CCAMLR-VIII

COMMISSION FOR THE CONSERVATION OF
ANTARCTIC MARINE LIVING RESOURCES

REPORT OF THE EIGHTH MEETING OF THE COMMISSION

HOBART, AUSTRALIA
6 - 17 NOVEMBER, 1989

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Abstract

This document presents the adopted record of the Eighth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources held in Hobart, Australia from 6 to 17 November 1989. Major topics discussed at this meeting include: assessment and avoidance of incidental mortality of Antarctic marine living resources, review of the report of the Scientific Committee, review of existing Conservation Measures and adoption of new Conservation Measures, establishment of a system of observation and inspection, compliance with Conservation Measures in force, development of a conservation strategy for Antarctic marine living resources, and cooperation with other international organisations including the Antarctic Treaty System. The reports of the Standing Committee on Administration and Finance, the Working Group for the Development of Approaches to Conservation of Antarctic Marine Living Resources and the Standing Committee on Observation and Inspection are appended.

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REPORT OF THE EIGHTH MEETING OF THE COMMISSION

OPENING OF THE MEETING

1. The Eighth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources was held in Hobart, Tasmania, Australia from 6 to 17 November 1989 under the Chairmanship of Ambassador M.H.C. Côrtes (Brazil).

2. All Members of the Commission were represented: Argentina, Australia, Belgium, Brazil, Chile, European Economic Community, France, German Democratic Republic, Federal Republic of Germany, India, Japan, Republic of Korea, New Zealand, Norway, Poland, South Africa, Spain, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland and United States of America.

3. Following established practice, acceding states were invited to attend as observers and Italy, Peru, Sweden and Uruguay attended in this capacity.

4. The Food and Agriculture Organization of the United Nations (FAO), the International Union for the Conservation of Nature and Natural Resources (IUCN), the Scientific Committee on Antarctic Research (SCAR), the Scientific Committee on Oceanic Research (SCOR) and the Antarctic and Southern Ocean Coalition (ASOC) were invited to attend the meeting as observers. SCAR and ASOC attended. A list of participants is at Annex A.

5. The Commission noted that Finland, Italy and Peru had acceded to the Convention since its last meeting and that Sweden had notified Australia, as Depositary, of its wish to participate in the work of the Commission.

6. With an amendment changing item 3 (iv) to 'Executive Secretary (Term of Office)', the Provisional Agenda was adopted (Annex B).

7. The Chairman welcomed participants and observers and reported on intersessional activities. He drew attention to matters referred to the Scientific Committee for advice during the last meeting of the Commission (CCAMLR-VII, paragraphs 40, 108, 112 to 116, 118, 140, 141 and 146). The Commission assigned agenda item 3 to the Standing Committee on Administration and Finance (SCAF), item 7 to the Working Group on the Development of Approaches to Conservation of Antarctic Marine Living Resources (WG-DAC) and items 9 and 10 to the Standing Committee on

Observation and Inspection (SCOI). The Chairman adjourned the meeting until Monday, 13 November 1989.

8. A list of documents submitted to the meeting is at Annex C.

FINANCE AND ADMINISTRATION

9. The following sub-items of this agenda item were referred to the Standing Committee on Administration and Finance (SCAF) for consideration:

(i) Examination of Audited Financial Statements for 1988
(ii) Review of the Budget for 1989
(iii) Draft Budget for 1990 and Forecast Budget for 1991
(iv) Executive Secretary (Term of Appointment)
(v) Review of Levels of Professional Staff
(vi) Translation of Documents.

10. The Commission received the Executive Secretary's Report of the Meeting of SCAF (Annex D) and took note of the discussion of items not requiring decisions.

Examination of the Audited Financial Statements for 1988

11. The Commission accepted the Financial Statements for 1988.

Review of Budget for 1989

12. The Commission noted the forecast results of income and expenditure for 1989. It was agreed that Members should make every effort to pay their contributions as close as possible to the due date (1 January) and in any case before the deadline of 31 May.

Budget for 1990

13. The Commission noted the changes to the Draft Budget presented in CCAMLR-VII/5 resulting from discussions and recommendations of the Scientific Committee. The Commission approved the Budget for 1990 as contained in the Report of the SCAF Meeting (Annex D).

Executive Secretary (Term of Appointment)

14. The Commission agreed that Dr Powell be re-appointed as executive Secretary from 1 July 1990 under the terms and conditions set down in CCAMLR-I, paragraph 26 and in accordance with Article XVII of the Convention.

ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY OF ANTARCTIC MARINE LIVING RESOURCES

15. The Commission, in considering this item, had reports from Argentina, Australia, Japan, the Republic of Korea, the USSR, the United Kingdom and the United States describing steps that had been taken to assess and avoid mortality of Antarctic marine living resources caused by entanglement in and ingestion of persistent marine debris of human origin and by incidental catch during commercial fishery operations. The Commission also had the responses to the request (CCAMLR-VII, paragraph 40) for information and advice which it had asked the Chairman of the Scientific Committee to seek from the SCAR Bird Biology Sub-Committee and the SCAR Group of Specialists on Seals. In this regard, the Commission noted and considered paragraphs 6.7, 6.8 and 6.9 of SC-CAMLR-VIII.

16. During discussion of matters under this agenda item, a number of Members, in addition to those noted in the preceding paragraph, described steps that they have taken to assess and avoid incidental mortality of Antarctic marine living resources.

Marine Debris

17. Australia reported that it had conducted systematic surveys of the coasts of Heard Island in 1986/87 and 1987/88, and of Macquarie Island in 1988 and 1989, to determine the types, quantities, rates of accumulation, and possible sources of marine debris washing up on the islands. There was a high proportion of plastic in the debris found, including plastic bottles, plastic packing

straps, net fragments, and buoys and ropes from bottom trawl and longline fisheries. The country or area of origin (manufacturer) of some items was determined from writing on or other characteristics of these items. In this regard, it was noted that while the country of origin could be determined in some cases, this did not necessarily mean that nationals or vessels of the country of origin were responsible for the loss or discard of the item at sea.

18. The United Kingdom reported finding 208 fur seals entangled in marine debris of human origin on Bird Island, South Georgia, during the 1988/89 pup rearing season. This represents 0.5 to 1.0% of the total population and suggests that 5 000 to 10 000 animals could be affected.

19. The United States reported that two adult male fur seals and two nearly weaned fur seal pups were observed entangled in marine debris at Seal Island, Elephant Island, and at Cape Shirreff, Livingstone Island, respectively, during studies conducted in 1989. During discussion of this issue, Chile noted that its scientists had observed incidents of entanglement or potential entanglement (e.g. plastic debris in birds' nests) involving one prion, one chinstrap penguin, two kelp gulls, and two fur seals at Cape Shirreff. Chile also noted that photographs of these incidents were being prepared for publication and that 90 kilograms of debris of human origin had been removed from Cape Shirreff.

20. Argentina and the United States reported one efforts to assess and minimise the environmental impact of oil released into the marine environment following the wreck of the *Bahia Paraiso* near Palmer Station on 28 January 1989. Argentina noted the lack of knowledge concerning the effects of hydrocarbons on coastal ecosystems and indicated its interest in initiating a cooperative research program on this issue. It also noted and offered to make available, copies of a report on the *Bahia Paraiso* incident which it had distributed at the preparatory meeting for the XVth Antarctic Treaty Consultative Meeting.

21. There were no reports of at-sea sightings of potentially hazardous marine debris or of animals entangled in such debris.

Incidental Catch

22. As noted in paragraph 42 of CCAMLR-V, it has been agreed that 'Members would take such steps as necessary to ensure that operators of vessels engaged in fishing and related operations in the Convention Area maintain a record and report the number, species and, where appropriate, the age or size, sex and reproductive status, of any birds and marine mammals taken incidentally during fishing operations.'

23. In this regard, the United Kingdom reported that during a joint UK/Polish krill survey carried out in 1989, black-browed albatrosses and white-chinned petrels were frequently seen diving around the net as it came to the surface and that three white-chinned petrels were seen entangled and killed in one of the 55 net hauls observed. The Commission noted that this was but a small proportion of the total fishing effort in the Convention Area and might indicate that there is substantial incidental mortality which is not being reported.

24. The Commission also noted that a longline fishery was conducted in the Convention Area for the first time during the 1988/89 fishing season and that experience in other areas indicates that there may be a substantial incidental mortality of seabirds associated with such fisheries. In this context, Japan noted that, in cooperation with Australia, procedures had been developed and were being used on a trial basis to minimise the incidental take of albatrosses in its tuna longline fishery in the Southwest Pacific.

25. The Commission called upon its Members to review measures taken to date and take such additional measures as may be necessary to ensure that operators of vessels engaged in fishing and related operations in the Convention Area maintain records and report incidents of incidental catch of marine mammals and birds as specified in paragraph 42 of CCAMLR-V. It requested that the Scientific Committee consider and provide advice on steps that could be taken to better assess and minimise the incidental take of marine mammals and seabirds during commercial and exploratory fishing operations.

26. On a related point, the United States recalled the possibility, noted in paragraph 43 of CCAMLR-V, that seabirds and marine mammals may be more vulnerable to incidental capture in gill nets than in other types of fishing gear. It requested and received confirmation of its understanding that gill nets currently are not being used nor are they planned to be used by Members in the Convention Area.

27. In this regard, Japan noted its view that there are no living resources in the Convention Area that could be caught more effectively with gill nets than other fishing gear.

SCAR Response to Request for Advice on Monitoring

28. At its Seventh Meeting, the Commission requested that the Chairman of the Scientific Committee consult and request (SC-CAMLR-VII, paragraph 40):

‘(a) the SCAR Bird Biology Sub-Committee to:

(i) provide a summary of existing information on the incidence of ingestion of plastics by marine birds in the Antarctic; and

(ii) make suggestions as to how the levels and effects of such pollution could be monitored.

(b) the SCAR Group of Specialists on Seals to advise the Commission on:

(i) the conduct (including data collecting and reporting formats) of surveys to determine the incidence, causes and effects of entanglement of marine mammals; and

(ii) improvements to the existing system of CCAMLR for reporting incidental mortality associated with fishing operations, in order more precisely to determine the incidence, causes and effects of mortality.'

The Chairman of the Scientific Committee subsequently corresponded with the Conveners of the two SCAR Groups.

29. The response from the Convener of the Bird Biology Sub-Committee:

(a) indicated that the incidence of plastic ingestion by Antarctic and sub-Antarctic seabirds within the CCAMLR Convention Area is widespread geographically and in the number of species affected and includes a high proportion of individuals of a number of species, especially burrowing petrels;

(b) outlined ways whereby the levels of ingestion might be monitored; and

(c) called attention to the need for carefully designed field and laboratory studies to discern the effects of any plastic ingested by seabirds.

30. The Convener of the SCAR Group of Specialists on Seals advised that it would be desirable to:

(a) develop standardised formats for reporting the incidental catch of marine mammals during fishing operations and observations of marine mammals found entangled in lost and discarded fishing gear and other marine debris;

(b) establish standard, quantitative measures of the types and amounts of marine debris washing ashore on beaches in the Convention Area and the incidence of marine mammals observed entangled in such debris; and

(c) expedite establishment of an observer program to gather information on the number, species, age sex, stomach contents and other characteristics of marine mammals caught incidentally during commercial fishing operations.

Regulations of Vessel Source Pollution Under
Annex V of the MARPOL Convention

32. Annex V of the MARPOL Convention prohibits the at-sea disposal of 'all plastics, including but not limited to synthetic ropes, synthetic fishing gear and plastic garbage bags', and requires commercial fishing fleets to take 'reasonable precautions' to prevent the accidental loss of synthetic fishing nets. In addition, the Annex places certain restrictions on dumping and disposal of other types of garbage from vessels at sea.

33. It was agreed at CCAMLR-VII that those Members who had not already done so would consider and take such steps as may be appropriate to accept or ratify Annex V of the MARPOL Convention. During consideration of this matter at CCAMLR-VII, it was noted that:

- Belgium, France, the German Democratic Republic, the Federal Republic of Germany, Japan, Norway, Poland, the USSR, the United Kingdom and the United States had accepted or ratified the Annex;

- three acceding states, Greece, Sweden and Uruguay, also had accepted or ratified the Annex;

- South Africa and Peru had indicated their intent to ratify the Annex;

- Chile informed the Commission that it was considering adhesion; and

- Argentina, Australia and New Zealand advised that their ratification procedures were in train.

It was noted that the XVth Antarctic Treaty Consultative Meeting, held recently in Paris, had adopted recommendations concerning waste disposal and measures to minimise marine pollution in

the Antarctic Treaty Area including possible designation of the Treaty Area as a Special Area under MARPOL Annex V.

34. In this context, the Commission noted the importance of continuing efforts by Argentina and the United States to assess the environmental impacts of the *Bahia Paraiso* oil spill, as well as the recommended actions to minimise the risk and impacts of such accidents.

35. The Commission agreed that those Members who have not already done so would consider and take such steps as appropriate to accept or ratify MARPOL Annex V. The Commission also agreed that Members should take such steps as appropriate to ensure that their nationals and vessels operating in the CCAMLR Convention Area comply with the provisions of the Annex.

Future Work

36. It was agreed that this item should be included on the agenda for subsequent annual meetings of the Commission and that, prior to such meetings, Members would advise the Executive Secretary of steps that have been or are being taken to implement the measures agreed to in paragraphs 40 to 43 of CCAMLR-V.

37. The Commission noted that all Members have not reported steps they have taken to assess and avoid incidental mortality. It called upon Members to review and take such steps as necessary to fully comply with the data collection and reporting measures set forth in paragraphs 40 to 43 of CCAMLR-V.

CONSIDERATION OF THE ESTABLISHMENT OF A STANDING COMMITTEE ON CONSERVATION MEASURES

38. The Commission discussed a proposal to establish a Standing Committee on Conservation Measures.

39. The proposal was to have a body which would review Conservation Measures in force, examine the Reports of the Scientific Committee, proposals from Members for conservation action and take account of any other factors, such as economic considerations in providing a report to the Commission.

40. Some delegations expressed the view that some improvement could be introduced to the work of the Commission with regard to the adoption of Conservation Measures. Other delegations questioned the usefulness of setting up a standing committee for this purpose.

REPORT OF THE SCIENTIFIC COMMITTEE

41. The Chairman of the Scientific Committee introduced the Report (SC-CAMLR-VIII) and drew attention to matters requiring special attention of the Commission.

42. The Commission noted that the Scientific Committee and its working groups, and especially the Working Group on Fish Stock Assessment (WG-FSA), had made numerous recommendations and requests and reported extensive discussions concerning acquisition of data and adoption of measures designed to further the conservation and management policies of the Commission. Discussion of topics that had a bearing on the formulation of specific Conservation Measures was deferred to agenda item 8.

