

INCIDENTAL MORTALITY

5.1 The Scientific Committee reviewed the report of ad hoc WG-IMAF (Annex 5, section 7 and Appendix O). It endorsed the report and its conclusions, and the plan of intersessional work (SC-CAMLR-XXIV/BG/28) subject to the comments set out below.

Incidental mortality of seabirds during regulated longline and pot fishing in the Convention Area in 2005

5.2 The Scientific Committee noted that:

- (i) for Subarea 48.3, the total extrapolated seabird mortality was 13 birds at a rate of 0.0011 birds/thousand hooks, compared to the rates in 2004 and 2001 of 0.0015 birds/thousand hooks and the rate for 2003 of 0.0003 birds/thousand hooks (Annex 5, Appendix O, Table 3). Total extrapolated captures decreased between 2003/04 and 2004/05 (Annex 5, Appendix O, paragraph 12);
- (ii) for Subarea 58.4, the total extrapolated seabird mortality was eight birds at a rate of <0.001 birds/thousand hooks, from one vessel operating in Division 58.4.1. No mortalities had been reported prior to 2004/05 (Annex 5, Appendix O, paragraph 13);
- (iii) within the South African EEZ in Subareas 58.6 and 58.7, the total extrapolated mortality was 76 seabirds (from the one vessel that fished there) at a rate of 0.149 birds/thousand hooks, compared to 0.025 and 0.003 in 2003/04 and 2002/03 respectively (Annex 5, Appendix O, Table 3). In earlier years (1997 to 2001) extrapolated mortalities and rates ranged between 834–156 birds and 0.52–0.018 birds/thousand hooks respectively (Annex 5, Appendix O, paragraph 14);
- (iv) in Subareas 48.4, 48.6, 88.1 and 88.2 and Division 58.5.2, no seabird mortalities were observed on longline vessels (Annex 5, Appendix O, paragraph 15, Table 3);
- (v) no incidental mortalities were recorded on two cruises in Subareas 58.6 and 58.7 undertaking pot fishing for *D. eleginoides* (Annex 5, Appendix O, paragraph 16).

5.3 The Scientific Committee noted that the extrapolated total of 97 seabirds was a 65% increase from the extrapolated 58 mortalities for 2003/04. The vast majority of this mortality (78%) is attributed to one vessel fishing in Subareas 58.6 and 58.7 (Annex 5, Appendix O, paragraphs 6 to 9).

5.4 The Scientific Committee noted that the reports of seabirds being caught injured and uninjured indicates that seabirds are being caught on the haul and that this accounts for at least 68% of seabird captures in 2004/05 (Annex 5, Appendix O, paragraph 11 and Table 1). It welcomed progress towards actions to address this.

5.5 The Scientific Committee welcomed the submission by France of historical data from longline fishing in the French EEZ in Division 58.5.1 for 2000/01 (Annex 5, Appendix O, paragraph 17). The total seabird mortality reported by captains in 2000/01 was 1 917 birds and the corresponding catch rate was 0.092 birds/thousand hooks. France indicated that data for Subarea 58.6 will be submitted next year (Annex 5, Appendix O, paragraph 19).

5.6 The Scientific Committee noted that in 2004/05 the total reported seabird mortality from observers for Subarea 58.6 and Division 58.5.1 was 61 and 1 054 birds respectively (Annex 5, Appendix O, Table 8). The corresponding rates were 0.047 and 0.161 birds/thousand hooks. The total seabird mortality reported by captains in Subarea 58.6 and Division 58.5.1 was 137 and 1 901 birds respectively (Annex 5, Appendix O, Table 7). The corresponding rates were 0.028 and 0.071 birds/thousand hooks (Annex 5, Appendix O, paragraphs 22 and 23).

5.7 Comparing this year's to last year's data is complicated by different count methods. Data submitted to CCAMLR from 2000 to mid-year 2004 were collected by captains. Beginning April 2004, on-board observers collected seabird incidental mortality and mitigation-related information (Annex 5, Appendix O, paragraph 21). Comparing 2003/04 and 2004/05 for the period from April to August, observers' rates showed an increase of 87% (0.006 to 0.011 birds/thousand hooks) and 21% (0.058 to 0.070 birds/thousand hooks) respectively in Subarea 58.6 and Division 58.5.1 (Annex 5, Appendix O, paragraph 24). The Scientific Committee noted that in order to be consistent with CCAMLR procedures, the use of observer data only is recommended.

5.8 The seabird data recorded by observers were used to extrapolate total seabird mortality (Annex 5, Appendix O, Table 9). For Subarea 58.6, the observed incidental mortalities of 61 birds extrapolates to a mortality of 242 seabirds (0.049 birds/thousand hooks). For Division 58.5.1, the observed incidental mortalities of 1 054 birds extrapolates to a mortality of 4 387 seabirds (0.164 birds/thousand hooks) (Annex 5, Appendix O, paragraph 28, Table 11).

