoides*	6	1303	1301	0.00					0	1
		C. gunnari										
2005/06	48.1	*E. superba*	2	1127	839	0.001		1			1	0
	48.3	*C. gunnari*	5	585	457	0.00					0	0
	48.3	*E. superba*	2	395	181	0.00					0	0
	58.5.2	*D. eleginoides*	3	1086	1086	0.00	1				1	0
		C. gunnari										

(continued)

Table 9 (continued)

Season	Area	Target species	Trips observed	Trawls		SPT	Dead				Total dead	Alive (combined)
				Set	Observed		SLP	SEA	SES	SXX		
2006/07	48.1/2	*E. superba*	2	656	418	0.00					0	0
	48.3	*C. gunnari*	4	102	91	0.00					0	0
	48.3	*E. superba*	4	580	194	0.00					0	0
	58.5.2	*D. eleginoides* *C. gunnari*	3	1005	936	0.00					0	0
2007/08	48.1/2	*E. superba*	4	2877	233[1]	0.00					0	0
	48.3	*C. gunnari*	6	232	206	0.00					0	0
	48.3	*E. superba*	4	1058	81[1]	0.07		5		1	6	0
	58.5.2	*D. eleginoides* *C. gunnari*	3	723	700	0.00					0	0

[1] These low haul numbers are a result of continuous trawls, refer to paragraph 2.21.

Table 10: Summary of scientific observations relating to compliance with Conservation Measure 25-02 (2007), based on data from scientific observers from the 1996/97 to the 2007/08 seasons. Values in parentheses are % of observer records that were complete. na – not applicable.

Area/season	Line weighting (Spanish system only)			Night setting (% night)	Offal discharge (%) opposite haul	Streamer line compliance (%)										Total catch rate (birds/thousand hooks)	
	Compliance %	Median weight (kg)	Median spacing (m)			Overall		Attached height		Total length		Streamers length[7]		Distance apart		Night	Day
Subarea 48.3																	
1996/97	0 (91)	5.0	45	81	0 (91)	6	(94)	47	(83)	24	(94)	76	(94)	100	(78)	0.18	0.93
1997/98	0 (100)	6.0	42.5	90	31 (100)	13	(100)	64	(93)	33	(100)	100	(93)	100	(93)	0.03	0.04
1998/99	5 (100)	6.0	43.2	80[1]	71 (100)	0	(95)	84	(90)	26	(90)	76	(81)	94	(86)	0.01	0.08[1]
1999/00	1 (91)	6.0	44	92	76 (100)	31	(94)	100	(65)	25	(71)	100	(65)	85	(76)	<0.01	<0.01
2000/01	21 (95)	6.8	41	95	95 (95)	50	(85)	88	(90)	53	(94)	94	94	82	(94)	<0.01	<0.01
2001/02	63 (100)	8.6	40	99	100 (100)	87	(100)	94	(100)	93	(100)	100	(100)	100	(100)	0.002	0
2002/03	100 (100)	9.0	39	98	100 (100)	87	(100)	91	(100)	96	(100)	100	(100)	100	(100)	<0.001	0
2003/04	87 (100)	9.0	40	98	100 (100)	69	(94)	88	(100)	93	(94)	73	(100)	100	(100)	0.001	0
2004/05	100 (100)	9.5	45	99	100 (100)	75	(100)	88	(100)	88	(100)	75	(100)	100	(100)	0.001	0
2005/06	100 (100)	10.0	40	100	100 (100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2006/07	100 (100)	9.8	39	100	100 (100)	90	(100)	100	(100)	100	(100)	90	(100)	100	(100)	0	0
2007/08	100 (100)	9.5	38.5	100	100 (100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
Subarea 48.4																	
2005/06	Auto only	na	na	100	100 (100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2006/07	Auto only	na	na	100	100 (100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2007/08	Auto only	na	na	100	100 (100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
Subarea 48.6																	
2003/04	100 (100)	7.0	20	41[6]	No discharge	0	(100)	100	(100)	100	(100)	0	(100)	100	(100)	0	0
2004/05	100 (100)	6.5	19.5	29[6]	No discharge	100	(100)	100	(100)	100	(100)	100	(100)	0	(100)	0	0
2005/06	Auto only	na	na	36[6]	No discharge	50	(100)	100	(100)	50	(100)	100	(100)	100	(100)	0	0
2006/07	Auto only	na	na	44[6]	No discharge	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
Divisions 58.4.1,58.4.2, 58.4.3a, 58.4.3b																	
2002/03	Auto only	na	na	24[5]	No discharge	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2003/04	Auto only	na	na	0[5]	No discharge	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2004/05	33[9] (100)	7.9	40	26[5]	No discharge	88	(100)	100	(100)	100	(100)	88	(100)	100	(100)	0	<0.001
2005/06	16[9] (100)	7.2	48	16[5]	No discharge	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	<0.001
2006/07	20[9] (100)	7.7	40	10[5]	4% by 1 vessel[9]	50	(100)	100	(100)	83	(100)	83	(100)	83	(100)	0	0
2007/08	71[9] (100)	8.5	40	10[5]	100 (100)	88	(100)	100	(100)	100	(100)	88	(100)	100	(100)	0	0