Krill

43. The Commission noted that the Krill CPUE Workshop had successfully brought to conclusion, a study funded by the Commission and undertaken over the past three years.

44. The Commission endorsed decisions of the Scientific Committee that:

(a) the Working Group on Krill (WG-Krill) should hold an intersessional meeting during 1989/90 in order to develop its tasks further and in order to sustain the momentum achieved at its first meeting;

(b) fine-scale catch data should be reported for all of Subareas 48.1, 48.2 and 48.3. Collection of such data in other areas where commercial fishing is undertaken, should be encouraged;

(c) haul-by-haul catch and effort data including the relevant operational details should be collected and prepared pending discussion at the WG-Krill on specific analyses to be performed;

(d) the above analytical procedures should be conducted on a trial basis and reviewed after three years; and

(e) acoustic data should be used to better determine swarm size, number of swarms per unit area of concentration and inter-swarm distance within concentrations.

The Commission endorsed these recommendations noting that further examination of bridge log data would be undertaken at the next meeting of the WG-Krill.

45. The Commission endorsed the recommendation of the Scientific Committee to sample krill hauls to obtain length frequency data. As an interim measure, length samples of at least 50 krill from one haul per day per vessel should be taken by all commercial vessels. Where possible, more than one sample should be taken from each haul in order to provide estimates of variance. The standard length measurement to be used should be from the front of eye to the tip of the telson. Members are urged to report any difficulties experienced with the above sampling procedure as well as on the procedures they are currently using or intending to carry out with respect to sampling krill catch length distributions (e.g. using observers aboard single commercial vessels to record length frequencies from all catches in one area). As far as possible, Members are also urged to collect krill length frequency data from commercial and scientific catches in the same area.

46. The Commission noted that some Members of the Scientific Committee felt it was now appropriate for the Commission to consider the implications of imposing a precautionary limit on the krill catch in Subarea 48.3. It also noted that other Members of the Scientific Committee expressed doubts about this view.

47. It was emphasised in the Commission's discussion of this issue that there was insufficient scientific information about the effect of krill catches in Subarea 48.3 on dependent predators and its effect in taking young fish as a by-catch.

48. Two lines of argument were presented:

The first pointed to the following factors:

- the absence of information as to the effects of krill catches on predators and young fish;
- the indications that krill caught in Subarea 48.3 were not part of the spawning stock;
- the relatively small catches of krill taken when compared to the very large stock of krill.

49. The second line of argument was that the degree of uncertainty about the effect of krill catches, coupled with the possibility that a continuation of and an increase in fishing for krill in Subarea 48.3 might have serious long-term consequences for the krill fishery, meant that the Commission should consider the implications of possible limits on krill catches in that subarea. Such a consideration should include the following elements:

- the possible economic impact on states undertaking harvesting of krill and which may be contemplating an expansion of their involvement in the fishery;

- the implications that the fishing effort could be deployed to other areas of even greater scientific uncertainty;

- the nature and duration of the different kinds of limits that might be agreed.

50. It was suggested that the Commission should consider the above issues and ask the advice of the Scientific Committee on the following questions:

(a) What is the biomass and potential yield of krill in Subarea 48.3?

(b) What are the possible management measures, including limits, that might be necessary on krill catches in that subarea which would maintain ecological relationships with dependent and related populations, including:

(i) the protection of dependent predators; and
(ii) the protection of young and larval fish?

(c) If these questions cannot be answered, what new information is required and how soon could it be obtained?

Fish Resources

51. The Commission recalled its decision taken at the Fifth Meeting concerning Scientific Research Exemptions (CCAMLR-V, paragraph 60) repeated here for ease of reference:

'(c) any Member planning to use commercial fishing or fishery support vessels to conduct fishing for research purposes in closed areas or seasons, or likely to involve the catching of protected species or size classes, or the use of prohibited gear or fishing techniques, shall notify and provide the opportunity for other Members to review and

comment on their research plans. Except in unusual circumstances, plans for such research shall be provided to the Secretariat for distribution to Members at least six months in advance of the planned starting date.

(d) such plans for research fishing using commercial fishing or fishery support vessels shall include:

(i) a statement of the planned research objectives;

(ii) a description of when, where, and what activities are planned including the number and duration of hauls being planned;

(iii) the name(s) of the chief scientist(s) responsible for planning and coordinating the research, and the number of scientists and crew expected to be aboard the vessel(s); and

(iv) the name, type, size, registration number, and radio call sign of the vessel(s); and

(e) a summary of the results of such research fishing shall be provided to the Scientific Committee no later than 30 September of the split-year following completion of the cruise. A full report shall be provided as soon as possible.'

It also endorsed the following additional requirements recommended by the Scientific Committee:

(a) catches should be reported on a haul-by-haul basis to the Secretariat; and
(b) research vessel catches should be considered as part of TAC.

52. The Commission shared the Scientific Committee's concern over the development of a longline fishery in the Convention Area. The recommendation of the Scientific Committee requiring the submission of all past and current catch and effort data from this fishery was endorsed. It was noted that a format for submission of such data had been adopted and that the effort indices required are:

- Number and size of hooks on the line;
- The spacing of hooks on the line;
- The time the logline is set (soak time) and recovered;
- Fishing depth;
- Type of bait;

- Precise fishing location (i.e. position) as suitable sites often cover a very restricted area;

and that the following information would be included:

- Target species and catch;
- Discarded species and catch; and
- Incidental mortality, of seabirds and marine mammals.

53. The responses from the WG-FSA to questions raised by the Commission at the last meeting (CCAMLR-VII, paragraphs 114 to 116) were noted. With regard to the points raised by the Scientific Committee in relation to these responses, the Commission requested the USSR Delegation to submit information on its measures to minimise and assess the level of larval and young fish caught during krill fishing activities which were reported as having been in place for the last four years.

Squid

54. The Commission noted that exploratory fishing for squid had been undertaken by a Member in 1988/89 and that a non-member country had also made catches within the Convention Area. It was agreed that ways of obtaining data from non-member nations should be taken up by the Secretariat and then at the next meeting of the Commission.

55. The Commission agreed that fine-scale catch and effort data from squid fishing operations in the Convention Area should be submitted to the Commission. It was also suggested that the Secretariat should, in consultation with Members most experienced in the analysis of data and the mechanics of squid jigging operations, develop a format for reporting squid jigging catch and effort data.

Ecosystem Monitoring and Management

56. It was noted that the Working Group for the CCAMLR Ecosystem Monitoring Program (WG-CEMP) had revised the data collection section of all existing standard methods sheets in the CCAMLR Booklet 'Standard Methods for Monitoring Parameters of Predator Species' (SC-CAMLR-VIII, paragraph 5.9). The revised methods sheets will be circulated to Members by 1 December 1989. In order that these revised data collection methods can be utilised in CEMP filed studies during the 1989/90 austral summer, Members were requested to ensure that the revised methods are distributed to the scientists in their countries who are conducting CEMP studies.

57. The Commission agreed that once data submission protocols are completed, Members monitoring approved parameters of selected species at nominated sites using approved standard methods should submit these data to the Secretariat annually by 30 September. Where retrospective data, conforming to the same criteria, exist these should also be submitted as soon as possible.

58. The Scientific Committee had discussed the need for fine-scale krill data in connection with the Ecosystem Monitoring Program. The requirement for haul-by-haul data in CEMP Integrated Study Regions was taken into account by the Commission in endorsing the Scientific Committee's recommendations in paragraph 44 above.

59. The Commission supported the Scientific Committee's request for Members to synthesise data on population size, diet and energy budgets of predators in order to provide estimates of krill requirements of predators in Integrated Study Regions, at least during their breeding seasons (SC-CAMLR-VIII, Annex 7, paragraphs 91 and 92).

60. The Commission endorsed the decision of the Scientific Committee that the WG-CEMP should hold an intersessional meeting in 1990 in association with the meeting of the WG-Krill (SC-CAMLR-VIII, paragraph 5.46).

Registration and Protection of CEMP Land-Based Sites

61. Recognising that the results of long-term monitoring activities at CEMP land-based sites can be affected by certain forms of human interference, the Scientific Committee recommended that these sites receive statutory conservation protection as a matter of priority (SC-CAMLR-VII, paragraphs 5.19 and 5.20; SC-CAMLR-VIII, paragraph 5.5). The Commission did not have time to consider a detailed procedure for the proposal, registration and management of land-based CEMP sites and asked the Executive Secretary to prepare a paper for consideration at the next meeting.

Data Collection and Reporting

62. The Commission discussed the many references to data collection and reporting contained in the Report of the Scientific Committee and the Report of the Working Group on Fish Stock Assessment. It noted that some of the recommendations had been endorsed in dealing with particular species in particular areas. These are recorded in other sections of this report.

63. The following list includes other recommendations and requests of the Scientific Committee relating to data collection and reporting endorsed by the Commission:

(a) In order to avoid confusion, the Secretariat should take steps to ensure that the target species involved in the myctophids' fishery in Subarea 48.3 is identified in future reporting of catch statistics to the Commission.

(b) Current methods for the analysis of biomass survey data use areas of seabed within small geographical areas stratified by depth range. The strata currently used were obtained for a purpose slightly different from that of the WG-FSA. The procedure of defining strata should be re-assessed in the light of the Working Group's requirements. These should include CCAMLR fine-scale reporting areas and 50 m depth contours down to 500 m where possible.

(c) The WG-FSA noted that there were some instances where catch data currently available in the CCAMLR database were inconsistent with those available to, or held by, individual Members (e.g. SC-CAMLR-VIII, Annex 6, paragraph 66 (ii)). It was therefore recommended that Members should make every effort to ensure adequate validation of and consistency in data submitted to the Secretariat and to other organisations.

(d) Length compositions and age compositions from recent catches of *Notothenia rossii f*rom Subarea 48.3 should be submitted to the Commission.

(e) Concerning predation of *N. rossii* by *Arctocephalus gazella* (Antarctic fur seals), it was suggested that if the feeding habits of Antarctic fur seals were monitored, details of species and ages of fish prey consumed would be of interest to the WG-FSA. The SCAR Group of Specialists on Seals should be requested to provide advice on the most effective ways of obtaining quantitative information to address this problem.

(f) In view of the low level at which the stock of *N. rossii* in Subarea 48.3 has been for a number of years, its status needs to be carefully monitored. Biomass estimates and age/length keys from recent years are available from research vessels surveys. However, there is a lack of data from the commercial fishery. Although its annual catch has been comparatively small after the adoption of Conservation Measures by the Commission, biological information (length composition, age/length keys) should be collected and provided to assist in assessing the present status of the stock.

(g) Due to the catch restrictions likely to be imposed on other species in Subarea 48.3, *Notothenia squamifrons* may be of growing interest to the fishery in the near future. Information on length and age from historical and current commercial catches as well as biomass estimates from research vessel surveys are urgently needed to assess the status of this stock.

(h) To provide improved assessments of both stocks, *Champsocephalus gunnari* and *Notothenia gibberifrons* in Subarea 48.2, length and age data from the catches since the mid 1980's are needed. An estimate of current stock biomass from a research vessel survey is also highly desirable.

(i) To improve assessment of the stock of *N. gibberifrons* in Subarea 48.1, age and length data from the recent catches are needed. A research vessel survey to provide a current biomass estimate is also desirable.

(j) The reporting of catches of *Pleuragramma antarcticum* in Subarea 58.4 is still not sufficiently detailed to establish where such catches are taken and whether these are from one or more stocks. Both fine-scale reporting and analysis of catch levels is required to establish the distribution of *P. antarcticum* stocks in Subarea 58.4 as a whole. Some reported catches in 1985 and 1986 indicate possible commencement of a fishery for the species but available data are insufficient to assess stocks. Catch levels since 1987 have, however, been low.

(k) Some historical and recent data on *N. squamifrons* have been submitted by the USSR giving length frequencies, age/length keys and age compositions separately for Ob and Lena Banks. The USSR also reported in their Member's Activities Report the results of trawl surveys which gave biomass estimates of 21.25 ± 11.44 and 12.76 ± 4.34 thousand tonnes for Ob and Lena Banks respectively. Basic survey data and details of the survey design should be made available for consideration and analysis at the meeting of the WG-FSA in 1990.

(l) The WG-FSA drew attention to the increases in catches of *N. squamifrons* in Division 58.4.4 over the last two seasons. Lacking an assessment the WG-FSA was unable to give specific management advice. The submission of the recent survey data and historical catch data is recommended in order to carry out the necessary assessment at next year's meeting.

(m) With regard to *C. gunnari* in Division 58.5.1, a further survey is recommended for 1990 to assess the strength of the incoming cohort. This should be carefully designed to take into account the information now available on the distribution of the stock over the shelf area. Further re-analysis of the 1988 survey, with fine-scale stratification using density concentration information is recommended. Studies on the spawning grounds are recommended to help determine whether this species is subject to high post-spawning mortality. Age/length keys and length frequency data from catches prior to 1980 are required for full stock assessment.

(n) In order to improve assessments of the stock of *N. squamifrons* in Division 58.5.1, including trends in exploitation, it is critically important that the following data be submitted to CCAMLR:

(i) length frequency and age/length data for the *N. squamifrons* fishery in Division 58.5.1 from 1972 to the present. Such data should be provided for individual years as far as possible;

(ii) catch data prior to the declaration of an EEZ around Kerguelen by France (3 February 1978) should be separated for Division 58.5.1 (as done in WG-FSA-89/16 and 17) and re-submitted;

(iii) consolidate the catch data for Subarea 58.5. In particular, care should be taken to ensure consistency between the data submitted to CCAMLR and data available to or held by individual Members; and

(iv) all length data should be reported as total length only so as to avoid possible confusion in the future.

(o) Additional data on all exploited stocks of channichthyids in Statistical Area 58 as a whole are still required urgently for assessment purposes. Such data should be submitted to and considered at the next meeting of the WG-FSA.

Access to and Use of CCAMLR Data

64. In response to the Scientific Committee's request (SC-CAMLR-VIII, paragraph 13.2) that the policy pertaining to the access and use of CCAMLR data and documents be clarified, the Commission decided as follows:

(a) All data submitted to the CCAMLR Data Centre should be freely available to Members for analysis and preparation of papers for use within the CCAMLR Commission, Scientific Committee and their subsidiary bodies.

(b) The originators/owners of the data should retain control over any use of their unpublished data outside of CCAMLR.