5.9 The Scientific Committee noted that 30% of seabirds captured were caught alive, indicating that they were taken on the haul. It was recognised that attention to mitigating captures on the haul would be required as part of efforts to achieve a continuing reduction in seabird mortality (Annex 5, Appendix O, paragraph 30).

5.10 The Scientific Committee noted the continued efforts to use and develop effective mitigation measures in the French EEZ fisheries. Following recommendations made by the Scientific Committee last year, new regulations entered into force in 2005 and include weighting regimes, multiple streamer lines, an area closure, and prohibition of hook discard and of the use of black hookline, and new measures will continue to be tested (Annex 5, Appendix O, paragraphs 36 and 37).

5.11 The Scientific Committee commended the initiatives taken by France for research and management relating to the incidental mortality of seabirds in its EEZs. It recommended that:

- (i) observers continue to be deployed on 100% of vessels (Annex 5, Appendix O, paragraph 26);

- (ii) consideration be given to increasing the proportion of hooks observed (e.g. to 40–50%) (Annex 5, Appendix O, paragraphs 32 and 33);
- (iii) data collection protocols be improved including incorporating the CCAMLR distinctions and definitions relating to dead and live seabird by-catch (Annex 5, Appendix O, paragraphs 31 and 41);
- (iv) appropriate analysis of the 2005 data be undertaken (Annex 5, Appendix O, paragraphs 38 to 40).

5.12 Prof. Beddington asked why there was a problem in increasing the proportion of hooks being observed in this fishery. Dr T. Micol (France) noted that an increase in the proportion of hooks observed would be logistically difficult to achieve given the present workload of observers. Mr Smith, as ad hoc WG-IMAF Co-Convener, noted that, based on the comments in CCAMLR-XXIV/BG/26 and the review of WG-FSA-05/50, it was recommended that France explore increasing the proportion of hooks observed to allow the levels of error associated with estimates of incidental mortality to be better determined, as current levels of coverage may be insufficient to allow this to occur in a statistically robust manner (Annex 5, Appendix O, paragraphs 32 and 33).

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

5.13 The Scientific Committee noted that compliance with Conservation Measures 25-01, 25-02 and 25-03 is summarised as follows:

- (i) with respect to Conservation Measure 25-01, nine of the 10 vessels which had packaging bands on board complied with the requirement to dispose of them using on-board incineration (Annex 5, Appendix O, paragraph 46; WG-FSA-05/9 Rev. 2, Table 1);
- (ii) with respect to Conservation Measure 25-02:
 - (a) line weighting (Spanish system) – for the first time there was 100% compliance in all subareas and divisions (Annex 5, Appendix O, paragraph 47, Table 13);
 - (b) line weighting (autoline system) – all vessels fishing in Subareas 88.1, 88.2 and Division 58.4.2 south of 60°S in daylight met the requirements described in Conservation Measure 24-02. As in previous years, this line-weighting requirement has been fully achieved by all vessels (Annex 5, Appendix O, paragraph 48; WG-FSA-05/9 Rev. 2, Table 6; SC-CAMLR-XXIII, Annex 5, paragraph 7.57);
 - (c) night setting – in Subareas 58.6 and 58.7, 100% of sets occurred at night, an increase from 83% last year; in Subarea 48.3, 99% of sets occurred at night (98% in 2004) (Annex 5, Appendix O, Table 13). In Subareas 48.6, 88.1, 88.2 and Divisions 58.4.2 and 58.4.3b, all vessels demonstrated a consistent minimum line sink rate of 0.3 m/s and hence fished under

Conservation Measure 24-02, which provides exemptions to night setting south of 60°S (Annex 5, Appendix O, paragraph 49; WG-FSA-05/9 Rev. 2, Table 6);

- (d) offal discharge – a single vessel discharged offal during one set and one haul in Subarea 88.1 (offal discharge is prohibited in this subarea); in Subarea 48.3, a single vessel discharged offal during one set (Annex 5, Appendix O, paragraph 50, Table 1);
 - (e) discard of hooks – hooks were present in discards on six vessels; on three of these this was a rare event (WG-FSA-05/9 Rev. 2, Table 1). However, on one vessel it was a daily occurrence during the first half of the season; following a mid-season crew change, the discarding of hooks stopped (Annex 5, Appendix O, paragraph 51);
 - (f) streamer lines – the number of cruises complying with streamer line specifications increased from 64 to 74% this year (Annex 5, Appendix O, Table 12), although this is not as high as the 92% in 2003. In Subareas 48.6, 58.6, 58.7 and Divisions 58.4.2, 58.4.3b and 58.5.2, all vessels used streamer lines on all sets; in Subarea 48.3, only one of 1 847 sets was undertaken without using a streamer line; in Subareas 88.1 and 88.2, one vessel undertook a single set without using a streamer line (Annex 5, Appendix O, paragraphs 52 to 54 and 60, Tables 1 and 12);
 - (g) haul scaring devices – in Subarea 48.3, three vessels did not use haul scaring devices on all of the hauls; in Subareas 58.6 and 58.7, 100% of hauls used scaring devices; in Division 58.5.2 the only longline vessel fishing in that area was equipped with a moonpool, hence no devices were required (Annex 5, Appendix O, paragraphs 57 to 59, Table 12);
- (iii) with respect to Conservation Measure 25-03, two of nine (22%) vessels did not comply with the prohibition of discharge of offal during the shooting or hauling of trawl gear (Annex 5, Appendix O, paragraph 62, Table 14). This level of compliance is higher than 2004, when four of eight (50%) vessels discharged offal.