(continued)

Table 10 (continued)

Area/season	Line weighting (Spanish system only)			Night setting (% night)	Offal discharge (%) opposite haul	Streamer line compliance (%)										Total catch rate (birds/thousand hooks)	
	Compliance %		Median weight (kg)	Median spacing (m)			Overall		Attached height		Total length		Streamers length[7]		Distance apart		Night	Day
Division 58.4.4																		
1999/00	0[9]	(100)	5	45	50	0	(100)	0	(100)	100	(100)	0	(100)	100	(100)	100	(100)	0	0
Division 58.5.2																		
2002/03	Auto only		na	na	100	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2003/04	Auto only		na	na	99	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2004/05	Auto Only		na	na	50[8]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2005/06	Auto Only		na	na	53[8]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2006/07	Auto Only		na	na	54[8]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2007/08	Auto Only		na	na	45[8]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
Subareas 58.6, 58.7																		
1996/97	0	(60)	6	35	52	69	(87)	10	(66)	100	(60)	10	(66)	90	(66)	60	(66)	0.52	0.39
1997/98	0	(100)	6	55	93	87	(94)	9	(92)	91	(92)	11	(75)	100	(75)	90	(83)	0.08	0.11
1998/99	0	(100)	8	50	84[2]	100	(89)	0	(100)	100	(90)	10	(100)	100	(90)	100	(90)	0.05	0
1999/00	0	(83)	6	88	72	100	(93)	8	(100)	91	(92)	0	(92)	100	(92)	91	(92)	0.03	0.01
2000/01	18	(100)	5.8	40	78	100	(100)	64	(100)	100	(100)	64	(100)	100	(100)	100	(100)	0.01	0.04
2001/02	66	(100)	6.6	40	99	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2002/03	0	(100)	6.0	41	98	50	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	<0.01	0
2003/04	100	(100)	7.0	20	83	100	(100)	50	(100)	50	(100)	100	(100)	100	(100)	100	(100)	0.03	0.01
2004/05	100	(100)	6.5	20	100	100	(100)	0	(100)	100	(100)	100	(100)	100	(100)	0	(100)	0.149	0
2005/06	100	(100)	9.1	40	100	100	(100)	0	(100)	100	(100)	100	(100)	0	(100)	0	(100)	0	0
2006/07	100	(100)	10.4	40	100	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2007/08	0	(100)	11	56	100	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
Subareas 88.1, 88.2																		
1996/97	Auto only		na	na	50	0	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
1997/98	Auto only		na	na	71	0	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
1998/99	Auto only		na	na	1[3]	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
1999/00	Auto only		na	na	6[4]	No discharge		67	(100)	100	(100)	67	(100)	100	(100)	100	(100)	0	0
2000/01	1	(100)	12	40	18[4]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2001/02	Auto only		na	na	33[4]	No discharge		100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0

(continued)

Table 10 (continued)

Area/season	Line weighting (Spanish system only)			Night setting (% night)	Offal discharge (%) opposite haul	Streamer line compliance (%)										Total catch rate (birds/thousand hooks)	
	Compliance %		Median weight (kg)	Median spacing (m)		Overall		Attached height		Total length		Streamers length[7]		Distance apart		Night	Day
Subareas 88.1, 88.2 (continued)																	
2002/03	100	(100)	9.6	41	21[4]	1 incidence by 1 vessel	100	(100)	100	(100)	100	(100)	100	(100)	100	(100)	0	0
2003/04	89	(100)	9	40	5[4]	24% by 1 vessel	59	(100)	82	(100)	86	(100)	61	(81)	100	(100)	0	<0.01
2004/05	33	(100)	9.0	45	1[4]	1% by 1 vessel	64	(100)	100	(100)	100	(100)	60	(94)	94	(100)	0	0
2005/06	100	(100)	9.2	35	1[4]	No discharge	85	(92)	100	(92)	85	(92)	92	(92)	100	(92)	0	0
2006/07	100	(100)	10	36	4[4]	1% by 1 vessel	93	(100)	100	(100)	100	(100)	93	(93)	100	(100)	0	0
2007/08	67	(100)	10	37	11[4]	No discharge	92	(100)	100	(100)	100	(100)	92	(100)	100	(100)	0	0