(c) When Members request access to data for the purpose of undertaking analyses or preparing papers to be considered by future meetings of CCAMLR bodies, the Secretariat should supply the data and inform the originators/owners of the data. When data are requested for other purposes, the Secretariat will, in response to a detailed request, supply the data only after permission has been given by the originators/owners of the data.

(d) Data contained in papers prepared for meetings of the Commission, Scientific Committee, and their subsidiary bodies should not be cited or used in the preparation of papers to be published outside of CCAMLR without the permission of the originators/owners of the data. Furthermore, because inclusion of papers in the 'Selected Scientific Papers' series or any other of the Commission's or Scientific Committee's publications, constitutes formal publication, written permission to publish papers prepared for meetings of the Commission, Scientific Committee and Working Groups should be obtained from the originators/owners of the data and authors of papers.

(e) The following statement should be placed on the cover page of all unpublished working papers and background documents tabled:

This paper is presented for consideration by CCAMLR and may contain unpublished data, analyses, and/or conclusions subject to change. Data contained in this paper should not be cited or used for purposes other than the work of the CCAMLR Commission, Scientific Committee or their subsidiary bodies without the permission of the originators/owners of the data.

DEVELOPMENT OF APPROACHES TO CONSERVATION
OF ANTARCTIC MARINE LIVING RESOURCES

65. The Convener of the Commission's Working Group for the Development of Approaches to the Conservation of Antarctic Marine Living Resources (WG-DAC), Australia, presented the Working Group's Report which is included at Annex E.

66. The approach to be taken in relation to new and developing fisheries was identified by WG-DAC as a key topic for consideration by the Commission under this item. The Working Group had, however, been unable to discuss the issue fully at its meeting and believed that further discussion was necessary. The Commission agreed that the issue was an important one and should continue to be considered.

67. The Convener of the Working Group noted that the Scientific Committee had responded to the questions the Working Group had formulated at its meeting during CCAMLR-VII (CCAMLR-VII, paragraphs 140 to 141).

68. The Scientific Committee's responses are given in its report (SC-CAMLR-VIII, paragraphs 7.1 to 7.22). In its consideration of these questions the Scientific Committee agreed that:

(a) approaches to management of the krill fishery (such as that discussed in SC-CAMLR-VIII/BG/17) should be referred to the WG-Krill for detailed consideration (SC-CAMLR-VIII, paragraph 7.10);

(b) the approaches to the use of CEMP data as part of CCAMLR fishery management strategies (such as that discussed in SC-CAMLR-VIII/9) merited further investigation and development and should be discussed by the WG-CEMP at its next meeting (SC-CAMLR-VIII, paragraph 7.19); and

(c) In addition to the matters referred to in paragraphs 7.10 and 7.19 of the Scientific Committee's Report (a) and (b) above, the specialist working groups of the Scientific Committee should reconsider the Commission's questions and the wider issue of development of appropriate approaches to conservation in the light of the Scientific Committee's consideration of the issue (SC-CAMLR-VIII, paragraph 7.21).

69. The Commission endorsed the approach of the Scientific Committee on these matters and agreed that the Scientific Committee's responses should be considered at the Commission's next meeting.

70. The USSR welcomed the emphasis the WG-DAC had put on the need for adequate scientific information, referring to Article IX of the Convention, and reminded the Commission of its responsibility to facilitate relevant scientific research. It further pointed out that the effectiveness of the Commission is dependent on the best scientific evidence available being supplied by the Scientific Committee.

71. The necessity for the WG-DAC to ensure that consistency with the principles in Article II of the Convention is always maintained in the development of approaches to conservation was also stressed. In this context, the USSR queried the concept of setting 'upper limits' to a fishery, as discussed in WG-DAC-89/4. The use of terms such as 'experimental fishery' was also questioned. It was pointed out that any fishery will have some impact and all should be subject to regulation if necessary.

72. The USSR drew attention to the relevance of Articles 61 and 119 of the United Nations Convention on the Law of the Sea even though the Convention is not yet in force.

73. The USA agreed with the USSR's emphasis on the Commission's role in applying and giving effect to Article II. It also noted the relevance of Article XX (4) in discussion on the need for scientific information.

74. Attention was drawn to the fact that the Scientific Committee had noted that, as the data requirements for different conservation approaches may be vastly different, and the cost of pursuing inappropriate approaches could be high, the Commission should be asked for more specific guidance on the strategic issues it would like the Scientific Committee to consider and provide advice on (SC-CAMLR-VIII, paragraph 7.22).

75. The USA noted that discussions under Items 6 and 8 of the Commission's agenda and questions arising form them (paragraphs 50 and 123) were relevant to discussions under this item, and to the Scientific Committee's request for guidance.

CONSIDERATION OF CONSERVATION MEASURES

Review of Existing Measures

76. The Commission agreed that Conservation Measures 2/III, 3/IV, 4/V, 5/V, 6/V and 7/V should remain in force as they stand. Conservation Measures 11/VII and 12/VII expired on 20 November 1989 and at the end of the 1988/89 season, respectively. As there was no consensus

on the retention of Conservation Measure 1/111, it is no longer in force. Certain of these Conservation Measures were discussed further in the light of advice from the Scientific Committee.

77. The general fisheries management strategy of the Commission (CCAMLR-VI, paragraphs 59 to 65, 80 to 83; CCAMLR-VII, paragraphs 87, 88 and 90), has attempted to restore depleted populations and to limit fishing mortality to low levels of F, preferably $F_{0.1}$, by means of some combination of TACs and protection for small fish. The protection for small fish would be achieved by some combination of:

(a) establishing a minimum mesh size that will allow small fish to escape capture;

(b) prohibiting fishing in certain areas where small fish are most likely to be caught; and

(c) prohibiting fishing during certain periods of time when small fish are most likely to be caught.

78. The situation of a species which while being protected to permit restoration, forms a by-catch in a directed fishery for another species, has been an additional and particular, source of concern.

79. The Commission had requested specific advice from the Scientific Committee on the topics set out in CCAMLR-VI, paragraph 84; CCAMLR-VII, paragraphs 113 to 116 and 188.

80. The Commission noted that the Scientific Committee had, through its WG-FSA, provided detailed advice in respect of:

(a) mesh size to effect specific potential levels of protection for juvenile fish;

(b) closed seasons;

(c) explicit comments in respect of Commission questions directed at the *C. gunnari*, *N. gibberifrons* and *N. rossii* fisheries;

(d) TACs based especially on the $F_{0.1}$ level of fishing mortality, but including advice in situations where this approach was judged inappropriate;

(e) general management advice on a wide variety of stocks and areas.

81. In respect of mesh selection, the Scientific Committee recommended (SC-CAMLR-VIII, paragraph 3.18) that the Commission consider introducing the following minimum mesh sizes for the commercial fisheries in Statistical Area 48:

(a) Subarea 48.3

(i) Fishery targeted at *C. gunnari*
80 mm, to protect immature fish, or
90 mm to protect first spawners, or
100 mm, to give an age at first capture of 4 years;

(ii) Fishery targeted at *Patagonotothen brevicauda guntheri*
50 m, to protect immature fish;

(iii) Mixed fishery (not targeted at *C. gunnari* or *P.b. guntheri*)
120 mm extended to include *N. gibberifrons*, *Chaenocephalus aceratus* and *P. georgianus* (in addition to *N. rossii* and *Dissostichus eleginoides*, which have had such a mesh regulation since 1984 – Conservation Measure 2/III), to ensure better protection of immature fish;

(b) Subareas 48.1 and 48.2
110 mm, to ensure protection of first spawners of *C. gunnari* and immature *N. gibberifrons*.

In addition, the Scientific Committee recommended inclusion of a provision prohibiting use of chafers and specifying that codends should be of diamond-shaped mesh with twine no thicker than 4.5 mm.

82. The Commission noted that it should have reached the point when the mesh size regulation, adopted in 1984, might be reviewed after five years of operation, on the basis of completed selectivity experiments. The Soviet Union indicated that it was unable to agree to new mesh size requirements additional to those which already existed in Conservation Measure 2/III. Therefore, no consensus could be reached on the implementation of the Scientific Committee's recommendations. The other Members of the Commission regretted this decision. It was further noted that lack of consensus and failure to act on the advice of the Scientific Committee does not encourage Members to undertake further costly experiments on mesh selectivity. However, there are still a number of questions to be solved including especially the construction of codends and their rigging etc. and escapement and survival rates of fish.

83. It was agreed that Conservation Measure 2/III should remain in force.

84. In respect of closed seasons to protect young fish and spawning grounds/aggregations, the Scientific Committee endorsed (SC-CAMLR-VIII, paragraph 3.66) the recommendation of the WG-FSA (SC-CAMLR-VIII, Annex 6, paragraph 198) that a closed season should operate from 1 March to the end of the Commission meeting.

85. The Commission noted this advice and that the original questions (CCAMLR-VII, paragraph 116) had been addressed to the *C. gunnari* fishery. It was noted the desire of several Members of the Commission that the 1989/90 fishery should not start until 15 January 1990. Accordingly, the Commission agreed, without prejudice to future decisions about closed seasons, to close the *C. gunnari* fishery in Subarea 48.3 from 20 November 1989 to 15 January 1990 and from 1 April to 4 November 1990.

86. In respect of the Commission's questions concerning *N. gibberifrons* and *N. rossii* (CCAMLR-VII, paragraph 114 (ii)), the Commission noted that the Scientific Committee had advised that:

(a) The calculation of F_{max} is dependent on a particular equilibrium assumption of constant recruitment and hence is violated when recruitment declines. The priority for these stocks should be to facilitate recovery to a level where recruitment improves.

(b) Although juvenile *N. rossii* may be experiencing increased predation from Antarctic fur seals, *A. gazella*, low recruitment associated with low spawning stock size is the most likely cause of the currently low recruitment.

(c) Use of semipelagic or midwater trawls would reduce by-catch of *N. gibberifrons* and *N. rossii*. However, the use of midwater trawls might also result in increased targeting of the youngest age classes of *C. gunnari*.

(d) Persistent catch levels as high as four times TAC calculated from F_{max} will drive *N. gibberifrons* stocks to extinction.

87. In respect of the Commission's request (CCAMLR-VII, paragraph 114 (i)) for advice on the likely trajectories of *C. gunnari* catch, total biomass and spawning biomass and the effects of different patterns of fishing mortality, a summary of the conclusions of (and discussions about) the analyses addressing these questions is presented in paragraphs 67 to 71 of the WG-FSA Report (SC-CAMLR-VIII, Annex 6). The general conclusion (SC-CAMLR-VIII, Annex 6, paragraph

72) is that the two studies, although based on different approaches, provide essentially similar advice with regard to the South Georgia *C. gunnari* fishery: That is, a pause of one to two years to let the spawning stock recover and thereafter a conservative fishing mortality rate not higher than $F_{0.1}$.

88. The Commission's discussion of the management advice provided by the Scientific Committee focussed on Statistical Area 48 generally and Subarea 48.3 in particular.

89. The Commission noted the difficulties the Scientific Committee had in providing agreed management advice recommending specific TACs and/or other measures to limit fishing mortality and protect juvenile fish. It recognised that this was because of:

(a) difficulties in reconciling the results of different approaches (e.g. UK/Polish surveys and USSR VPA analysis of *C. gunnari* in Subarea 48.3);

(b) lack of data to investigate the causes of historical fluctuations and apparent trends in catches (e.g. *C. gunnari* and *N. gibberifrons* in Subareas 48.1 and 48.2 and to a lesser extent *C. gunnari* in Subarea 48.3); and

(c) lack of current data on existing directed fisheries (e.g. *Electrona carlsbergi* and *D. eleginoides* in Subarea 48.3).

90. Concerning the state of fisheries in Statistical Area 48 as described in the WG-FSA and the Scientific Committee Reports, the view of most Members was that all available evidence indicated that restoration of significantly depleted stocks would best be achieved by a complete closure of all three subareas, and especially Subarea 48.3, to finfishing.

91. The Soviet Union expressed the opinion that an approach which examined individual stocks is adequate to ensure the conservation of fish resources.

92. Members reviewed the advice of the Scientific Committee on a stock by stock basis.

Champsocephalus gunnari in Subarea 48.3

93. The Commission examined the two assessments of the *C. gunnari* stock considered by the Scientific Committee and noted the large discrepancy between them. The Commission further noted that if the higher biomass estimate is in error, then a TAC set on this basis will lead to a substantial

depletion of the stock. However, if the lower biomass estimate is in error, then a TAC set on this basis will simply result in more, larger fish being available to the fishery the following year.

94. The Commission agreed a TAC for *C. gunnari* in Subarea 48.3 of 8 000 tonnes, being a TAC based on the lower biomass of $F_{0.1}$ plus an addition to allow for the area not covered in the survey which provided that biomass estimate.

Notothenia gibberifrons in Subarea 48.3

95. Taking account of the Scientific Committee's recommendation, the Commission agreed there would be no directed fishery for *N. gibberifrons* in Subarea 48.3 and by-catch would be restricted to not more than 300 tonnes.

96. It noted with concern, however, that in 1988/89 the by-catch of *N. gibberifrons* associated with a catch of *C. gunnari* of 21 359 tonnes in Subarea 48.3 was 838 tonnes. Such a catch was nearly twice the level at $F_{0.1}$.

Chaenocephalus aceratus and *Pseudochaenichthys georgianus* in Subarea 48.3

97. The Commission noted the endorsement by the Scientific Committee (SC-CAMLR-VIII, Annex 6, paragraph 109) that no directed catches be taken and the by-catch reduced to a minimum to allow recoveries of these stocks.

Notothenia squamifrons in Subarea 48.3

98. The Commission noted with concern the Scientific Committee's comments about the absence of information from which to calculate a TAC or estimate a potential yield. It agreed that there should be no directed fishery for this species in the 1989/90 season.

99. In accordance with paragraphs 93 to 95 above, Conservation Measures 13/VIII, 14/VIII and 15/VIII were adopted.

Electrona carlsbergi in Subarea 48.3

100. The Commission noted with concern the 25-fold increase in catches between 1987 and 1989 and the absence of data made available on which to base stock assessment and management advice.

Patagonotothen brevicauda guntheri Subarea 48.3

101. The Commission noted with concern the Scientific Committee's comments concerning the lack of adequate data for accurately assessing current stock size and the consequent difficulty in making specific management recommendations.

102. The Commission recollected that last year, in the absence of specific recommendations, it had decided to limit the catch of *P.b. guntheri* to a level between the catches of the previous two years. This year, in view of the fact that adequate management data was still unavailable, it was decided to set the catch limit at a slightly lower level; a TAC of 12 000 tonnes was agreed.