5.14 In relation to Conservation Measure 25-02, the level of reported compliance increased for all elements and overall, 12 of 25 vessels (48%) fully complied with all measures at all times throughout the Convention Area, compared to 33% last year (Annex 5, Appendix O, Tables 1 and 12; WG-FSA-05/9 Rev. 2, Table 1). Some vessels failed to comply by small margins, and the Scientific Committee re-emphasised that vessels should be advised to exceed the standards to prevent compliance failure (Annex 5, Appendix O, paragraph 61).

5.15 The Scientific Committee noted some cases of potential non-compliance were corrected following a dialogue between the Secretariat and technical coordinators of national observer programs. The Scientific Committee encouraged such dialogue in that it may avoid the erroneous interpretation of ambiguous reporting leading to a misrepresentation of the level of compliance by individual vessels (Annex 5, Appendix O, paragraphs 45, 55 and 56).

Research pertaining to the revision of Conservation Measures 24-02 and 25-02 and related matters

5.16 The Scientific Committee, recollecting previous Commission recommendations (CCAMLR-XX, paragraph 6.26), endorsed a proposal to develop improved Spanish longline mitigation measures (WG-FSA-05/12). The stepwise research plan (Annex 5, Appendix O, paragraphs 68 to 70), with initial tests outside the Convention Area in fisheries where Convention Area seabirds range, was endorsed, including future tests in the Convention Area (Annex 5, Appendix O, paragraph 71).

5.17 With respect to future improvements to Conservation Measure 25-02, the Scientific Committee recommended:

- (i) routine collection of longline sink rate data for a wide range of line-weighting scenarios including information on vessel setting speed and aerial extent of streamer line (Annex 5, Appendix O, paragraphs 72 to 76 and 93);
- (ii) collection of data at least every seven days of streamer line characteristics, including streamer line aerial extent; the height of streamer line at the stern; the length of streamer lines; and the number, spacing and length of individual branched streamers. These data should be reported on a diagram-based form to be developed by the Secretariat. Where sink rate data collection is required according to Conservation Measure 24-02, paragraph B2(ii), streamer line data are to be collected in the course of sink rate data collection (Annex 5, Appendix O, paragraphs 77 to 79);
- (iii) appropriate experiments on the design features of streamer lines with a view to being able to recommend refinements to the streamer line requirements (Annex 5, Appendix O, paragraph 80);
- (iv) development of effective haul scaring devices for use throughout the Convention Area (Annex 5, Appendix O, paragraph 84);
- (v) haul mitigation devices, such as the bird-excluder device, should be encouraged in all CCAMLR areas regardless of risk status to reduce the large proportion of bird captures during line hauling (Annex 5, Appendix O, paragraphs 85 and 86).

5.18 With respect to the Japanese proposal for the *Shinsei Maru* bottom-line system (WG-FSA-05/26), the Scientific Committee: (i) recognised the potential for the fishing method to minimise exposure of baited hooks to seabirds during setting operations and therefore supported the proposal; (ii) recommended that Conservation Measures 24-02 and 25-02 be applied to this novel fishing system (Annex 5, Appendix O, paragraph 81); and (iii) recommended that the fishery observer assigned to this vessel describe how the gear is deployed and retrieved with special attention to gear and seabird behaviour during the haul and set, as this would enable understanding the performance of this fishing gear and its appropriateness for continued use in the Convention Area (Annex 5, Appendix O, paragraphs 81 and 83).

5.19 In response to a Commission request (CCAMLR-XXIII, paragraph 10.24), the Scientific Committee reviewed available data on the maximum length of longlines used in the

Convention Area with respect to Conservation Measure 24-02 and longline sink rate testing prior to entering the Convention Area (Annex 5, Appendix O, paragraph 87). The Scientific Committee recommended that the requirement for line sink rate testing prior to entering the Convention Area should be changed from the current requirement to test the maximum length of longline to that of testing a specific minimum length of 6 000 m for auto longline system vessels and 16 000 m for Spanish longline system vessels (Annex 5, Appendix O, paragraph 89). Specific text for the revision of Conservation Measure 24-02 is contained in Annex 5, Appendix O, paragraph 95.