[1] Includes daytime setting – and associated seabird by-catch – as part of line-weighting experiments on *Argos Helena* (WG-FSA-99/5).
[2] Includes some daytime setting in conjunction with use of an underwater-setting funnel on *Eldfisk* (WG-FSA-99/42).
[3] Conservation Measure 169/XVII allowed New Zealand vessels to undertake daytime setting south of 65°S in Subarea 88.1 to conduct a line-weighting experiment.
[4] Conservation Measures 216/XX and 41-09 and 41-10 permit daytime setting south of 65°S in Subarea 88.1 if able to demonstrate a sink rate of 0.3 m $s.^{-1}$
[5] Conservation Measures 41-05 and 41-11 permit daytime setting in Divisions 58.4.1 and 58.4.2 if the vessel complies with CM 24-02.
[6] Conservation Measure 41-04 permits daytime setting if the vessel complies with CM 24-02.
[7] Conservation Measure 25-02 (2003, 2007) was updated in 2003 and the requirement for a minimum of five streamers was replaced by minimum streamer lengths.
[8] Conservation Measure 41-08 permits daytime setting if the vessel complies with CM 24-02.
[9] The *Tronio* discharged offal on seven occasions due to a mechanical problems.

Table 11: Compliance, as reported by observers, of streamer lines with the minimum specifications set out in Conservation Measure 25-02 (2007) during the 2007/08 season. Y – yes; N – no; MP – Moon pool.

Vessel name	Dates of fishing	Fishing method	Compliance with CCAMLR specifications	Compliance with details of streamer line specifications				Length of streamers (m)	Streamer line in use % setting		Haul scaring device used %
				Attachment height above water (m)	Total length (m)	No. of streamers per line	Spacing of streamers per line (m)		Night	Day	
Subarea 48.3											
Antarctic Bay	28/5–22/8/08	Spanish	Y	Y (8)	Y (150)	7	Y (5)	Y (1–7)	99.6		100
Argos Froyanes	14/5–28/8/08	Auto	Y	Y (7)	Y (166)	11	Y (4)	Y (2–7)	100		100
Argos Georgia	4/5–30/8/08	Auto	Y	Y (7)	Y (169)	8	Y (5)	Y (1–8)	100		100
Argos Helena	1/5–31/8/08	Auto	Y	Y (14)	Y (157)	13	Y (5)	Y (1–8)	100		MP
Tronio	1/5–29/8/08	Spanish	Y	Y (8)	Y (181)	11	Y (5)	Y (6.7)	100		100
Jacqueline	4/5–23/8/08	Spanish	Y	Y (7.6)	Y (158)	9	Y (5)	Y (1–7)	100		100
Koryo Maru No. 11	2/5–6/9/08	Spanish	Y	Y (8)	Y (171)	10	Y (5)	Y (4–7)	100		100
Punta Ballena	15/5–7/9/08	Auto	Y	Y (7)	Y (155)	7	Y (5)	Y (1–6.7)	100		96[1]
San Aspiring	1/5–5/6/08	Auto	Y	Y (8.2)	Y (213)	24	Y (5)	Y (9.6)	100		100
San Aspiring	18/6–12/8/08	Auto	Y	Y (8.2)	Y (205)	22	Y (4)	Y (1–9.5)	100		100
Viking Bay	1/5–28/8/08	Spanish	Y	Y (7)	Y (172)	12	Y (4)	Y (1–7.1)	100		100
Subarea 48.4											
Argos Froyanes	21/4–12/5/08	Auto	Y	Y (7)	Y (166)	11	Y (4)	Y (2–7)	100		100[2]
San Aspiring	3/4–23/4/08	Auto	Y	Y (8.2)	Y (213)	24	Y (5)	Y (9.6)	100		100[2]
Divisions 58.4.1, 58.4.2, 58.4.3a, 58.4.3b											
Tronio[3]	2/12–16/2/08	Spanish	Y	Y (7.2)	Y (160)	12	Y (5)	Y (1–6.5)	100	100	0[2]
Antillas Reefer	16/12–21/2/08	Spanish	Y	Y (7)	Y (150)	11	Y (5)	Y (6.5)	100	100	0[2]
Banzare	6/1–27/2/08	Trotline	Y	Y (8.5)	Y (155)	30	Y (5)	Y (1–8.5)	100	100	0[2]
Paloma V	21/12–17/2/08	Spanish	Y	Y (7)	Y (150)	7	Y (5)	Y (1–6.5)		100	0[2]
Janas	18/5–26/5/08	Auto	Y	Y (7)	Y (184)	29	Y (4.5)	Y (1–7.4)	100		100[2]
Insung No. 1	20/12–12/3/08	Spanish	N	Y (7)	Y (150)	10	Y (5)	N (1–4.5)		100	99[2]
Shinsei Maru No. 3	30/12–19/2/08	Trotline	Y	Y (7.5)	Y (151)	6	Y (5)	Y (4–6.8)	100	100	100[2]
Insung No. 2[3]	4/12–25/2/08	Spanish	Y	Y (7)	Y (150)	14	Y (5)	Y (1–6.5)	100	100	98[2]
Division 58.5.2											
Austral Leader II	25/5–28/6/08	Auto	Y	Y (7.2)	Y (150)	20	Y (5)	Y (2–7.2)	100	100	100
Janas	29/5–2/7/08	Auto	Y	Y (7)	Y (184)	29	Y (4.5)	Y (1–7.4)	100	100	100
Subareas 58.6, 58.7											
Koryo Maru No. 11	9/2–30/3/08	Spanish	Y	Y (8)	Y (170)	10	Y (4.6)	Y (2–9)	100		100