103. Conservation Measure 16/VIII was adopted.

Dissostichus eleginoides in Subarea 48.3

104. The Commission echoed the Scientific Committee's concern at the rapid rise in catch levels concurrent with the commencement of a longline fishery and the very limited data available for any estimation of stock size.

105. The Commission noted the advice of the Scientific Committee that a biomass figure of 40 000 tonnes, some five times the stock estimate obtained by the FRG survey in 1984/85 using a bottom trawl, provided a useful basis for setting a TAC. Applying a standard method to this figure gives a TAC of 1 200 tonnes.

106. Most Members of the Commission were of the view that this advice represents the best scientific evidence available, and hence should be useful to set a TAC. The USSR stated that the longline fishery takes senescent fish. Consequently, they did not agree that setting any TAC for the longline fishery was justified. They stated that they would not increase the number of vessels taking part in the fishery by more than one or two above the six vessels used in the 1988/89 season.

107. The Commission reiterated its concern at the commencement of an unregulated fishery of a type known elsewhere in the World to cause substantial incidental mortality of seabirds (see paragraph 24 above).

108. As a result of this discussion, the Commission adopted Resolution 5/VIII.

109. The Commission agreed that past catch and effort data shall be submitted as a matter of urgency, using the format agreed by the Scientific Committee. Future catch and effort data shall be collected and submitted. The USSR also undertook to provide full biological data from the longline catches including age compositions, length compositions, age/length keys, age-maturity stage data and age-fecundity data.

Champsocephalus gunnari and *Notothenia gibberifrons*
in Subareas 48.1 and 48.2

110. The Commission noted with concern that due to lack of data the Scientific Committee had been unable to recommend TACs for either species in either area.

111. In considering the data presented in the WG-FSA Report (SC-CAMLR-VIII, Annex 6, paragraph 129), for Subarea 48.2, many Members expressed the view that declines in catches of *C. gunnari* from 139 000 and 21 000 tonnes in the first two years of the fishery to an annual average of less than 3 000 tonnes over the last decade reflected a substantial decline in stock and merited protective management action.

112. The Soviet Union expressed the view that because of this species' sporadic occurrence in the area, no catch limit was required.

113. A similar divergence of views prevailed in respect of Subarea 48.1.

114. It was agreed, however, that stocks of *N. gibberifrons* in Subareas 48.1 and 48.2 were at a level where protective measures were necessary. The Commission agreed to adopt a resolution urging all parties to refrain from directed fishing on *N. gibberifrons* in Subareas 48.1 and 48.2 and to ensure that by-catch of *N. gibberifrons* in directed fishing for other species be avoided.

115. Resolution 6/VIII was adopted.

General Considerations

116. A central consideration in setting the TACs for Subarea 48.3, particularly in view of the low catch figures involved, was a concern to limit as far as possible by-catches of already depleted species. To this end the Commission agreed to adopt a Catch Reporting System for catches and by-catches in Subarea 48.3 based on five-day reporting periods.

117. Conservation Measure 17/VIII was adopted.

118. Throughout this review, great difficulty was experienced in reconciling two opposing views. The first, held by most Members, was that in the absence of more detailed historical and current biological data, which should have been available from the fishery, thus allowing the WG-FSA to make stock assessments and provide management advice, it was prudent to set conservative TACs and provide as much protection as possible for juvenile fish.

119. The other view, held by the Soviet Union, was that in the absence of more detailed historical and current biological data from fishing vessels, management procedures should not be enacted.

120. The Commission noted that this contradiction, which formed a fundamental obstruction to its management responsibilities, seemed likely to persist either until all available historical and current data were provided or it was accepted that, in the absence of data which can only be provided by fishing nations, precautionary measures become essential.

121. The Commission welcomed the offer of the USSR to organise an international collaborative survey in the 1989/90 season in Subarea 48.3. In this regard, attention was drawn to plans for a UK/Polish survey in the same region in January 1990. Details of these two surveys would be discussed by principal scientists and the Convenor of the WG-FSA and the proposed survey plans sent to the Secretariat in advance of the commencement of the surveys.

122. In connection with the avoidance of by-catch, the Commission recalled the advice of the Scientific Committee that the use of semipelagic or midwater trawls for *C. gunnari* would reduce the by-catch of *N. rossii* and *N. gibberifrons* (SC-CAMLR-VIII, Annex 6, paragraph 193). It also noted the additional statements concerning whether or not this change in gear and fishing practice might target young age classes of *C. gunnari* (SC-CAMLR-VIII, Annex 6, paragraph 193 and SC-CAMLR-VIII, paragraph 3.67). The Commission agreed to prohibit the use of bottom trawls in Subarea 48.3.

123. Some Members expressed the view that developing fisheries should be subject to some form of regulation and that to meet the objectives of CCAMLR, fishery development should not proceed faster than development of the data base necessary to assess the effects of harvesting on target, dependent, and associated species. The Commission therefore requested that the Scientific Committee provide advice on:

(a) the types of information needed to characterise and estimate the potential yield of unexploited and under-exploited fishery resources;

(b) the types of information needed to determine an initial threshold level above which catches should not be allowed to increase without programs in place to assess the effects of the catches, including by-catch, on target, dependent and associated species;

(c) how the needed baseline information can best be obtained;

(d) how the developing fishery might best be regulated in order to identify and efficiently achieve, but not exceed the maximum catch levels consistent with Article II of the Convention.

(e) how the identified information needs might best be met; and

(f) how long it might take to acquire the required knowledge.

CONSERVATION MEASURE 13/VIII
Limitation of the Total Catch of *Champsocephalus gunnari* in
Statistical Subarea 48.3 in the 1989/90 Season

124. The Commission, in accordance with Conservation Measure 7/V, hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

1. The total catch of *Champsocephalus gunnari* in the 1989/90 season shall not exceed 8 000 tonnes in Statistical Subarea 48.3.

2. The by-catch of any of the following species: *Notothenia rossii*, *Notothenia gibberifrons*, *Chaenocephalus aceratus* and *Pseudochaenichthys georgianus* in Statistical Subarea 48.3 shall not exceed 300 tonnes.

3. The fishery in Statistical Subarea 48.3 shall close if the by-catch of any of the species named in paragraph 2 above reaches 300 tonnes or if the total catch of *Champsocephalus gunnari* reaches 8 000 tonnes, whichever comes first.

4. If, in the course of the directed fishery for *Champsocephalus gunnari*, the by-catch of any one haul of any of the species named in paragraph 2 above exceeds 5%, the fishing vessel shall move to another fishing ground within the subarea.

5. The use of bottom trawls in the directed fishery for *Champsocephalus gunnari* in Statistical Subarea 48.3 is prohibited.

6. For the purpose of implementing paragraphs 1, 2 and 3 of this Conservation Measure, the Catch Reporting System set out in Conservation Measure 17/VIII shall apply in the 1989/90 season.

CONSERVATION MEASURE 14/VIII
Prohibition of Directed Fishery on *Notothenia gibberifrons*, *Chaenocephalus aceratus*, *Pseudochaenichthys georgianus* and *Notothenia squamifrons* in Statistical Subarea 48.3 in the 1989/90 Season

125. The Commission, in accordance with Conservation Measure 7/V, hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

Directed fishing on *Notothenia gibberifrons*, *Chaenocephalus aceratus*, *Pseudochaenichthys georgianus* and *Notothenia squamifrons* in Statistical Subarea 48.3 is prohibited in the 1989/90 season.

CONSERVATION MEASURE 15/VIII
Closed Seasons in the 1989/90 Season in Statistical Subarea 48.3

126. The Commission, in accordance with Conservation Measure 7/V, hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

Directed fishing on *Champsocephalus gunnari* between 20 November 1989 and 15 January 1990 and between 1 April and 4 November 1990 is prohibited. During those periods *Champsocephalus gunnari*, *Notothenia rossii*, *Notothenia*

gibberifrons, *Chaenocephalus aceratus*, *Pseudochaenichthys georgianus* and *Notothenia squamifrons* shall not be taken in Statistical Subarea 48.3 except for scientific research purposes.

CONSERVATION MEASURE 16/VIII
Catch Limit on *Patagonotothen brevicauda guntheri*
in Statistical Subarea 48.3 for the 1989/90 Season

127. The Commission, in accordance with Conservation Measure 7/V, hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

The catch of *Patagonotothen brevicauda guntheri* in Statistical Subarea 48.3 in the 1989/90 season shall be limited to 12 000 tonnes. For the purpose of implementing this Conservation Measure the Catch Reporting System set out in Conservation Measure 17/VIII shall apply in the 1989/90 season.

CONSERVATION MEASURE 17/VIII
Catch Reporting System in Statistical Subarea 48.3 in
the 1989/90 Season

128. The Commission, in accordance with Conservation Measure 7/V, hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

1. For the purposes of this Catch Reporting System the calendar month shall be divided into six reporting periods, viz: day 1 to day 5, day 6 to day 10, day 11 to day 15, day 16 to day 20, day 25 and day 26 to the last day of the month. These reporting periods A, B, C, D, E and F.

2. At the end of each reporting period, each Contracting Party shall obtain from each of its vessels its total catch for that period and shall, by cable or telex, transmit the aggregated catch for its vessels so as to reach the Executive Secretary not later than the end of the next reporting period.

3. Such reports shall specify the month and reporting period (A, B, C, D, E or F) to which each report refers.

4. Immediately after the deadline has passed for receipt of the reports for each period, the Executive Secretary shall notify all Contracting Parties of the total catch taken during the reporting period, the total aggregate catch for the season to that date, together with an estimate of the date upon which the total allowable catch is likely to be reached for that season. Each estimate shall be based on a projection forward of the average daily catch rate (calculated as the total catch by all contracting parties divided by the number of days in the period) for the most recent period based on the reports received for the period in question, to the point at which the total allowable catch will have been taken.

5. When the Executive Secretary has received reports which show that 90% of the total allowable catch has been taken, the Executive Secretary shall make a final estimate of the date upon which the total allowable catch will be reached. The fishery shall close at the end of the last day of the reporting period within which that date falls.

RESOLUTION 5/VIII
Protection of Seabirds from Incidental Mortality
Arising from Longline Fishing

129. The Commission took note of the recent introduction of longline fishing in the CCAMLR Convention Area. It expressed its concern that fishing with this technique could cause substantial incidental mortality of seabirds.

130. In this connection the Commission:

(a) takes note of the intention of the Soviet Union not increase, by more than one or two vessels, the number of its vessels engaged in longline fishing on *Dissostichus eleginoides* in Subarea 48.3 in the 1989/90 season;

(b) recalls that techniques have been developed and are being used on a trial basis in other longline fisheries, such as in the tuna longline fishery in the South West Pacific, to minimise incidental mortality of seabirds; and

(c) urges all parties to the Convention conducting longline fishing in the CCAMLR Convention Area to investigate and introduce as soon as possible methods to minimise incidental mortality to seabirds arising from the use of longline fishing techniques.

RESOLUTION 6/VIII
Protection of *Notothenia gibberifrons* in the Peninsula Area (Statistical Subarea 48.1) and Around South Orkneys (Statistical Subarea 48.2)

131. The Commission recognised that it was important that fishing mortality in *Notothenia gibberifrons* should, as a precautionary measure, be minimised. To this end the Commission requests all parties to the Convention to keep the catch of *Notothenia gibberifrons* in the Peninsula Area (Statistical Subarea 48.1), and around South Orkneys (Statistical Subarea 48.2), in the season 1989/90 to the lowest possible level.

132. To this end the Commission requests all parties to the Convention in the 1989/90 season:

(a) to refrain from directed fishing for *Notothenia gibberifrons*; and

(b) to ensure that by-catch of *Notothenia gibberifrons* in directed fishing for other species be avoided.

133. At the conclusion of the Commission's consideration of this agenda item, the Convener of the WG-FSA, Dr K.-H. Kock, FRG, was given the opportunity to make a statement. A copy of his statement is included in this report as Annex F.

ESTABLISHMENT OF A SYSTEM OF OBSERVATION AND INSPECTION ARTICLE XXIV OF THE CONVENTION

134. The Chairman of the Standing Committee on Observation and Inspection, Mr R. Arnaudo (USA) presented the Report of the Committee (Annex G).

135. The Commission noted that the outstanding practical requirements for the implementation of the system had been agreed at the meeting and expressed satisfaction that the system was in operation for the 1989/90 season. It was acknowledged that the system would continue to be developed as experience in its operation was gained.

136. The Commission accepted the Report of the Committee and approved the documents and items required for inspections as set down in paragraphs 2 and 3 of its report. The Commission requested the Executive Secretary to prepare appropriate quantities of the required items for distribution as soon as possible.

137. It was acknowledged that there might be some delay involved in passing the relevant information to masters of vessels, since the intention is to help communication between the inspector and the master and in some cases, the documents will have to be translated into the masters' languages. In any case, Members agreed to notify the Executive Secretary when the information had been passed to masters of vessels operating in the Convention Area.

138. Poland and Japan stated that the system would not become operational for them until the documentation in the Polish and Japanese languages had been transmitted to the masters of their vessels operating in the Convention Area. However, they assured the Commission that this would be achieved as early as possible so that inspections of their vessels could be effectively made in the 1989/90 season.

139. Other delegations pointed out that the Commission had already adopted the system of observation and inspection and that it was in force. However, they welcomed the statement of the two delegations relating to facilitation of inspections in the 1989/90 season.

140. The Commission expressed its gratitude to Mr Arnaudo, who had served as Chairman of the ad hoc Working Group which had begun the development of the system and as Chairman of the Standing Committee for the past two meetings. Spain was elected to succeed the USA as Chairman. The position of Vice-Chairman also became vacant and Australia was elected to fill this office.

COMPLIANCE WITH CONSERVATION MEASURES IN FORCE

141. The Chairman of the Standing Committee on Observation and Inspection reported that no alleged infractions had been reported.

142. The Commission noted that the Standing Committee had drawn attention to Article XXI of the Convention requiring Members to submit information to the Commission on measures taken to ensure compliance with Conservation Measures.

COOPERATION WITH OTHER ELEMENTS OF THE ANTARCTIC TREATY SYSTEM

143. The Chairman reported that he had been represented at the XVth Antarctic Treaty Consultative Meeting, held in Paris from 9 to 19 October 1989, by the Head of the Brazilian Delegation to that meeting.

144. A report, prepared by the Executive Secretary and approved by the Chairman had been presented to the Consultative Treaty Meeting in the four official languages of the Commission. The report had been well received and was appended to the final report of the meeting.

145. Several CCAMLR delegates who had attended the meeting relayed to the Commission remarks made at the meeting to the effect that the report gave a clear description of what CCAMLR has done and is doing on matters related to the interests of the Antarctic treaty Consultative Parties.