5.20 With respect to future revisions of Conservation Measures 24-02 and 25-02 for the auto longline system, the Scientific Committee noted that mandatory line-weighting prescriptions for autoline vessels were no longer considered appropriate due to the rapid adoption of IWLs and the line sink rate testing regime (Annex 5, Appendix O, paragraph 91).

5.21 Although no additional information on the specification of IWLs had been provided, and a revision of Conservation Measure 25-02 at this time would be premature, the Scientific Committee agreed that IWLs should continue to be endorsed as a viable line weighting alternative (Annex 5, Appendix O, paragraphs 90 and 92) and that research be undertaken on IWLs with the intention of combining Conservation Measures 24-02 and 25-02 if possible (Annex 5, Appendix O, paragraph 93).

Incidental mortality of seabirds during unregulated longline fishing in the Convention Area

5.22 The Scientific Committee noted that the overall estimated total potential seabird by-catch in the unregulated fishery for the whole Convention Area in 2004/05 was 4 415 (95% confidence interval range of 3 605 to 12 400) seabirds (SC-CAMLR-XXIV/BG/27; Annex 5, Appendix O, paragraph 101, Table 18).

5.23 In comparison with estimates for previous years, calculated in identical fashion, the value for 2004/05 is similar to the value estimated for 2003/04 (SC-CAMLR-XXIII/BG/23). These are the lowest reported values since estimates started in 1996 (Annex 5, Appendix O, paragraph 102).

5.24 The Scientific Committee reiterated its conclusions of recent years that even these levels of IUU incidental mortality of seabirds were of substantial concern and likely unsustainable for some of the populations concerned (Annex 5, Appendix O, paragraph 105). The Commission was encouraged to continue to take action in respect of incidental mortality of seabirds caused by IUU fishing (Annex 5, Appendix O, paragraph 106).

Incidental mortalities of seabirds during longline fishing outside the Convention Area

5.25 The Scientific Committee noted that new data on the incidental mortality of seabirds outside the Convention Area relevant to fisheries and/or seabirds within the Convention Area had been presented by Brazil (Annex 5, Appendix O, paragraph 107). The Scientific

Committee welcomed the progress on the implementation of mitigation measures in Brazil (Annex 5, Appendix O, paragraph 109) and encouraged reporting of new information in 2006.

Research into the status and distribution of seabirds

5.26 The Scientific Committee noted new data contributions from Brazil, Australia and BirdLife International (Annex 5, Appendix O, paragraphs 112, 113 and 118) and endorsed the subsequent revisions of the spatial risk assessments for CCAMLR subareas on the distribution of albatrosses and petrels vulnerable to fisheries interactions (SC-CAMLR-XXIV/BG/26). The Scientific Committee requested that France submit a report on its Crozet and Kerguelen Islands petrel population study when available (Annex 5, Appendix O, paragraph 130).

5.27 The Scientific Committee requested holders of new information on Procellariiform distribution to submit these to the BirdLife International global database initiative for application to fisheries management initiatives (Annex 5, Appendix O, paragraph 119) and that BirdLife International provide an analysis of the summary data to the Secretariat on distribution of Southern Ocean seabirds from its tracking database at approximately three-year intervals, or when accumulation of data warrants (Annex 5, Appendix O, paragraph 123).

5.28 The Scientific Committee welcomed the ACAP observer; it noted the preliminary report from ACAP on albatross and petrel populations protected under ACAP, which includes all Procellariiform seabirds occurring in the Convention Area (Annex 5, Appendix O, paragraphs 131 to 140). The Scientific Committee endorsed the advice that such information is best compiled and reviewed by ACAP. The Scientific Committee recommended that, to avoid duplication, ACAP could be the single repository for these data and the Secretariat should request the submission of summary documents on albatross and petrel population status from ACAP annually, or as appropriate (Annex 5, Appendix O, paragraph 141).

International and national initiatives relating to incidental mortality of seabirds in relation to longline fishing

5.29 The Scientific Committee noted reports on current international initiatives under the auspices of:

- (i) ACAP – items of particular relevance to CCAMLR (Annex 5, Appendix O, paragraph 145);
- (ii) FAO (NPOA-Seabirds) – noting the near completion of plans by Brazil and Chile (Annex 5, Appendix O, paragraphs 147 and 149);
- (iii) RFMOs – responses received to CCAMLR Resolution 22/XXIII by CCSBT, IATTC and ICCAT; initial progress with IOTC, ICCAT and WCPFC (Annex 5, Appendix O, paragraphs 155 to 167);

- (iv) NGOs – a new BirdLife International initiative was noted (Annex 5, Appendix O, paragraph 154) and a Southern Seabirds Solution fisher exchange between New Zealand and Chile (Annex 5, Appendix O, paragraphs 152 and 153);
- (v) a workshop resulting in recommendations for best-practice data collection on protected species in longline fisheries at the Fourth International Fisheries Observer Conference was noted (Annex 5, Appendix O, paragraphs 150 and 151).