(continued)

Table 11 (continued)

Vessel name	Dates of fishing	Fishing method	Compliance with CCAMLR specifications	Compliance with details of streamer line specifications				Length of streamers (m)	Streamer line in use % setting		Haul scaring device used %
				Attachment height above water (m)	Total length (m)	No. of streamers per line	Spacing of streamers per line (m)		Night	Day	
Subareas 88.1, 88.2											
Avro Chieftain	24/12–14/2/08	Auto	Y	Y (7.2)	Y (170)	22	Y (4.5)	Y (1.5–7)		100	MP[2]
Janas	1/12–20/2/08	Auto	Y	Y (7)	Y (205)	18	Y (4)	Y (2–7)		100	0[2]
Jung Woo No. 2	5/12–17/2/08	Spanish	Y	Y (7.8)	Y (150)	10	Y (5)	Y (1–6.8)		100	0[2]
Ross Mar	1/12–1/2/08	Auto	Y	Y (7)	Y (152)	22	Y (5)	Y (1–7)		100	0[2]
Ross Star	14/1–1/3/08	Auto	Y	Y (7.7)	Y (155)	7	Y (5)	Y (1–7)	100	100	0[2]
San Aotea II	11/1–20/2/08	Auto	Y	Y (7.6)	Y (220)	19	Y (5)	Y (1–7.8)		100	0[2]
San Aspiring	2/12–16/2/08	Auto	Y	Y (7.5)	Y (205)	24	Y (4.7)	Y (1–8)		100	0[2]
Antartic III	8/12–8/12/08	Auto	N	Y (7)	Y (150)	10	Y (3)	N (1–6)		100	0[2]
Argos Georgia	1/12–15/2/08	Auto	Y	Y (7.6)	Y (155)	7	Y (5)	Y (7)	100	100	0[2]
Argos Helena	1/12–11/2/08	Auto	Y	Y (8)	Y (150)	13	Y (5)	Y (9)		100	MP[2]
Argos Froyanes	1/12–28/2/08	Auto	Y	Y (7.5)	Y (150)	10	Y (2)	Y (7.7)	100	100	0[2]
Hong Jin No. 707	3/12–19/2/08	Spanish	Y	Y (7)	Y (150)	25	Y (5)	Y (1–6.5)	100	100	0[2]
Yantar	10/1–10/3/08	Trotline	Y	Y (7)	Y (150)	7	Y (5)	Y (6.5)	100	100	0[2]

[1] The *Punta Ballena* did not deploy the bird-scaring device during six hauls due to extreme weather which caused it to become unsafe to use.
[2] Conservation measure not applicable in this area.
[3] These vessels also conducted a small amount of fishing in Subarea 88.1 during this cruise.

Table 12: Summary of recommendations from SC-CAMLR-XXVII/10, 12 and SC-CAMLR-XXVII/BG/8, 10, 11, 12, and the Scientific Committee's recommendations last year to France (SC-CAMLR-XXVI, paragraph 5.6).