146. The report had raised the question of improving communication between the ATCPs and CCAMLR. Some delegations expressed the view that the lack of a permanent secretariat in the Treaty made communication difficult. It was suggested that more formal links needed to be established in the interest of a fully effective and integrated Antarctic Treaty System.

147. The Chairman invited Members to further consider ways of improving communication within the Treaty System and to submit their proposals to the Executive Secretary.

148. It was noted that an item on ozone depletion and climate change had been discussed at the Treaty Meeting.

149. The view was expressed that the effect of ozone depletion on the Antarctic marine environment was a subject which was of direct interest to CCAMLR, but neither the Commission nor the Scientific Committee had an agenda item dealing with it. Some delegations suggested that consideration might be given to discussion of this subject in CCAMLR forums.

150. It was pointed out that the work already facing the Commission was considerable and that SCAR has initiated a program to study the role of the Antarctic in global change which includes biological and ecological aspects. Some delegations thought it would be sufficient for CCAMLR to take note of that program and monitor its results.

151. The Australian Delegation stated that it was not the intention of any of the several proposals discussed in Paris, under the item 'Comprehensive Measures for the Protection of the Antarctic

Environment and Dependent and Associated Ecosystems', to have the effect of displacing CCAMLR, which was a free standing conservation convention, and drew the attention of the Commission to this view.

152. The Commission noted that Treaty Meetings are planned for 1990 and it is likely that CCAMLR will be invited to be represented as an observer.

COOPERATION WITH OTHER INTERNATIONAL ORGANISATIONS

153. The United States represented CCAMLR as Observer at the 41st Annual Meeting of the International Whaling Commission held in San Diego, USA from 12 to 16 June, 1989. The US Delegation submitted a report.

154. It was agreed that the organisations invited to attend the Eighth Meeting of CCAMLR should also be invited to attend the Ninth Meeting.

155. It was recalled that the question of inviting ASOC to the next meeting of the Commission would be governed by the Rules of Procedure as would its participation if invited.

156. Some delegations expressed the view that there would be benefit in having ASOC also attend the meetings of the Scientific Committee as an observer provided that its representatives had the necessary qualifications and background to allow effective participation in the Scientific Committee's work. It was acknowledged, however, that ASOC's attendance is a matter for the Scientific Committee to deal with in accordance with its own Rules of Procedure.

157. The Commission considered a proposal from the United Nations Environmental Program (UNEP) that CCAMLR, together with other interested organisations, sign a Memorandum of Understanding expressing intent to continue cooperation in the implementation of the Global Plan of Action for Conservation Management and Utilization of Marine Mammals.

158. The Commission noted that the Scientific Committee, in 1985, had discussed the Global Plan, expressed interest and support in principle, but had not decided on any explicit action on its own part in relation to the Plan.

159. The Commission also noted that the Scientific Committee, at its present meeting, had expressed the view that the elements of the Global Plan as it applied to the Antarctic were being adequately addressed by CCAMLR, the Convention for the Conservation of Antarctic Seals and

other elements of the Antarctic Treaty System. It had agreed that reports of its work that might be of relevance to the Plan should be made available to UNEP.

160. The USSR Delegation said that there was no need for a separate consultative mechanism for cooperation between UNEP and CCAMLR as envisaged in the Memorandum of Understanding. Such cooperation should be achieved within the framework of CCAMLR, as provided for in Article XXIII of the Convention.

161. The Commission felt that it did not have enough information on the UNEP proposal to discuss fully and to decide on the matter.

162. The Commission received on 2 November 1989 an application for observer status at CCAMLR meetings from Stichting Greenpeace Council. Some delegations pointed out that a decision could not be made on this matter which was not on the agenda.

163. The Chairman pointed out that in the introduction to the application, Greenpeace alleged that previous applications had not received serious attention. The Executive Secretary was asked, in his response to Greenpeace, to draw attention to the record in the Reports of the Commission on the consideration of observer status of non-governmental organisations, which had included consideration of applications from Greenpeace.

ELECTION OF VICE-CHAIRMAN OF THE COMMISSION

164. After being nominated by the Republic of Korea and seconded by Brazil, Poland was elected to serve as Vice-Chairman of the Commission until the conclusion of the Commission's meeting in 1991.

NEXT MEETING

165. The next meeting of the Commission and the Scientific Committee will be held in Hobart during the period 22 October to 2 November 1990.

166. The Delegation of Chile reminded the commission that CCAMLR would celebrate its Tenth Meeting in 1991 and proposed that the occasion be commemorated in an appropriate way by Members. The Executive Secretary might be able to assist Members in achieving this.

167. The Representative of Chile also informed the Commission that his Government wished to contribute to the occasion by inviting the Commission to hold its 1991 Meeting in Santiago. He said that his Government was prepared to meet the additional costs involved.

168. Delegates from Argentina, Brazil, Spain and the USSR welcomed the invitation, drawing attention to the benefits of the increase in public awareness of CCAMLR that would result from occasionally having meetings away from Hobart.

169. Delegates from the USA, UK, Australia, France and New Zealand expressed their gratitude to the Delegation of Chile and drew attention to organisational and budgetary considerations. It was noted that a change of venue for a Commission meeting should not result in additional costs for the budget of the Commission.

170. In this latter regard, it was noted that an estimation had been prepared by the Executive Secretary for the Standing Committee on Administration and Finance at the Sixth Meeting. It would be helpful if this could be updated before a firm proposal was submitted.

171. The French Delegation expressed the view that a decision on the location of the 1991 Meeting should not be made before the Commission's meeting in 1990.

172. It was agreed that the Executive Secretary, in consultation with the Delegation of Chile, would prepare a report for the next meeting. The report would examine all of the financial and organisational aspects associated with holding the meeting in Santiago including arrangements for the conduct of the WG-FSA.

OTHER BUSINESS

Proposed Amendments to the Commission Rules of Procedure

173. The Commission adopted the following amendments to the Rules of Procedure:

> Rule 9
>
> A person representing a Member of the Commission as its Representative who is elected as Chairman shall cease to act as a Representative upon assuming office and, whilst holding this office, shall not act as Representative, Alternate Representative or Adviser at meetings of the Commission.

The Member of the Commission concerned shall appoint another person to replace the one who was hitherto its Representative.

Rule 12

Whenever the Chairman of the Commission is unable to act, the Vice-Chairman shall assume the powers and responsibilities of the Chairman. The Vice-Chairman shall act as Chairman until the Chairman resumes his duties. Whilst acting as Chairman, the Vice-Chairman will not act as Representative.

Rule 13

In the event of the office of Chairman falling vacant due to resignation or permanent inability to act, the Vice-Chairman shall act as Chairman until the Commission's next meeting on which occasion a new Chairman shall be elected. Until the election of a new Chairman, the Vice-Chairman will not act as Representative, Alternate Representative or Adviser.

174. It was agreed, that with regard to Rule 13, that the Vice-Chairman would be given as early notice as possible of the unavailability of the Chairman to preside over a meeting of the Commission.

ADOPTION OF REPORT AND CLOSE OF MEETING

175. The Commission adopted the Report of its Eighth Meeting and the Chairman closed the meeting.

ANNEX A

LIST OF MEETING PARTICIPANTS

LIST OF MEETING PARTICIPANTS

CHAIRMAN:

His Excellency Mr Marcos Henrique C. CÔRTES
Ambassador for Brazil
Australia

ARGENTINA

Representative:

Ministro Joaquin Daniel OTERO (h.)
Subdirector General de Antártida
Ministerio de Relaciones Exteriores y Culto
Buenos Aires

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Buenos Aires

Lic. Esteban R. BARRERA-ORO
Instituto Antártico Argentino
Buenos Aires

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Representative:

Mr John BURGESS
Assistant Secretary
Environment and Antarctic Branch
Department of Foreign Affairs and Trade

Alternate Representatives:

Dr Patrick QUILTY
Antarctic Division

Mr William BUSH
Director, Antarctic Section
Department of Foreign Affairs and Trade

Mr Peter HEYWARD
Antarctic Division

Dr Raoul MIDDELMANN
Australian Fisheries Service
Department of Primary Industries and Energy

Ms Judith LAFFAN
Antarctic Section
Department of Foreign Affairs and Trade

Advisers:	Mr Dick WILLIAMS Antarctic Division
	Dr Stephen NICOL Antarctic Division
	Dr Knowles KERRY Antarctic Division
	Dr Bill DE LA MARE Special Adviser
	Mrs Margaret YARNELL Antarctic Division
	Mr Andrew CONSTABLE Representative of Non-Governmental Organisations

BELGIUM

Representative (Week 1):	Mrs Nancy ROSSIGNOL Counsellor of Embassy Royal Belgian Embassy Canberra
Representative (Week 2):	His Excellency Dr Wilfried DE PAW Ambassador Royal Belgian Embassy Canberra

BRAZIL

Representative:	Maria Luiza VOITTI First Secretary Ministry of External Relations Brasília
Alternate Representative:	Janice TROTTE Adviser Brazilian Interministerial Commission for Resources of the Sea (CIRM) Brasília

CHILE

Representative	Sr Rolando STEIN Consul General of Chile Melbourne
Alternate Representatives:	Sr Antonio MAZZEI Deputy Director Instituto Antartico Chileno
Advisers:	Professor Daniel TORRES Instituto Antartico Chileno
	Paulina JULIO Ministerio de Relaciones Exteriores de Chile Departamento Antártica

EEC

Representative:	Dr C. VAMVAKAS Principal Administrator Commission of the European Communities Brussels
Advisers:	Mr Svend KRISTENSEN General Secretariat of the Council of the European Communities Brussels
	Dr Max SIEMELINK Ministry of Agriculture and Fisheries Directorate of Fisheries The Hague
	Dr Volker SIEGEL Institut für Seefischerei Hamburg

FRANCE

Representative:	Mr Charley CAUSERET Conseiller des affaires étrangères Direction des affaires juridiques Ministère des affaires étrangeres
Alternate Representative:	Mr Dominique PINEY Chargé de mission Direction des pêches maritimes Ministère de la Mer

Adviser:	Dr Guy DUHAMEL Sous Director Laboratoire d'ichtyologie générale et appliquée Muséum national d'histoire naturelle

GERMAN DEMOCRATIC REPUBLIC

Representative:	Dr Walter RANKE Head of Department Fischkombinat Rostock
Alternate Representative:	Mr P.M. KOESTER Head of Department of Fisheries Ministry of County Controlled Industry And Foodstuffs Industry
Adviser:	Mr M. KNISPEL Deputy General Manager AHB Fischimpex Rostock

GERMANY, FEDERAL REPUBLIC OF

Representative:	Dr Jürgen GOEBEL First Secretary Embassy of the Federal Republic of Germany Canberra
Alternate Representative:	Dr Karl-Hermann KOCK Institut für Seefischerei Hamburg

INDIA

Representative:	Dr Arun PARULEKAR National Institute of Oceanography Dona Paula, Goa

JAPAN

Representative:	Mr Storu GOTO Deputy Director Far Seas Fisheries Division Fisheries Agency
Alternate Representative:	Mr Kazuo ABE Far Seas Fisheries Division Fisheries Agency

Advisers:	Dr Yasuhiko SHIMADZU Research Coordinator Research Division Fisheries Agency
	Dr Yoshinari ENDO Assistant Professor Department of Agriculture Tohoku University
	Mr Taro ICHII Far Seas Fisheries Research Laboratory Fisheries Agency
	Mr Ken KOBAYASHI Japan Deep Sea Trawlers Association
	Mr Motyoshi SUITO Japan Deep Sea Trawlers Association
	Mr Toshihiro HASEGAWA Japan Deep Sea Trawlers Association
	Mr Kelly KURITA Japan Deep Sea Trawlers Association

KOREA, REPUBLIC OF

Representative:	Mr Jong Koo AHN Minister Embassy of the Republic of Korea
Alternate Representatives:	Dr Yeong GONG Director Deep Sea Resources Division National Fisheries Research and Development Agency
	Mr Jong-Hyun CHOI Assistant Director International Law Affairs Division Ministry of Foreign Affairs

Adviser:	Mr Seong Yong YOO Assistant Director International Cooperation Division National Fisheries Administration

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Adviser:	Janet DALZIELL Representative of Non-Governmental Organisations Auckland

NORWAY

Representative:	Mr Rolf TROLLE ANDERSEN Ambassador, Special Adviser for Polar Affairs Ministry of Foreign Affairs Oslo
Alternate Representative:	Mr Ole J. ØSTVEDT Deputy Director Institute of Marine Research Bergen

POLAND

Representative:	Dr Wieslaw SLOSARCZYK Sea Fisheries Institute Gdynia

SOUTH AFRICA

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Mr Rodney CUMMINS
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Dr Izadore BARRETT
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National Marine Fisheries Service
La Jolla

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His Excellency Mr Gonzalo BEDOYA
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****

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SCIENCE OFFICER	Dr Eugene Sabourenkov
DATA MANAGER	Dr David Agnew
ADMINISTRATIVE/FINANCE OFFICER AND MEETING DOCUMENTS OFFICER	Mr Terry Gundy
COMPUTER SPECIALIST	Mr Matthew Perchard
PERSONAL ASSISTANT TO THE EXECUTIVE SECRETARY	Ms Geraldine Nicholls
SECRETARY	Mrs Genevieve Naylor
ASSISTANT DOCUMENTS OFFICER	Mrs Rosalie Marazas
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– RUSSIAN TEAM	Mr Blair Scruton (translator) Ms Natasha Novikova (translator) Mrs Galina Pritchard (translator) Mr Vasily Smirnov (translator)
– SPANISH TEAM	Mrs Imma Hilly (translator) Mr Manuel Cambronero (translator) Mr Ian Hilly (translator) Mrs Raewyn Hodges (typist)
– SUPPORT STAFF	Mrs Leanne Bleathman Mrs Deb Frankcombe Miss Louise Mcelwee

ANNEX B

AGENDA FOR THE EIGHTH MEETING OF THE COMMISSION

AGENDA FOR THE EIGHTH MEETING OF THE COMMISSION

1. Opening of the Meeting

2. Organisation of the Meeting
   - (i) Adoption of the Agenda
   - (ii) Report of the Chairman

3. Finance and Administration
   - (i) Examination of Audited Financial Statements for 1988
   - (ii) Review of Budget for 1989
   - (iii) Draft Budget for 1990 and Forecast Budget for 1991
   - (iv) Executive Secretary (Term of Office)