5.30 The Scientific Committee noted papers tabled at CCSBT's Fifth Meeting of the ERS WG and subsequently provided to the Secretariat. Data from the RTMP observer program of the Japanese southern bluefin tuna longline fishery estimates the annual incidental takes of seabirds for the 2001 and 2002 fishing seasons at 6 000 to 9 000 birds per year and suggests these levels have been stable since 1995. Species composition sampling indicates approximately 75% of the species taken were albatrosses and 20% petrels, most of which breed in the Convention Area (Annex 5, Appendix O, paragraphs 168 to 173).

5.31 Noting that the Japanese southern bluefin tuna fleet probably represents about two-thirds of the longline fishing effort in the overall CCSBT fishery, the total annual mortality of seabirds could approach, or even exceed, 13 500 seabirds, including about 10 000 albatrosses, the Scientific Committee expressed substantial concern and re-emphasised a need for effective mitigation, its evaluation, and a more extensive and detailed program of data collection by observers (Annex 5, Appendix O, paragraphs 175 and 176).

5.32 The Scientific Committee endorsed the request to Members of CCAMLR, especially those also members of the participating RFMOs, to support a thorough review of by-catch-related initiatives and requirements at the proposed joint meeting of the secretariats of the tuna RFMOs and their members (Annex 5, Appendix O, paragraphs 177 and 178).

Incidental mortality of seabirds in relation to new and exploratory fisheries

5.33 The Scientific Committee noted that:

- (i) twenty-five of the 35 applications for exploratory longline fisheries for 2003/04 were undertaken (Annex 5, Appendix O, paragraph 184). No incidental mortality of seabirds was observed in fisheries in Subareas 48.6, 88.1 and 88.2 and Divisions 58.4.2, 58.4.3a and 58.4.3b. Two seabird mortalities and one bird released alive were observed in Division 58.4.1 (Annex 5, Appendix O, paragraph 185);
- (ii) the assessment of potential risk of interactions between seabirds and longline fisheries for all statistical areas in the Convention Area was reviewed, revised and provided as advice to the Scientific Committee and Commission as SC-CAMLR-XXIV/BG/26. There were seven changes to levels of risk this year (Annex 5, Appendix O, paragraphs 183 and 186);
- (iii) the 39 proposals by 12 Members for exploratory fisheries in seven subareas/divisions of the Convention Area in 2005/06 were addressed in relation to the

advice in SC-CAMLR-XXIV/BG/26, Figure 1 and Table 19. The results, summarised in Annex 5, Appendix O, paragraph 190, involve two categories: those that provided sufficient information and were assessed as conforming with advice relating to incidental mortality of seabirds (Annex 5, Appendix O, paragraph 190(i)); and those that contained insufficient information to determine whether they conformed with advice relating to incidental mortality of seabirds (paragraph 190(ii)). The potential inconsistencies in the 10 proposals in this category were resolved at the meeting; all are now in conformity with advice relating to incidental mortality of seabirds;

(iv) issues relating to:

- (a) exemptions from setting longlines at night;
- (b) exemptions in respect of closed seasons;
- (c) maintaining maximum levels for the incidental mortality of seabirds as in the 41 series conservation measures, with reversion to the provisions of Conservation Measure 25-02 when these are reached;
- (d) including reference to the definition of birds caught in all relevant conservation measures;

are addressed in SC-CAMLR-XXIV/BG/26 and Annex 5, Appendix O, paragraphs 194 and 195.

5.34 The Scientific Committee recommended the Commission request that Members take greater care in future submissions to ensure that the intent to comply with relevant seabird by-catch measures was clear (Annex 5, Appendix O, paragraph 192).

5.35 Prof. Moreno and Dr Marschoff noted that the current system of notification, and the requirement for a separate notification for each subarea or division, at times caused confusion. They agreed that a checklist would help with future notifications.

5.36 The Scientific Committee recommended that to assist in the review of notifications for new and exploratory fisheries in future years, a checklist be developed by the Secretariat for Members to complete when submitting notifications (Annex 5, Appendix O, paragraph 193).

Interactions involving marine mammals and longline fishery operations

5.37 The Scientific Committee noted that three southern elephant seal mortalities were reported in the toothfish fishery in Division 58.5.2 (Annex 5, Appendix O, paragraph 196). Two Antarctic fur seals entangled in a longline in the Subarea 48.3 toothfish fishery were both released alive (Annex 5, Appendix O, paragraph 197).