	Scientific Committee or French recommendation	Description	Status	Comments/notes
1	SC-CAMLR-XXVI, 5.6(i)	Observer data	In progress	Additional data are being recorded: details of the deployment of a haul-mitigation device, characteristics of streamer lines, and line sink rates.
2	SC-CAMLR-XXVI, 5.6(ii)	Petrel population analysis	Completed	SC-CAMLR-XXVII/BG/8 is the completed analysis; France submitted all the required documents to ad hoc WG-IMAF in 2008 and will submit an English version to WG-SAM for its 2009 meeting.
3	SC-CAMLR-XXVI, 5.6(iii)	Raw by-catch data	Completed	This year, France has submitted the full set of data from the 2007/08 fishing season.
4	SC-CAMLR-XXVI, 5.6(iv)	Analysis of vessel specific issues	Completed	See SC-CAMLR-XXVII/12 and BG/10.
5	SC-CAMLR-XXVI, 5.6(v)	Broaden set of measures used, particularly during haul	In progress	Implementation of an effective Brickle curtain (haul mitigation) on all vessels; management of offal has been modified since September 2008, offal can only be discharged between hauls; improving streamer line construction to meet CCAMLR standards.
6	SC-CAMLR-XXVI, 5.6(vi)	Further research with WG-IMAF	Ongoing	Close collaboration between TAAF and IMAF. Implementation of an independent working group with fishermen, scientists and the TAAF administration.
7	SC-CAMLR-XXVI, 5.6(vii)	Redirection of management based on data analysis	Ongoing	Improvements to streamer lines, haul mitigation devices, and offal management practices; additional data collection and analysis will inform other possible management options; weekly by-catch reports from vessel observers (daily reports during the breeding seasons of both the grey and the white-chinned petrel).
8	SC-CAMLR-XXVI, 5.6(viii)	Submit action plan	Completed	SC-CAMLR-XXVII/8 submitted and being implemented.
9	SC-CAMLR-XXVI, 5.6(ix)	Submit paper on regulatory requirements	Completed	SC-CAMLR-XXVII/BG/11

(continued)

Table 12 (continued)

	Scientific Committee or French recommendation	Description	Status	Comments/notes
10	SC-CAMLR-XXVII/12 (DeLord et al. study on environmental, spatial, temporal and operational effects 2003–2006)	Fishery closure during critical chick-rearing periods for both petrel species – 15 February to 15 March and 50 days in part of May and all of June	In progress	The one-month closure 15 February to 15 March (2003 to 2008) will be extended from 1 February to 10 March in 2009. There is no specific fishing closure during the grey petrel's chick-rearing period. There is a possibility that certain sectors might be closed during periods when mortality peaks in these areas (SC-CAMLR-XXVII/BG/11).
11	SC-CAMLR-XXVII/12	Controlled effort in seasons	In progress	Fishing closure from 1 February to 10 March 2009. Possibility exists to close the most sensitive sectors, move the fishing vessels, or reduce hook effort.
12	SC-CAMLR-XXVII/12	Minimise seabird access to baits (e.g. heavier IWL, 150 g m^{-1})	In progress	All vessels have been required to use IWL (50 g m^{-1}) since 2005, which allows a sink rate greater than 0.2 m s^{-1} (CCAMLR standard). IWL heavier than 50 g m^{-1} is not practicable or possible. Application of manual weights onto IWL during periods of highest risk is being considered. Recording the line sink rates on all vessels during the next two seasons will be done.
13	SC-CAMLR-XXVII/12	Minimum three streamer lines	Completed	Regulations are imposed to use a minimum of two streamers lines on all vessels, but in general three or more streamer lines are used.
14	SC-CAMLR-XXVII/12	Haul mitigation device	Completed	All vessels required to use a haul-mitigation device (e.g. Brickle curtain).
15	SC-CAMLR-XXVII/BG/10 (Waugh et al. cooperative study)	*Line setting*	In progress	*Recommendation[1]:* **Increase aerial coverage**, *increase sink rate of lines*, *add weights at high-risk times*, **reduce/eliminate fisheries waste discharge**, *underwater setting*, **batch dumping of offal**, **waste management strategies,** e.g. **storage during hauls and discharge between hauls,** mincing, mealing.
16	SC-CAMLR-XXVII/BG/10	*Haul mitigation*	In progress	*Recommendations[1]:* **improve Brickle curtain**, **use CCAMLR reporting procedures**, **reduce/eliminate waste discharge during hauling**, **batch offal dumping**, *active research program*, **study to tailor Brickle curtain design for vessels**.