4. Assessment and Avoidance of Incidental Mortality of Antarctic Marine Living Resources

5. Consideration of the Establishment of a Standing Committee on Conservation Measures

6. Report of the Scientific Committee

7. Development of Approaches to Conservation of Antarctic Marine Living Resources

8. Consideration of Conservation Measures
   - (i) Review of Existing Measures
   - (ii) Scientific Research Exemption Provision
   - (iii) Consideration of Additional Requirements

9. Establishment of a System of Observation and Inspection, Article XXIV of the Convention

10. Compliance with Conservation Measures in Force

11. Cooperation with Other Elements of the Antarctic Treaty System

12. Cooperation with Other International Organisations

13. Election of Vice-Chairman of the Commission

14. Next Meeting

15. Other Business

16. Report of the Eighth Meeting of the Commission

17. Close of Meeting

ANNEX C

LIST OF MEETING DOCUMENTS

LIST OF MEETING DOCUMENTS

CCAMLR-VIII/1	PROVISIONAL AGENDA FOR THE EIGHTH MEETING OF THE COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES
CCAMLR-VIII/2	ANNOTATION TO THE PROVISIONAL AGENDA FOR THE EIGHTH MEETING OF THE COMMISSION
CCAMLR-VIII/3	PROVISIONAL AGENDA FOR THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE
CCAMLR-VIII/4	EXAMINATION OF THE AUDITED FINANCIAL STATEMENTS Executive Secretary
CCAMLR-VIII/5	REVIEW OF THE 1989 BUDGET, DRAFT 1990 BUDGET AND FORECAST 1991 BUDGET Executive Secretary
CCAMLR-VIII/6	REVIEW OF LEVELS OF PROFESSIONAL STAFF IN THE CCAMLR SECRETARIAT Executive Secretary
CCAMLR-VIII/7	OBSERVATION AND INSPECTION Executive Secretary
CCAMLR-VIII/8	UNITED NATIONS ENVIRONMENT PROGRAM (UNEP) – GLOBAL PLAN OF ACTION FOR CONSERVATION, MANAGEMENT AND UTILISATION OF MARINE MAMMALS Executive Secretary
CCAMLR-VIII/9	INCIDENTAL MORTALITY OF ANTARCTIC BIRDS AND SEALS Responses from the SCAR Bird Biology Subcommittee and the SCAR Group of Specialists on Seals to the CCAMLR Scientific Committee
CCAMLR-VIII/10	REGISTRATION OF LAND-BASED CEMP SITES Delegation of USA
CCAMLR-VIII/11	CONSERVATION MEASURES 9/VI, 11/VII AND 12/VII REPORTED CATCHES OF *CHAMPSOCEPHALUS GUNNARI* AND *PATAGONOTOTHEN BREVICAUDA GUNTHERI* FROM SUBAREA 48.3 IN 1988/89 Secretariat

CCAMLR-VIII/12	GREENPEACE INTERNATIONAL – REQUEST FOR OBSERVER STATUS TO THE COMMISSION AND SCIENTIFIC COMMITTEE Executive Secretary
CCAMLR-VIII/13	THE REPORT OF THE MEETING OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION
CCAMLR-VIII/13 Rev. 1	THE REPORT OF THE MEETING OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION
CCAMLR-VIII/14	THE EXECUTIVE SECRETARY'S REPORT OF THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE
CCAMLR-VIII/15	PROPOSED ADDITION TO THE COMMISSION RULES OF PROCEDURE Chairman of the Commission
CCAMLR-VIII/15 Rev. 1	PROPOSED ADDITION TO THE COMMISSION RULES OF PROCEDURE Chairman of the Commission
CCAMLR-VIII/16	REPORT OF THE MEETING OF THE WORKING GROUP FOR THE DEVELOPMENT OF APPROACHES TO CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES Convener, Australia

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CCAMLR-VIII/BG/1	LIST OF MEETING DOCUMENTS
CCAMLR-VIII/BG/1 Rev. 1	LIST OF MEETING DOCUMENTS
CCAMLR-VIII/BG/2	LIST OF MEETING PARTICIPANTS
CCAMLR-VIII/BG/2 Rev. 1	LIST OF MEETING PARTICIPANTS
CCAMLR-VIII/BG/3	REGISTER OF PERMANENT RESEARCH VESSELS Secretariat

CCAMLR-VIII/BG/4	REPORT OF THE CCAMLR OBSERVER AT THE XVTH ATCM Delegation of Brazil
CCAMLR-VIII/BG/4 Rev. 1	REPORT OF THE CCAMLR OBSERVER AT THE XVTH ATCM Submitted by yhe Chairman
CCAMLR-VIII/BG/5	ENTANGLEMENT IN MAN-MADE DEBRIS OF ANTARCTIC FUR SEALS AT BIRD ISLAND, SOUTH GEORGIA Delegation of United Kingdom
CCAMLR-VIII/BG/6	RECOVERIES OF WANDERING ALBATROSSES *DIOMEDEA EXULANS* RINGED AT SOUTH GEORGIA 1958 – 1986 Delegation of United Kingdom
CCAMLR–VIII/BG/7	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA 1988/89 United Kingdom
CCAMLR-VIII/BG/8	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA 1988/89 Australia
CCAMLR-VIII/BG/9	PLASTIC INGESTION BY PETRELS BREEDING IN ANTARCTICA Delegation of Australia
CCAMLR-VIII/BG/10	THE COMPOSITION AND ORIGIN OF MARINE DEBRIS STRANDED ON THE SHORES OF SUBANTARCTIC MACQUARIE ISLAND Delegation of Australia
CCAMLR-VIII/BG/11	ACCUMULATION OF FISHING DEBRIS, PLASTIC LITTER AND OTHER ARTEFACTS ON HEARD ISLAND AND MACQUARIE ISLAND, SOUTHERN OCEAN Delegation of Australia
CCAMLR-VIII/BG/12	INGESTION OF ANTHROPOGENIC ARTICLES BY SEABIRDS AT MACQUARIE ISLAND Delegation of Australia

CCAMLR-VIII/BG/13	THE OBJECTIVES OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, MANAGEMENT AND UTILIsATION OF MARINE MAMMALS SUMMARY UNEP Regional Seas Report and Studies No. 55
CCAMLR-VIII/BG/14	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA 1988/89 Republic of Korea
CCAMLR-VIII/BG/15	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA 1988/89 United States of America
CCAMLR-VIII/BG/16	REPORT ON THE WRECK OF THE *BAHIA PARAISO* NEAR PALMER STATION AND ENVIRONMENTAL IMPACT DUE TO OIL CONTAMINATION Delegation of USA
CCAMLR-VIII/BG/16 Rev. 1	REPORT ON THE WRECK OF THE *BAHIA PARAISO* NEAR PALMER STATION AND ENVIRONMENTAL IMPACT DUE TO OIL CONTAMINATION Delegation of USA
CCAMLR-VIII/BG/17	APPLICATION FOR CCAMLR OBSERVER STATUS BY STICHTING GREENPEACE COUNCIL Executive Secretary
CCAMLR-VIII/BG/18	MEMBERS' CONTRIBUTIONS Secretariat
CCAMLR-VIII/BG/19	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA 1988/89 USSR
CCAMLR-VIII/BG/20	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA IN 1988/89 Japan
CCAMLR-VIII/BG/21	POTENTIAL IMPACTS OF CLIMATE CHANGE ON THE SOUTHERN OCEAN ECOSYSTEM Delegation of Australia

CCAMLR-VIII/BG/22	REPORT OF THE CCAMLR OBSERVER TO THE INTERNATIONAL WHALING COMMISSION Observer, USA
CCAMLR-VIII/BG/23	REPORT ON ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY IN THE CONVENTION AREA IN 1988/89 Argentina
CCAMLR-VIII/BG/24	LETTER TO THE EXECUTIVE SECRETARY FROM UK HEAD OF DELEGATION – SOUTH GEORGIA AND SOUTH SANDWICH ISLANDS: LIMITS OF TERRITORIAL SEA
CCAMLR-VIII/BG/25	LETTER TO THE EXECUTIVE SECRETARY OF CCAMLR CONCERNING THE RIGHTS OF ARGENTINA TO SOVEREIGNTY AND JURISDICTION OVER THE MALVINAS

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CCAMLR-VIII/MA/1	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Poland
CCAMLR-VIII/MA/2	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Federal Republic of Germany
CCAMLR-VIII/MA/3	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 France
CCAMLR-VIII/MA/4	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Australia
CCAMLR–VIII/MA/5	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Brazil
CCAMLR-VIII/MA/6	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 United States of America

CCAMLR-VIII/MA/7	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 South Africa
CCAMLR-VIII/MA/8	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 USSR
CCAMLR-VIII/MA/9	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Spain
CCAMLR-VIII/MA/10	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Japan
CCAMLR-VIII/MA/11	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 United Kingdom
CCAMLR-VIII/MA/12	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Republic of Korea
CCAMLR-VIII/MA/13	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Chile
CCAMLR-VIII/MA/14	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Norway
CCAMLR-VIII/MA/15	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 Argentina
CCAMLR-VIII/MA/16	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1988/89 German Democratic Republic

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SC-CAMLR-VIII/1	PROVISIONAL AGENDA FOR THE EIGHTH MEETING OF THE SCIENTIFIC COMMITTEE FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

SC-CAMLR-VIII/2	ANNOTATED PROVISIONAL AGENDA FOR THE EIGHTH MEETING OF THE SCIENTIFIC COMMITTEE FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES
SC-CAMLR-VIII/3	REPORT OF THE WORKSHOP ON THE KRILL CPUE SIMULATION STUDY (Southwest Fisheries Centre, La Jolla, USA, 7–13 June 1989)
SC-CAMLR-VIII/3 Rev. 1	REPORT OF THE WORKSHOP ON THE KRILL CPUE SIMULATION STUDY (Southwest Fisheries Centre, La Jolla, USA, 7–13 June 1989)
SC-CAMLR-VIII/4	REPORT OF THE FIRST MEETING OF THE WORKING GROUP ON KRILL (Southwest Fisheries Centre, La Jolla, California, USA, 14–20 June 1989)
SC-CAMLR-VIII/4 Rev. 1	REPORT OF THE FIRST MEETING OF THE WORKING GROUP ON KRILL (Southwest Fisheries Centre, La Jolla, California, USA, 14–20 June 1989)
SC-CAMLR-VIII/5	CONVENER'S REPORT ON THE FIRST MEETING OF THE CCAMLR WORKING GROUP ON KRILL D.G.M. Miller, Convener
SC-CAMLR-VIII/6	REPORT OF THE WORKING GROUP FOR THE CCAMLR ECOSYSTEM MONITORING PROGRAM (Mar del Plata, Argentina, 23–30 August 1989)
SC-CAMLR-VIII/7	REPORT OF THE WORKING GROUP ON FISH STOCK ASSESSMENT (25 October to 2 November 1989, Hobart, Australia)
SC-CAMLR-VIII/7 ADDENDUM 1	REPORT OF THE WORKING GROUP ON FISH STOCK ASSESSMENT (25 October to 2 November 1989, Hobart, Australia)
SC-CAMLR-VIIII/8	REPORT BY CCAMLR CO-CONVENERS ON THE STATUS OF CCAMLR/IWC WORKSHOP ON THE FEEDING OF SOUTHERN BALEEN WHALES D.G.M.Miller and J. Bengtson, CCAMLR Co-Conveners, Joint CCAMLR/IWC Workshop

SC-CAMLR-VIII/9	USE OF INDICES OF PREDATOR STATUS AND PERFORMANCE IN CCAMLR FISHERY MANAGEMENT STRATEGIES Delegation of United Kingdom
SC-CAMLR-VIII/10	REPORT OF THE CCAMLR OBSERVER TO THE SCIENTIFIC COMMITTEE OF THE INTERNATIONAL WHALING COMMISSION Observer (W.K. de la Mare, Australia)
SC-CAMLR-VIII/11	WORKING GROUP FOR THE CCAMLR ECOSYSTEM MONITORING PROGRAM, REPORT OF THE CONVENER Convener (I.R. Kerry)
SC-CAMLR-VIII/11 Rev. 1	WORKING GROUP FOR THE CCAMLR ECOSYSTEM MONITORING PROGRAM, REPORT OF THE CONVENER Convener (K.R. Kerry)

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SC-CAMLR-VIII/BG/1	SUMMARY OF KRILL CATCHES Secretariat
SC-CAMLR-VIII/BG/1 Rev. 1	SUMMARY OF KRILL CATCHES Secretariat
SC-CAMLR-VIII/BG/2	SUMMARY OF FISHERIES DATA Secretariat
SC-CAMLR-VIII/BG/2 Rev. 1	SUMMARY OF FISHERIES DATA Secretariat
SC-CAMLR-VIII/BG/3	RESEARCH PROGRAMS OF CCAMLR MEMBERS FOR 1989/90, 1990/91 AND 1991/92 Secretariat
SC-CAMLR-VIII/BG/4	PROPOSALS OF STANDARDISATION OF COMPLEX INVESTIGATIONS AIMED AT CREATION OF A SYSTEM OF BIOLOGO-OCEANOGRAPHIC MONITORING IN THE ANTARCTIC WATER Delegation of USSR

SC-CAMLR-VIII/BG/5	METHODICAL INSTRUCTIONS IN CONSTRUCTION OF A MODEL OF THE QUANTITATIVE DISTRIBUTION OF KRILL BY DATA OBTAINED IN OCEANOGRAPHICAL, BIOLOGICAL AND HYDROACOUSTIC SURVEYS Delegation of USSR
SC-CAMLR-VIII/BG/6	PRIMARY RESULTS OF KRILL STUDIES DURING THE RESEARCH CRUISE OF RV *DIMITRY MENDELEEV* (February – April 1989) USSR (Available in Russian only)
SC-CAMLR-VIII/BG/7	SUMMARISED RESULTS OF AN INTEGRATED FISHERIES SURVEY IN THE 1987/88 SEASON USSR (Available in Russian only)
SC-CAMLR-VIII/BG/8	RESULTS OF INVESTIGATIONS OF THE DISTRIBUTION AND FISHERY FOR KRILL IN A LOCAL AREA OFF SOUTH ORKNEYS Delegation of USSR
SC-CAMLR-VIII/BG/9	THE INFLUENCE OF THE SHAPE OF MESHES ON THE SELECTIVE PROPERTIES OF TRAWLS WITH SPECIAL REFERENCE TO ANTARCTIC KRILL Delegation of USSR
SC-CAMLR-VIII/BG/10	ASSESSMENT OF KRILL BIOMASS IN FISHING GROUNDS USING THE DATA ON FISHING INTENSITY AND HYDROACOUSTIC METHOD Delegation of USSR
SC-CAMLR-VIII/BG/11	COMMERCIAL KRILL FISHERIES IN THE ANTARCTIC 1973–1988 Delegation of South Africa
SC-CAMLR-VIII/BG/12	IMPACT OF SEABIRDS ON MARINE RESOURCES, ESPECIALLY KRILL, OF SOUTH GEORGIA WATERS Delegation of United Kingdom
SC-CAMLR-VIII/BG/13	FORAGING ENERGETICS OF ANTARCTIC FUR SEALS IN RELATION TO CHANGES IN PREY AVAILABILITY Delegation of United Kingdom