Interactions involving seabirds and marine mammals and trawl finfish fishery operations

5.38 The Scientific Committee noted that:

- (i) eleven seabirds were observed killed in the Subarea 48.3 icefish fishery and another 14 released alive and uninjured (Annex 5, Appendix O, Table 16), an order of magnitude decrease in the rate for this subarea compared to previous years (0.04 birds per tow in 2005 and 0.37 and 0.20 birds per tow in 2004 and 2003 respectively (Annex 5, Appendix O, paragraph 201, Table 17);
- (ii) eight seabirds were observed killed in the Division 58.5.2 icefish/toothfish fishery, with the rate increasing from zero in 2004 and 0.005 birds per tow in 2003 to 0.01 birds per tow in 2005 (Annex 5, Appendix O, paragraph 202);
- (iii) the reduction in seabird mortality in the icefish fishery in Subarea 48.3 could be due to a combination of reduced seabird abundance, associated with the reduction in icefish catches, and the continued adoption of mitigation measures, but insufficient data were available to investigate this further (Annex 5, Appendix O, paragraphs 204 to 206);
- (iv) binding the net with sisal string is a potentially effective and easily implemented mitigation measure for the icefish trawl fleet (Annex 5, Appendix O, paragraphs 207 and 208);
- (v) one Antarctic fur seal was caught and released alive in the toothfish trawl fishery in Division 58.5.2 (Annex 5, Appendix O, paragraph 216).

Interactions involving marine mammals and seabirds and krill fishing operations in 2004/05

5.39 The Scientific Committee noted that:

- (i) in Subareas 48.2 and 48.3 one incidental mortality of a Cape petrel was recorded and one Antarctic fulmar was caught on a warp splice and released uninjured. Information from the report of the krill fishery scientific observer from the in Subarea 48.3 included anecdotal records of seabird collisions with trawl warps during hauling (Annex 5, Appendix O, paragraph 209);
- (ii) in Area 48, 95 Antarctic fur seals were observed caught during krill fishing operations (WG-FSA-05/8, Table 4), of which 74 were released alive, compared to 156 of which 12 were released alive in 2004 (Annex 5, Appendix O, paragraph 217);
- (iii) the observer coverage was not sufficient to extrapolate the total Antarctic fur seal mortality in the krill fishery (Annex 5, Appendix O, paragraphs 223 and 224).

5.40 Dr D. Agnew (UK) sought clarification as to why extrapolation of total Antarctic fur seal mortality in the krill fishery could not be undertaken. Mr Smith, as ad hoc WG-IMAF Co-Convener, noted that although there had been significant observer coverage in Subarea 48.3 over the last two years, coverage levels were insufficient for the extrapolation in most areas of the fishery; a further problem was that the total effort in the fleet was not available on a tow-by-tow basis.

5.41 The Scientific Committee recollected its advice from last year that:

- (i) until such time as marine mammal mitigation measures specific to this fishery could be incorporated into the relevant conservation measures, every vessel fishing for krill should employ a device for excluding seals or facilitating their escape from the trawl net (Annex 5, Appendix O, paragraphs 218 to 222(i)).
- (ii) observers on krill vessels collecting reliable data on seal entrapment and on the effectiveness of devices to mitigate this (SC-CAMLR-XXIII, paragraph 5.37) should allow a very substantial resolution of the problem.

5.42 The Scientific Committee agreed that for scientific purposes the minimum requirement would be to have observations from each vessel in the fishery to assess the type and efficacy of the mitigation measures employed on a vessel-by-vessel basis. This would also provide an opportunity to collect information on the rate of trawl warp strikes by seabirds in this fishery (Annex 5, Appendix O, paragraphs 209, 222(ii), 224 and 225).

5.43 In considering the recommendation of the Working Group for 100% observer coverage on krill trawl vessels to obtain reliable data on incidental mortality and on the effectiveness associated with mitigation devices:

- (i) Prof. Beddington noted that the conservation status of some of the species involved does not support the notion that 100% observer coverage is required, however, there were other reasons (e.g. quantifying fish by-catch and biological sampling of the target species) for 100% observer coverage in this fishery;
- (ii) Dr Naganobu noted that Japan continued to have concerns over the cost of this recommendation, issues associated with the proprietary nature of the data, and considered that these data could be effectively collected by bilateral observer arrangements outside the CCAMLR Scheme of International Scientific Observation;
- (iii) Dr Holt noted that there did not appear to be disagreement over the scientific need for 100% observer coverage of the krill fishery, bilateral observer coverage had not provided the relevant data to date and that now an inability to resolve political and practical implementation issues was delaying progress this matter.

5.44 Mr Smith, as ad hoc WG-IMAF Co-Convener, clarified that the recommendation for 100% observer coverage had been made on the basis that an assessment of incidental mortality of seabirds and marine mammals, and the efficacy of mitigation measures utilised in the krill fishery, is required. Without comprehensive observer data such an assessment could not be undertaken.