(continued)

Table 12 (continued)

	Scientific Committee or French recommendation	Description	Status	Comments/notes
17	SC-CAMLR-XXVII/BG/10	*Hook discards*	In progress	*Recommendations*[1]*:* **increase awareness**, **outreach posters**, *improve filtering/waste treatment systems.*
18	SC-CAMLR-XXVII/BG/10	*Waste management*	In progress	*Recommendations*[1]*:* **batch dumping**, **offal retention during hauls and discharge between hauls**, *improve factory filtering system*, *test batching regimes.*
19	SC-CAMLR-XXVII/BG/10	*Haul curtains*	In progress	*Recommendations*[1]*:* **install structure needed to set up haul curtain**, **use design and custom fit for vessel which resembles the New Zealand type**, **use haul curtains at all times during hauling**.
20	SC-CAMLR-XXVII/BG/10	*Information flow*	Ongoing	*Recommendations*[1]*:* **reinforce exchange between CCAMLR and TAAF**, **establish working group to advise TAAF**, **continued exchange between TAAF and scientists**, *exchange of personnel between French vessels and New Zealand or Australian vessels.* **WG-IMAF scientists reviewed cooperative study proposal and several participated in study. TAAF has participated at annual WG-IMAF meetings since 2003**.
21	SC-CAMLR-XXVII/BG/10	*Strategic framework*	Ongoing	*Recommendations*[1]*:* **Develop a strategic action plan that includes: by-catch reduction objectives, uptake of best-practice measures**, **specialist by-catch working group, research program, penalty regime, and education and awareness raising programs**.
22	SC-CAMLR-XXVII/BG/10	*Proposed research program*	In progress	*Recommendations*[1]*:* **Develop a program to consider offal management**, **streamer line design improvements in materials and aerial extent**, **and sink rate improvements.**
23	SC-CAMLR-XXVII/BG/10	*Streamer line configuration*	In progress	*Recommendations*[1]*:* **revision of streamer materials**, **improve aerial extent**, **vessel-specific solutions,** *attach branch streamers with swivels*, *multiple streamer lines (5 or more)*, **increase attachment height to 7 m or more**, **use of outboard booms**, *consider wind direction when setting streamer line*, **carry replacement streamer lines and materials on board**.

[1] **Bold indicates item completed or under way.** *Italics indicates item is under consideration.* Regular font indicates no action has been taken.

Table 13: List and priority observer tasks for WG-IMAF.

User group	Data type	Description	Use	Optimal collection	Practical limitations
IMAF	Incidental mortality (high priority)	Record mortality of seabirds and marine mammals.	Estimate seabird and marine mammal mortalities within the Convention Area caused by fishing.	Observe all krill trawl hauls and appropriate proportions of finfish trawl hauls and longline hooks hauled as defined in Tables 14 and 15.	Time constraints Safety considerations Poor weather conditions
	Seabirds and marine mammal interactions with fishing gear (high priority)	Record entanglement and injury to seabirds and marine mammals.	Estimate seabird and marine mammal mortalities within the Convention Area caused by fishing.	Observe all krill trawl hauls and appropriate proportions of finfish trawl hauls and longline hooks hauled as defined in Tables 14 and 15.	Time constraints Safety considerations Poor weather conditions
		Trawl warp strikes.	Estimate risk of trawl warp strike interactions with seabirds within the Convention Area.	At least one warp strike observation per 24-hour period.	Time constraints Safety considerations Poor weather conditions
		Interaction of marine mammals with fishing vessels and gear.	To assess ecological impact of depredation.	Once per haul observation period (in conjunction with haul observations).	Time constraints Safety considerations Poor weather conditions Poor visibility
	Implementation of mitigation measures (medium priority but also required by SCIC)	Description and specification of mitigation measures (L2 data).	To assess the performance of the measures to review attainment of minimum requirements.	Once every seven days (in conjunction with sink rate tests).	Night setting limits ability to assess aerial extent Poor weather conditions Safety considerations
		TDR and bottle tests (L10 data).	To assess sink rates.	One test per 24-hour period and four tests on a single longline once per seven-day period (in conjunction with mitigation observations).	Poor weather conditions Night setting for bottle tests Safety considerations

Table 14: Summary of assessment of risk posed to seabirds from net entanglements in pelagic finfish trawl fisheries in the Convention Area (see also Figure 1).