SC-CAMLR-VIII/BG/14	THE REPRODUCTIVE ENERGETICS OF GENTOO (*PYGOSCELIS PAPUA*) AND MACARONI (*EUDYPTES CHRYSOLOPHUS*) PENGUINS AT SOUTH GEORGIA Delegation of United Kingdom
SC-CAMLR-VIII/BG/15	SEABIRDS AS PREDATORS ON MARINE RESOURCES, ESPECIALLY KRILL, AT SOUTH GEORGIA Delegation of United Kingdom
SC-CAMLR-VIII/BG/16	REPRODUCTION IN THE ANTARCTIC ICEFISH *CHAMPSOCEPHALUS GUNNARI* AND ITS IMPLICATIONS FOR FISHERIES MANAGEMENT IN THE ATLANTIC SECTOR OF THE SOUTHERN OCEAN Delegation of Federal Republic of Germany
SC-CAMLR-VIII/BG/17	TOWARDS AN INITIAL OPERATIONAL MANAGEMENT PROCEDURE FOR THE KRILL FISHERY IN SUBAREAS 48.1, 48.2 AND 48.3 Delegation of South Africa
SC-CAMLR-VIII/BG/18	THE STATE OF EXPLOITED FISH STOCKS IN THE ATLANTIC SECTOR OF THE SOUTHERN OCEAN Delegation of the Federal Republic of Germany
SC-CAMLR-VIII/BG/19	THE RELATIONSHIP BETWEEN KRILL (*EUPHAUSIA SUPERBA*) FISHING AREAS IN THE WEST ATLANTIC AND THE SPECIES' CIRCUMPOLAR DISTRIBUTION Delegation of South Africa
SC-CAMLR-VIII/BG/20	EVALUATION OF THE RESULTS OF TRAWL SELECTIVITY EXPERIMENTS BY POLAND AND SPAIN IN 1978/79 AND 1986/87 W. Slosarczyk (Poland), E. Balguerias (Spain), K. Shust (USSR), and S. Iglesias (Spain)
SC-CAMLR-VIII/BG/20/Rev. 1	EVALUATION OF THE RESULTS OF TRAWL SELECTIVITY EXPERIMENTS BY POLAND, SPAIN AND USSR IN 1978/79, 1981/82 AND 1986/87 W. Slosarczyk (Poland), E. Balguerias (Spain), K. Shust (USSR), and S. Inglesias (Spain)
SC-CAMLR-VIII/BG/21	POPULATION SUBDIVISION AND DISTRIBUTION OF *EUPHAUSIA SUPERBA* IN THE REGION OF THE ANTARCTIC PENINSULA AND ADJACENT WATERS IN RELATION TO FISHERY DEVELOPMENT Delegation of USSR

SC-CAMLR-VIII/BG/22	GROWTH AND MATURATION OF *EUPHAUSIA SUPERBA DANA* IN NORTHERN AREAS OF ITS DISTRIBUTION RANGE (WITH REFERENCE TO SOUTH GEORGIA AND BOUVET ISLAND AREAS) Delegation of USSR
SC-CAMLR-VIII/BG/23	ANALYSIS OF OPERATING CONDITIONS OF THE FISHING VESSEL IN RELATION TO THE DISTRIBUTION, BIOLOGICAL STATE AND BEHAVIOUR OF ANTARCTIC KRILL (A CONTRIBUTION TO THE DEVELOPMENT OF A SIMULATION MODEL) Delegation of USSR
SC-CAMLR-VIII/BG/24	DATES OF SPAWNING OF ANTARCTIC EUPHAUSIIDS Delegation of USSR
SC-CAMLR-VIII/BG/25	EXPLORATORY SQUID FISHING IN THE VICINITY OF SOUTH GEORGIA AND THE ANTARCTIC POLAR FRONTAL ZONE, FEBRUARY 1989 Delegation of United Kingdom
SC-CAMLR-VIII/BG/26	PRELIMINARY OBSERVATIONS ON THE SUITABILITY OF SEMIPELAGIC TRAWL GEAR IN THE FISHERIES OF ICE FISH (*CHAMPSOCEPHALUS GUNNARI*, LONNBERG, 1905) Delegation of Spain (Spanish original, partially translated)
SC-CAMLR-VIII/BG/27	SOME DATA ON THE DISTRIBUTION, ABUNDANCE AND BIOLOGY OF *PATAGONOTOTHEN BREVICAUDA GUNTHERI* (NORMAN, 1937) IN SHAG ROCKS Delegation of Spain
SC-CAMLR-VIII/BG/28	CPUES AND BODY LENGTH OF ANTARCTIC KRILL DURING 1986/87 SEASON IN THE FISHING GROUND NORTHWEST OF ELEPHANT ISLAND Delegation of Japan
SC-CAMLR-VIII/BG/29	COMPARISON OF BODY LENGTH OF ANTARCTIC KRILL COLLECTED BY A TRAWL NET AND *KAIYO MARU* MIDWATER TRAWL Delegation of Japan

SC-CAMLR-VIII/BG/30	TARGET STRENGTH ESTIMATION OF ANTARCTIC KRILL, *EUPHAUSIA SUPERBA* BY COOPERATIVE EXPERIMENTS WITH COMMERCIAL TRAWLERS Delegation of Japan
SC-CAMLR-VIII/BG/31	DISTRIBUTION OF ANTARCTIC KRILL CONCENTRATIONS EXPLOITED BY JAPANESE KRILL TRAWLERS AND MINKE WHATES Delegation of Japan
SC-CAMLR-VIII/BG/32	DETERMINATION OF A STATISTICALLY BASED SURVEY AREA SUITABLE FOR HYDROACOUSTIC STOCK ASSESSMENT OF *EUPHAUSIA SUPERBA* IN THE ELEPHANT ISLAND, KING GEORGE ISLAND, BRANSFIELD STRAIT AREA Delegation of USA
SC-CAMLR-VIII/BG/33	HYDROACOUSTIC SURVEY OF ELEPHANT ISLAND AND THE VICINITY OF KING GEORGE ISLAND, AUSTRAL SUMMER 1989 Delegation of USA
SC-CAMLR-VIII/BG/34	SHIPBOARD FIELD OPERATIONS CONDUCTED DURING THE 1989 AUSTRAL SUMMER BY THE US ANTARCTIC MARINE LIVING RESOURCES (AMLR) PROGRAM Delegation of USA
SC-CAMLR-VIII/BG/35	STATUS OF THE STOCKS OF ANTARCTIC DEMERSAL FISH IN THE VICINITY OF SOUTH GEORGIA ISLAND, JANUARY 1989 Delegation of USA
SC-CAMLR-VIII/BG/36	DISTRIBUTION AND ABUNDANCE OF LARVAL FISHES COLLECTED IN THE WESTERN BRANSFIELD STRAIT REGION, 1986–87 Delegation of USA
SC-CAMLR-VIII/BG/37	EUPHAUSIID POPULATIONS SAMPLED DURING THE US ANTARCTIC MARINE LIVING RESOURCES (AMLR) PROGRAM OPERATIONS IN THE SHETLAND ISLAND AREA, JANUARY–FEBRUARY, 1988 Delegation of USA

SC-CAMLR-VIII/BG/38	UNITED STATES SEABIRD RESEARCH UNDERTAKEN AS PART OF THE CCAMLR ECOSYSTEM MONITORING PROGRAM AT PALMER STATION, 1988/89 Delegation of USA
SC-CAMLR-VIII/BG/39	PRELIMINARY REPORT OF THE US CEMP SEABIRD RESEARCH AT SEAL ISLAND, ANTARCTICA, 1988/89 Delegation of USA
SC-CAMLR-VIII/BG/40	PRELIMINARY REPORT OF THE 1988/89 UNITED STATES ANTARCTIC MARINE LIVING RESOURCES PROGRAM MARINE MAMMAL AND BIRD FIELD RESEARCH Delegation of USA
SC-CAMLR-VIII/BG/41	STATISTICAL POWER TO DETECT CHANGES IN GROWTH RATES OF ANTARCTIC FUR SEAL PUPS Delegation of USA
SC-CAMLR-VIII/BG/42	EFFECTS OF VARIABLE RECRUITMENT ON THE POTENTIAL YIELD OF THE *C. GUNNARI* STOCK AROUND SOUTH GEORGIA Delegation of United Kingdom
SC-CAMLR-VIII/BG/43	KRILL FISHING, ANALYSIS OF FINE SCALE DATA REPORTED TO CCAMLR Delegation of United Kingdom
SC-CAMLR-VIII/BG/44	THE FINE SCALE DISTRIBUTION OF KRILL IN AREA 48 DURING 1987 AND 1988 Secretariat
SC-CAMLR-VIII/BG/45	BIBLIOGRAPHY OF ANTARCTIC FISH Delegation of Federal Republic of Germany
SC-CAMLR-VIII/BG/46	CCAMLR ANTARCTIC FISH OTOLITHS/SCALES/ BONES EXCHANGE SYSTEM Convener of the Fish Stock Assessment Working Group
SC-CAMLR-VIII/BG/47	EFFECTS OF DIFFERENT HARVESTING STRATEGIES ON THE STOCK OF ANTARCTIC ICEFISH *CHAMPSOCEPHALUS GUNNARI* AROUND SOUTH GEORGIA Delegation of Federal Republic of Germany

SC-CAMLR-VIII/BG/48	NEW DATA ON OCCURRENCE OF FISH IN THE STOMACHS OF ANTARCTIC SEALS Delegation of USSR
SC-CAMLR-VIII/BG/49	VARIATION OF ICE EDGE POSITION IN WESTERN PART OF ATLANTIC SECTOR OF THE ANTARCTIC Delegation of USSR
SC-CAMLR-VIII/BG/50	STRATEGIC PLANNING FOR U.S. ANTARCTIC MARINE LIVING RESOURCES Delegation of USA
SC-CAMLR-VIII/BG/51	DEVELOPMENT OF THE CCAMLR ECOSYSTEM MONITORING PROGRAM 1982 – 1989 Secretariat
SC-CAMLR-VIII/BG/52	THE FIFTH ANTARCTIC OCEAN SURVEY CRUISE OF JFA R.V. *KAIYO MARU*, SUMMARY OF RESULTS Delegation of Japan
SC-CAMLR-VIII/BG/53	THE DIET OF ANTARCTIC FUR SEALS *ARCTOCEPHALUS GAZELLA* DURING THE BREEDING SEASON AT HEARD ISLAND Delegation of Australia
SC-CAMLR-VIII/BG/54	DEVELOPMENT OF A LONGLINE DATA RECORDING SHEET Secretariat
SC-CAMLR-VIII/BG/55	REPORT OF THE 77TH STATUTORY MEETING OF THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA CCAMLR Observer (O.J. Østvedt)
SC-CAMLR-VIII/BG/56	RESPONSES TO QUESTIONS ON THE DEVELOPMENT OF APPROACHES TO THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES
SC-CAMLR-VIII/BG/57	PARTICIPATION OF THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION IN THE STUDIES OF THE SOUTHERN OCEAN IOC Observer

ANNEX D

THE EXECUTIVE SECRETARY'S REPORT ON THE MEETING OF THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE (SCAF)

THE EXECUTIVE SECRETARY'S REPORT OF THE MEETING OF THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE (SCAF)

The Committee met on 6 and 9 November, 1989 under the Chairmanship of Dr C. Vamvakas (EEC) and considered the following items:

1. Examination of Audited Financial Statements for 1988
2. Review of Budget for 1989
3. Draft Budget for 1990 and Forecast Budget for 1991
4. Executive Secretary (Term of Appointment)
5. Review of Levels of the Professional Staff
6. Translation of Documents

EXAMINATION OF AUDITED FINANCIAL STATEMENT FOR 1988

2. The Committee had before it document CCAMLR-VIII/4 'Examination of the Audited Financial Statements'.

3. The Auditor had reported that:

> 'The Statements are based on proper accounts and records; the income, expenditure and investment of moneys and the acquisition and disposal of assets by the Commission during the year ending 31 December, 1988 have been in accordance with the Regulations.'

4. The Auditor also reported that the Statements accorded with International Accounting Standards. The Committee noted that there were no qualifications to the financial statements by the Auditor.

5. The Committee agreed that in accordance with Financial Regulation 12.1, the Commission should signify its acceptance of the financial statements.

REVIEW OF BUDGET FOR 1989

6. The Administration and Finance Officer introduced document CCAMLR-VIII/5, explained the likely outcome of the 1989 budget and informed the Committee that no expenditures were expected to exceed the approved appropriations.

7. The Committee noted that all contributions to the 1989 Budget have now been paid.

8. As requested at the Sixth Meeting, the Executive Secretary had provided a statement of the financial consequences of late payment of Members' contributions. The UK Delegation expressed its regret concerning the loss of interest due to late payment of contributions by some Members.

DRAFT BUDGET FOR 1990

9. The budget paper was presented in the previously agreed format which distinguishes recurrent from non-recurrent expenditures. The objective of zero real growth in recurrent expenditure had again been achieved.

10. The Committee was informed that Sweden had notified Members of its interest in participating in the work of the Commission and had submitted supporting information through the Depositary nation on 30 October 1989. If no objections are received, Sweden will become a Member on 30 December, 1989 and will thus make a contribution to the 1989 Budget. The amount will be credited to the 1990 Members' Contributions if it is received before calculations are finalised in January 1990. Otherwise, the credit will have to be held over until 1991.

11. An additional allocation was added to the draft budget presented in CCAMLR-VIII/5 for the purchase of a micro computer. The Working Group on Fish Stock Assessment (WG-FSA) recommended that the Secretariat purchase a machine capable of handling assessment programs currently in use among participants in the Working Group. The availability of such a machine would make it much easier for participants to recalculate the results of their assessments using input agreed by the WG-FSA. The Scientific Committee supported the recommendation of the WG-FSA.

12. The Committee was reminded that a budget provision may be required for the publication of a handbook by the Standing Committee on Observation and Inspection. It is expected that further advice will be available on this matter during the meeting. The draft 1990 budget will then be revised accordingly.