5.45 The Scientific Committee endorsed advice to develop warp strike data collection protocols during the intersessional period (Annex 5, Appendix O, paragraphs 211 to 214) and that at future meetings the ad hoc WG-IMAF assessments of incidental mortality of seabirds and marine mammals in the icefish, toothfish and krill trawl fisheries be undertaken collectively (Annex 5, Appendix O, paragraph 215).

Other business

5.46 The Scientific Committee reviewed Spain's proposal (SC-CAMLR-XXIV/8) for testing new streamer line designs (Annex 5, Appendix O, paragraphs 231 to 234) and made three general recommendations on the testing of seabird mitigation measures:

- (i) that further testing of modifications to mitigation methods, which would require exemption from the provisions of current conservation measures, should require prior provision to CCAMLR of full details of the proposed research and experiments (Annex 5, Appendix O, paragraph 235);
- (ii) that, to avoid confusion, the Commission confirm that the role of scientific observers does not include the ability to agree to fishing-related practices that are in contravention of CCAMLR conservation measures without relevant prior exemptions having been agreed by CCAMLR (Annex 5, Appendix O, paragraph 235(i));
- (iii) that full proposals for any such testing must be notified to WG-FSA in advance of the fishing season in which the trials are proposed to be conducted (Annex 5, Appendix O, paragraph 235(ii));

and three specific recommendations on the proposal (Annex 5, Appendix O, paragraph 236):

- (iv) it was not feasible or appropriate for ad hoc WG-IMAF to devise specific experimental protocols for applicants;
- (v) ad hoc WG-IMAF could comment on the content and design of experiments proposed by applicants, provided these were available two weeks in advance of the start of its meeting so that there was sufficient time for appropriate expert consultation;
- (vi) consequently it was not recommended that a test of the streamer line designs outlined in Annex 1 of SC-CAMLR-XXIV/8 proceed in the 2005/06 fishing season.

5.47 The Scientific Committee endorsed comments on the proposal should the applicants wish to resubmit it next year (Annex 5, Appendix O, paragraphs 237 and 238).

5.48 Mr López Abellán noted that Spain's proposal sought to encourage discussion of these issues, that fishers need an opportunity to innovate with new mitigation ideas and that it was not clear at present how to proceed with such research.

5.49 Ms Rivera, as ad hoc WG-IMAF Co-Convener, agreed that the proposal had highlighted the need for a clear process for experimenting with alternative designs of mitigation measures and recalled that such a process had existed in Conservation Measure 25-02 (2002). Recent proposals relating to line-weighting experiments (WG-FSA-05/12 for the Spanish longline system and WG-FSA-03/17 for IWL) may serve as a useful guide for future applications. These proposals called for testing in areas and at times of high risk to allow for definitive results. Ms Rivera reiterated the Scientific Committee's concern that halving the length of the streamer line, as suggested in SC-CAMLR-XXIV/8, was unlikely to ensure an optimal aerial coverage to prevent seabirds from accessing baited hooks.

5.50 The Scientific Committee agreed that clarification of the process for experimenting with alternative mitigation designs was important, and recommended that any future proposals for testing should conform with the advice contained in paragraphs 5.47 to 5.49 and within the constraints previously specified in Conservation Measure 25-02 (2002). The Scientific Committee noted that, subject to the Commission's confirmation of this advice, a revision of Conservation Measure 25-02 (2003) is not required at this time.

5.51 The Scientific Committee endorsed the advice that the UK proposal for a toothfish mark-recapture experiment in Subarea 48.4 (WG-FSA-05/57) conformed with the risk assessment in SC-CAMLR-XXIV/BG/26 in respect of avoidance of incidental mortality of seabirds (Annex 5, Appendix O, paragraphs 239 and 240).

Advice to the Commission

5.52 This section attempts to distinguish between general advice (which the Commission may wish to note and/or endorse) and specific advice which includes requests to the Commission for action.

General advice

5.53 The Commission was requested to note:

- (i) the continuing low levels and rates of incidental mortality of seabirds in regulated longline fisheries in most parts of the Convention Area in 2005 (paragraphs 5.2 and 5.3);
- (ii) that effort is required on mitigating incidental mortality of seabirds during the haul of longlines (paragraphs 5.4 and 5.9);
- (iii) levels of incidental mortality of seabirds in the French EEZs similar to last year's and continued efforts to improve mitigation effectiveness (paragraphs 5.5 to 5.10);
- (iv) assessment of implementation of relevant conservation measures, including improved performance for all elements (paragraphs 5.13 to 5.15);