Risk level[1]	Mitigation requirements	Recommended observer coverage
1 – low	• Strict compliance with standard seabird by-catch conservation measure[2]. • Vessels that catch a total of three birds in any season shall consider the use of net binding to reduce seabird captures during shooting operations. • No offal discharge during the shooting and hauling of trawl gear. Full offal retention where possible.	20% of sets 50% of hauls
2 – average to low	• Strict compliance with standard seabird by-catch conservation measure[2]. • Vessels that catch a total of three birds in any season shall consider the use of net binding to reduce seabird captures during shooting operations. • No offal discharge during the shooting and hauling of trawl gear. Full offal retention where possible.	25% of sets 75% of hauls
3 – average	• Strict compliance with standard seabird by-catch conservation measure[2]. • Vessels that catch a total of three birds in any season shall consider the use of net binding to reduce seabird captures during shooting operations. • No offal discharge during the shooting and hauling of trawl gear. Full offal retention where possible.	40% of sets 90% of hauls
4 – average to high	• Strict compliance with standard seabird by-catch conservation measure[2]. • Vessels that catch a total of three birds in any season shall use net binding, and consider adding weight to the codend to reduce seabird captures during shooting operations. • No offal discharge during the shooting and hauling of trawl gear. Full offal retention where possible.	45% of sets 90% of hauls
5 – high	• Strict compliance with standard seabird by-catch conservation measure[2]. • Use net binding, and consider adding weight to the codend to reduce seabird captures during shooting operations. • No offal discharge during the shooting and hauling of trawl gear. Full offal retention where possible.	50% of sets 90% of hauls

[1] Where 'risk' means seabird by-catch risk if no mitigation is used for a given level of seabird abundance.

[2] Conservation Measure 25-03.

Table 15: Summary of assessment of risk to seabirds posed by longline fisheries in the Convention Area (see also Figure 1).

Risk level	Mitigation requirements	Observer coverage
1 – low	• Strict compliance with standard seabird by-catch conservation measure[1]. • No need for restriction of longline fishing season. • Daytime setting permitted subject to line sink rate requirement[2]. • No offal dumping.	20% of hooks hauled 100% of sets[3]
2 – average to low	• Strict compliance with standard seabird by-catch conservation measure[1]. • No need for restriction of longline fishing season. • Daytime setting permitted subject to line sink rate requirements and seabird by-catch limits. • No offal dumping.	25% of hooks hauled 100% of sets[3]
3 – average	• Strict compliance with standard seabird by-catch conservation measure[1]. • Restrict longline fishing to period outside at-risk species' breeding season where known/relevant unless line sink rate requirement is met at all times. • Daytime setting permitted subject to strict line sink rate requirements and seabird by-catch limits. • No offal dumping.	40% of hooks hauled[2] 100% of sets[3]
4 – average to high	• Strict compliance with standard seabird by-catch conservation measure[1]. • Restrict longline fishing to the period outside any at-risk species' breeding season(s). • Strict line sink rate requirements at all times. • No daytime setting permitted. • No offal dumping.	45% of hooks hauled[2] 100% of sets[3]
5 – high	• Strict compliance with standard seabird by-catch conservation measure[1]. • Restrict longline fishing to period outside at-risk species' breeding season. • Closed areas as identified. • Strict line sink rate requirements at all times. • No daytime setting permitted. • Strict seabird by-catch limits in place. • No offal dumping.	50% of hooks hauled[2] 100% of sets[3]

[1] Conservation Measure 25-02 with the possibility of exemption to paragraph 5 as provided by Conservation Measure 24-02.
[2] This is likely to require the presence of two observers.
[3] Observers are requested to record whether seabird mitigation is in place at least once per set and verify that no offal is being discharged.