- (v) enhanced collection of streamer line and line sink rate data to enable improvements to Conservation Measures 25-02 to be proposed (paragraphs 5.17(i) and (ii));
- (vi) that the adoption of IWLs and sink rate testing regimes is replacing the need for mandatory line-weighting prescriptions for autoline vessels (paragraph 5.20);
- (vii) estimates of potential seabird by-catch associated with IUU longline fishing in the Convention Area in 2005 and that these are the lowest values so far estimated (paragraphs 5.22 and 5.23);
- (viii) new data on mortality of seabirds from the Convention Area in adjacent regions provided by Brazil and the request for a report on new information in 2006 (paragraph 5.25);
- (ix) a request to France for a report on its Crozet and Kerguelen Islands petrel study when available (paragraph 5.26);
- (x) revisions of the spatial risk assessments for CCAMLR subareas on the distribution of albatrosses and petrels vulnerable to fisheries interactions (SC-CAMLR-XXIV/BG/26, paragraphs 5.26 and 5.33(ii));
- (xi) a request that BirdLife International provide the Secretariat with an analysis of summary data from its Procellariiform tracking database at approximately three-year intervals, or as warranted (paragraph 5.27);
- (xii) progress with national and international initiatives involving ACAP, FAO NPOA-Seabirds, RFMOs and initiatives developed by Southern Seabird Solutions and BirdLife International (paragraph 5.29);
- (xiii) concern with reported levels of CCAMLR Convention Area seabirds in CCSBT fisheries (paragraphs 5.30 and 5.31);
- (xiv) reduced levels of seabird and marine mammal incidental mortality in trawl fisheries in the Convention Area in 2005, notably of seabirds in the icefish fishery in Subarea 48.3 (paragraph 5.38) and of fur seals in krill fisheries in Area 48 (paragraph 5.39);
- (xv) a potentially effective and easily implemented mitigation measure for reducing seabird mortalities in the icefish trawl fleet (paragraph 5.38(iv));
- (xvi) observer coverage is not sufficient in the krill fishery to extrapolate the total Antarctic fur seal mortality (paragraph 5.39(iii));
- (xvii) the development of a data collection protocol during the intersessional period for interactions of seabirds with trawl warps (paragraph 5.45);
- (xviii) advice that a test of streamer line designs as proposed by Spain (SC-CAMLR-XXIV/8) not proceed in the 2005/06 fishing season (paragraph 5.46(vi)).

5.54 The Commission was requested to endorse:

- (i) recommendations for improvements to data collection protocols, continued 100% observer coverage, consideration of the proportion of hooks observed, and an analysis of the 2005 data in the French EEZ (paragraph 5.11);
- (ii) the improvement of dialogue between technical coordinators and the Secretariat to confirm compliance-related information relevant to the work of ad hoc WG-IMAF (paragraph 5.15);
- (iii) the proposal to develop improved Spanish-system line weighting regimes (paragraph 5.16);
- (iv) development of effective haul scaring devices (paragraphs 5.17(iv) and (v));
- (v) the recommendation that Conservation Measures 24-02 and 25-02 apply to the proposed *Shinsei Maru* bottom-line system and for observer-collected information on seabird behaviour at the set and haul of the gear (paragraph 5.18);
- (vi) the recommendation that IWLs continue to be endorsed as a viable line weighting alternative and that IWL research be undertaken with the intention of combining Conservation Measures 24-02 and 25-02 (paragraph 5.21);
- (vii) that ACAP should be the single repository for data on albatross and petrel population status and trends and that summary documents be regularly submitted to the Secretariat (paragraph 5.28);
- (viii) the recommendation that a checklist be developed by the Secretariat to assist Members in their applications for new and exploratory fisheries (paragraphs 5.34 and 5.36);
- (ix) the recommendation for all vessels to use seal-excluder devices in krill trawl fisheries (paragraph 5.41(i));
- (x) confirm that the role of observers does not include the ability to agree to fishing-related practices in contravention of CCAMLR conservation measures (paragraph 5.46(ii));
- (xi) the recommendation that experimentation with alternative mitigation designs was important, and any future proposals for testing should conform with the advice contained in paragraphs 5.46 to 5.49 and the constraints previously specified in Conservation Measure 25-02 (2002) (paragraph 5.50);
- (xii) advice that the UK proposal for a toothfish mark-recapture experiment in Subarea 48.4 conformed with the risk assessment of avoidance of incidental mortality of seabirds (paragraph 5.51).

Specific advice

5.55 The Commission was requested to consider taking action in respect of:

- (i) suggested revisions to Conservation Measure 24-02 (paragraph 5.19);
- (ii) continued action in respect of seabird mortality caused by IUU fishing (paragraph 5.24);
- (iii) a request to Members to support a review of by-catch-related initiatives and requirements at the proposed meeting of tuna RFMOs in early 2007 (paragraph 5.32), particularly given the reported high levels of seabird incidental mortality in the CCSBT fishery, noting that most of these are likely to be Convention Area seabirds (paragraphs 5.30 and 5.31);
- (iv) advice in relation to proposals for new and exploratory longline fisheries in the Convention Area in 2005 (paragraph 5.33).