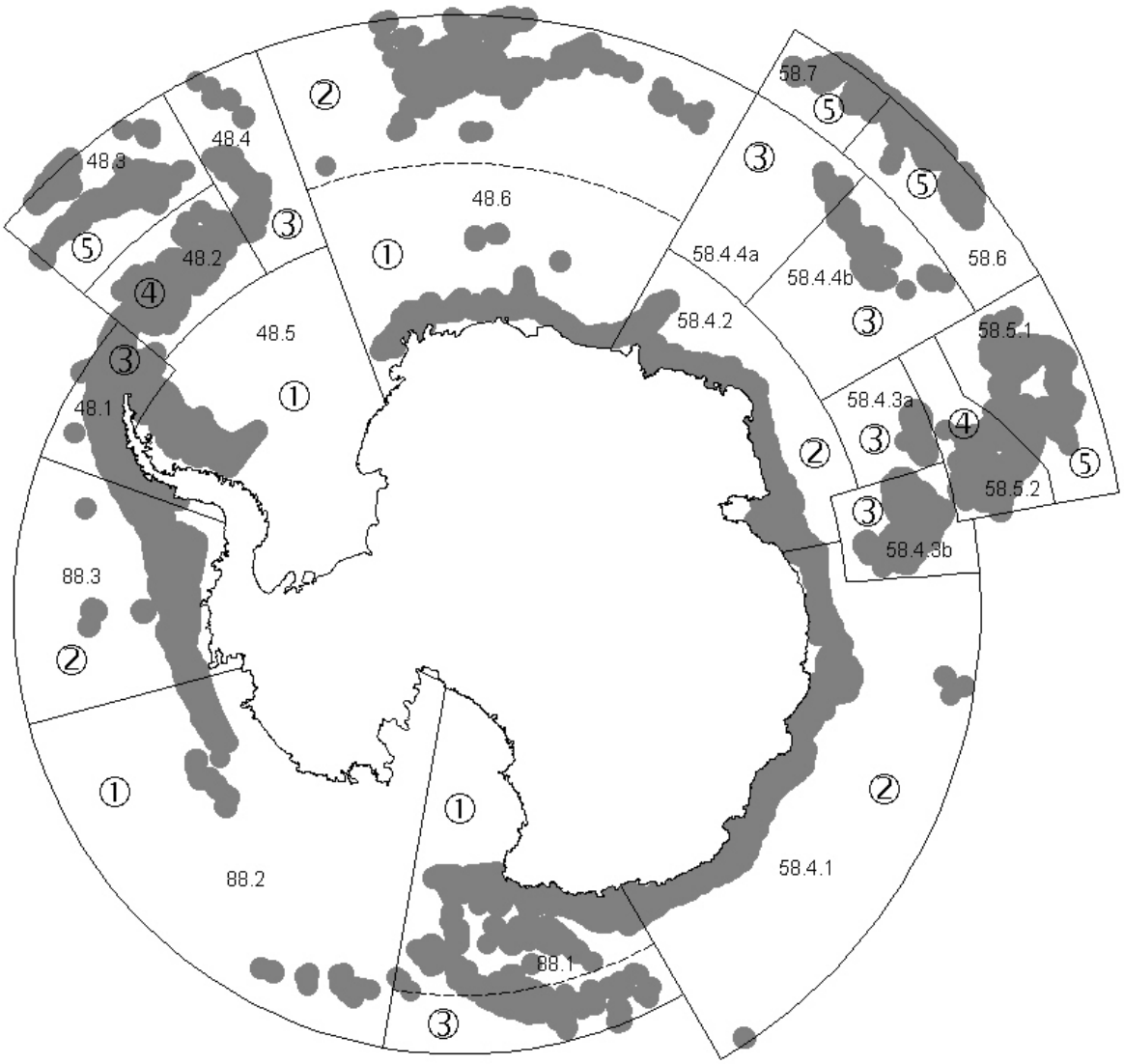

Figure 1: Assessment of the potential risk of interaction between seabirds, especially albatrosses, and longline fisheries within the Convention Area. 1: low, 2: average to low, 3: average, 4: average to high, 5: high. Shaded patches represent seabed areas between 500 and 1 800 m.

APPENDIX A

AGENDA

Ad Hoc Working Group on Incidental Mortality Associated with Fishing
(Hobart, Australia, 13 to 17 October 2008)

1. Preliminaries and intersessional work of ad hoc WG-IMAF

2. Incidental mortality of seabirds and marine mammals in fisheries in the Convention Area
   - 2.1 Seabirds
     - 2.1.1 Longline
     - 2.1.2 Trawl
     - 2.1.3 Other
   - 2.2 Marine mammals
     - 2.2.1 Longline
     - 2.2.2 Trawl
     - 2.2.3 Other
   - 2.3 Information relating to the implementation of Conservation Measures 25-02, 25-03, 26-01 and 24-02

3. Review of action plans to eliminate seabird mortality
   - 3.1 French EEZ

4. Incidental mortality of seabirds and marine mammals in fisheries outside the Convention Area
   - 4.1 Longline
   - 4.2 Trawl
   - 4.3 Other

5. Incidental mortality of seabirds and marine mammals during IUU fishing in the Convention Area

6. Research into and experience with mitigation measures
   - 6.1 Longline
   - 6.2 Trawl
   - 6.3 Other

7. Observer reports and data collection

8. Research into the status and distribution of seabirds

9. Assessments of risk in CCAMLR subareas and divisions

10. Incidental mortality of seabirds and marine mammals in relation to new and exploratory fisheries
    - 10.1 New and exploratory fisheries operational in 2007/08
    - 10.2 New and exploratory fisheries proposed for 2008/09

11. International and national initiatives relating to incidental mortality of seabirds and marine mammals in fishing
    - 11.1 Coordination with ACAP
    - 11.2 International initiatives
    - 11.3 National initiatives

12. Marine debris and its impacts on marine mammals and seabirds in the Convention Area

13. Interaction with other Scientific Committee working groups

14. Fishery reports

15. Streamlining the work of the Scientific Committee

16. Other business

17. Adoption of the report and close of the meeting.

APPENDIX B

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