BUDGET RATE OF GROWTH

13. The proposed 1990 expenditure of A$1 158 300 represents a nominal decrease of 4.7% over that of the approved 1989 budget. The rate of inflation for Australia in 1990 is expected to be around 7.2%, thus the 1990 expenditure will decrease by 11.9% in real terms. If the expenditure is divided into recurrent and non-recurrent items, according to the Commission's practice, recurrent expenditure in 1990 decreases in real terms by 1.5%.

USSR	A$75 339
Japan	A$47 754
Sweden	A$48 382
18 other Members	A$43 340

15. The French Delegation expressed satisfaction with the healthy financial position of the Commission and the speed at which the Standing Committee on Administration and Finance is now able to proceed with its work. It was suggested that this might justify a change in the structure of the meeting to reduce the time for which the Commission's representatives were required to attend.

FORECAST 1991 BUDGET

16. Most items in the Forecast 1991 Budget are calculated on the basis of the 1990 figures, allowing 6.4% for inflation in 1991. The Committee was informed that the arrangement to use the Australian Antarctic Division's central computer system had worked well during 1989 and Members again expressed their appreciation to Australia for making these facilities available. It was noted that an amount of A$64 000 was included in the 1991 estimates as a contingency in case an increase in computer usage by the Secretariat or the Antarctic Division necessitates a change to this arrangement.

17. The Committee was advised by the Australian delegation that the Antarctic Division was happy to continue with the present arrangement until at least 1991 and there was no need to include this figure.

18. The United Kingdom Delegation thought it would be wise to seek the Scientific Committee's advice on the projected requirements for data storage in case the growth in this area might be such as to exceed the capacity currently available and necessitate the purchase of a mini computer in the next few years.

19. After receiving the advice of the Scientific Committee, the Committee agreed there was no need to include a forecast allocation for this purpose in 1991.

SECRETARIAT STAFFING

20. The Executive Secretary introduced the paper, 'Review of Levels of Professional staff in the CCAMLR Secretariat', document number CCAMLR-VIII/6.

21. The Committee noted the large amount of work which had gone into the review and delegates expressed satisfaction with its conduct and outcome. The International Civil Service Commission had found the existing levels to be appropriate to the Secretariat's responsibilities and functions.

22. It was suggested that the professional staff job descriptions be amended to reflect the findings of the staff rating review.

EXECUTIVE SECRETARY (TERM OF APPOINTMENT)

23. The Committee agreed that the matter of the term of appointment of the Executive Secretary would best be handled initially through informal consultations conducted by the Chairman of the Commission.

24. Following such consultations the Chairman informed the Committee that there was unanimous support for the re-appointment of Dr Powell.

25. The Chairman reported that some Members had suggested that in view of the time element involved in the adopted procedures for the appointment of future Executive Secretaries, it would be wise to address the question of the Term of Appointment of the Executive Secretary at an earlier meeting in the future.

TRANSLATION OF DOCUMENTS

26 The Executive Secretary gave an overview of the staffing arrangements for providing translation services for meetings and the intersessional period. The Secretariat's translation team had

been built up following last years modest start and all translation for this meeting was being provided by the CCAMLR team.

27. The Executive Secretary explained that the translators are locally recruited and are employed on a part-time casual basis. Their rates of pay are based on comparable positions and levels in the Australian Government Service.

28. It was suggested that it would be necessary to provide a measure of security to these staff and, from the Commission's viewpoint, to provide the necessary conditions so as to retain their expertise as the team develops.

29. In response to these comments the Executive Secretary informed the Committee that the employment of the translators in 1989 had been treated as a trial. The comments he had received from Members on the quality of the work indicated that there had been improvement. All documentation in the four official languages was being received much sooner than previously, and the costs had been kept within the budgetary allocations. In view of these results, in 1990 he intended to employ the translators under contractual arrangements similar to the other locally recruited staff in the Secretariat. These arrangements are in accordance with Staff Regulation 11.

30. The Executive Secretary said that he appreciated the assistance the Secretariat had received with terminology and asked delegations to continue to provide comments on the quality of translations.

31. The meeting concluded on 9 November with the Chairman expressing his gratitude to the participants for their cooperation and to the Executive Secretary and Finance Officer for the concise presentation of information and to the Chairman of the Scientific Committee for the assistance in the discussions of the Scientific Committee's budget.

PROJECTED INCOME AND EXPENDITURE 1989, BUDGET 1990 AND FORECAST BUDGET 1991 (Australian Dollars)

1989 BUDGET			DRAFT BUDGET 1990 & FORECAST BUDGET 1991			
(1)	(2)	(3)			(4)	(5)
Budget Adopted 1989	Estimates Projected to 31.12.89	Variance with Budget	Item	Sub Item	1990	1991
			INCOME			
960,258	912,191	-48,067		Members' Contributions	951,600	1,130,200
				Items from Previous Year		
0	0	0		• Arrears of Contributions	0	0
60,000	59,153	-847		• Interest	60,000	60,000
0	0	0		• Members' Contributions	0	0
27,342	27,342	0		• New Members' Contributions	0	0
76,200	80,250	4,050		• Staff Assessment Levy	70,000	90,700
91,500	136,364	44,864		• Surplus	76,700	0
1,215,300	1,215,300	0		Total Income	1,158,300	1,280,900
			EXPENDITURE			
			DATA MANAGEMENT			
6,000	5,000	1,000		Capital Equipment	12,700	0
4,400	3,000	1,400		Consumables	3,200	3,400
22,900	22,900	0		Contract Labour	30,000	32,000
16,400	16,400	0		Maintenance	9,600	10,200
4,400	4,200	200		Time Share Usage	4,600	4,900
54,100	51,400	2,600	Total Data Management		60,100	50,500
			MEETINGS			
304,100	304,100	0	Total Meetings		326,000	346,800
			PUBLICATIONS			
87,700	87,700	0	Total Publications		94,000	100,000
			SCIENTIFIC COMMITTEE			
109,700	109,700	0	Total Scientific Committee		86,000	125,000
			SECRETARIAT COSTS			
23,400	23,400	0		Administration	15,800	16,800
155,100	109,000	46,100		Allowances	60,800	93,100
4,000	4,000	0		Automobile	4,300	4,500
23,100	23,100	0		Communication	24,700	26,300
3,100	3,100	0		Incidentals	3,300	3,500
3,100	3,100	0		Library	3,300	3,500
21,900	21,900	0		Office Requisites	23,400	25,000
7,200	7,200	0		Premises	7,700	8,200
397,600	369,600	28,0000		Salaries	426,200	453,500
21,200	21,200	0		Travel	22,700	24,200
659,700	585,600	74,100	Total Secretariat Costs		592,200	658,600
1,215,300	1,138,600	76,700	Total Expenditure		1,158,300	1,280,900

* Note: In addition to the Scientific Committee 1990 amount a sum of $A20500 has been drawn from the Norwegian Contribution Special Fund to meet the total Scientific Committee Program of $A106500.

ANNEX E

REPORT OF THE MEETING OF THE WORKING GROUP FOR THE DEVELOPMENT OF APPROACHES TO CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (WG-DAC)

REPORT OF THE MEETING OF THE WORKING GROUP FOR THE DEVELOPMENT OF APPROACHES TO CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (WG-DAC)

The Commission's Working Group for the Development of Approaches to Conservation of Antarctic Marine Living Resources (WG-DAC), chaired by Australia, met on 9 October 1989.

2. The Commission had agreed at CCAMLR-VII that the Working Group should communicate intersessionally concerning the future direction of its work (CCAMLR-VII, paragraph 150). Accordingly the Convener circulated a discussion paper (WG-DAC-89/3) proposing that the development of approaches to conservation for new and developing fisheries, other than krill, would be a suitable task for the Working Group to address at this year's meeting. It had also been agreed at CCAMLR-VII that some questions formulated by the Working Group should be directed to the Scientific Committee (CCAMLR/VII, paragraphs 140 to 141).

3. Two papers were submitted in response to the Convener's discussion paper, WG-DAC-89/4 and WG-DAC-89/5. These papers are attached as Appendices 1 and 2.

4. In presenting its paper (WG-DAC-89/5), Norway suggested that the general objectives of CCAMLR as set out in Article II of the Convention require an approach to fishery management basically different from that presently being applied in most regions of the world. Although multi-species models are being developed successfully in many regions, single species management systems will probably still be applied in the CCAMLR Convention Area for several years. An effective 'ecosystem approach' is still far away.

5. Norway also suggested that the development of an ecosystem conservation strategy in the Antarctic context requires extensive research, and that it is essential that the Commission draw on the expertise of the Scientific Committee and its subsidiary bodies to outline required scientific tasks and areas of immediate priority. In this context attention was drawn to:

(a) the scientific resources necessary to obtain the data required to implement an appropriate strategy; and

(b) the resources necessary to enforce conservation measures.

It was suggested that if lack of data prevents a more comprehensive conservation strategy, the introduction of precautionary conservation measures on an interim basis should be considered.

6. Norway also drew attention to the importance of exploratory fishing in allowing an evaluation of stock abundance and its composition, but noted that to prevent possible excessive catches, exploratory fishing needs to be conducted under some kind of control. Norway stressed the importance of some issues mentioned in the Convener's discussion paper where the advice of the Scientific Committee would be required and suggested that the Working Group specify questions that should be addressed by the Scientific Committee at its 1990 Meeting.

7. The Australian paper (WG-DAC-89/4) addressed the question of approaches to conservation of new and developing fisheries. The paper drew on submissions to the Working Group at CCAMLR-VII to derive a list of factors relating to the viability of fisheries and the maintenance of the Antarctic marine ecosystem which must be reconciled for the objectives of the Convention to be achieved. These are:

(a) the objectives of fishing operations;

(b) conservation of target species;

(c) maintenance of the relevant ecosystem;

(d) the objectives of other activities in that ecosystem; and

(e) the cost and feasibility of assessing the extent to which the various objectives are being met.

8. Australia suggested that the Commission should be notified of an impending fishery so that it may conduct a preliminary evaluation of the fishery, and formulate approaches to conservation before the fishery develops beyond the exploratory phase. In making this evaluation, Australia suggested that the Commission would need to have and consider the following information:

(a) the proposed fishing operation, including target species, methods of fishing, proposed region, and any minimum level of catches that would be required to develop a viable fishery;

(b) details of the stock size and general distribution, abundance and demography of the target species;

(c) a description of the components of the 'apparent' ecosystem which encapsulates the proposed fishery, highlighting those species at the primary level and their likelihood of

being affected in some way by the proposed fishery, including summaries of current applicable scientific knowledge; and

(d) a review of other fisheries that may have similar effects on the same or related components of the Antarctic marine ecosystem as the proposed fishery.

9. This paper suggested that the Commission's aim in considering this information would be to investigate an 'upper level' below which commercial development of the proposed fishery could begin. In addressing this question the Commission would need the advice of the Scientific Committee on two key questions:

(a) the types of information that are required to evaluate the potential yield of stocks; and

(b) the measures that could be useful for ensuring a suitable level of escapement of the target species from the fishery during the development phase.

On the basis of this information the Commission could determine the initial upper levels to fishing activity (in terms of catch, effort, area, time, or a combination of these) and appropriate management areas, and adjust management measures after assessment of the effects of fishing at the initial level.

10. These papers were noted with interest and it was agreed that the approach to be taken in relation to new and developing fisheries was a key issue for the Commission to consider, and one which required further discussion.

11. The responses of the Scientific Committee to questions posed in the CCAMLR-VII Report were not available in time for the Working Group to consider at its meeting.

12. A list of documents is attached as Appendix 3.

APPENDIX 1
(WG-DAC-89/4)

APPROACHES TO CONSERVATION IN NEW OR DEVELOPING FISHERIES

In fulfilling the objectives of the Convention for the Conservation of Antarctic Marine Living Resources, the Commission needs to adopt approaches to conservation for new or developing fisheries. This paper examines the development of a fishery in accordance with the ecosystem approach to management. It synthesizes points already raised in the submissions to the Working Group for the Development of Approaches to Conservation (WG-DAC) over the last two years and, from these, suggests a framework for the assessment and monitoring of the fisheries, the effects the fisheries have on the ecosystem and the extent to which the objectives of the Convention are being met.

2. The objectives and principles of conservation, fully set out in Article II, were summarized in paragraph 114 of CCAMLR-VI as:

(a) maintenance of ecological relationships;

(b) maintenance of populations at levels close to those which ensure the greatest net annual increment;

(c) restoration of depleted populations; and

(d) minimisation of the risk of irreversible change in the marine ecosystem.

The term 'conservation' includes rational use. The Commission (CCAMLR-VII, paragraph 139) agreed that, for the purposes of the Working Group, the definition of rational use includes the following elements:

(a) that the harvesting of resources is on a sustainable basis;

(b) that harvesting on a sustainable basis means that harvesting activities are so conducted as to ensure that the potential for achieving the highest possible long-term yield is preserved, subject to the principles of conservation above; and

(c) that the cost-effectiveness of harvesting activities and their management is given due weight.

3. Submissions to the first meeting of the Working Group at CCAMLR-VI implied that, for these objectives to be achieved, conservation approaches must reconcile the following factors concerned with the viability of fisheries and the maintenance of the Antarctic marine ecosystem:

(a) objectives of fishing operations;

(b) conservation of target species;

(c) maintenance of the relevant ecosystem;

(d) objectives of other activities in that ecosystem; and

(e) the cost and feasibility of assessing the extent to which the various objectives are being met.

4. The United Kingdom noted that 'the Commission must guard against the consequences of its own ignorance and cannot proceed on an assumption that an action now which is inconsistent with ... provisions of Article II is somehow acceptable because it might be reversible in 20 to 30 years' (WG-CSD-87/13). Other Members, including Argentina, Japan and the USA, have reiterated the need for the assembly of the best scientific evidence available for determining and evaluating approaches to conservation, required by Articles II and IX. The EEC mentioned that 'there is a need to ensure that a new fishery does not develop beyond the potential of the resource' (WG-CSD-87/7). In particular, the USA explicitly stated that for stocks in the undepleted state, 'the primary management strategy would be prevention of depletion ... based on long-term, theoretical principles' (WG-CSD-87/14).

5. In light of these discussions, the Commission's task concerning new or developing fisheries is to ensure that the amount of fishing that occurs in the developing phase is in accordance with the overall objectives of the Convention. This requires that catches do not develop to a level where there is a substantial risk that a stock is reduced to below the level giving the greatest net annual increment (GNA) before the potential long-term yield of the fishery can be evaluated. Consequently, we suggest that the Commission be notified of an impending fishery so that it may conduct a preliminary evaluation of the fishery and formulate approaches to conservation before the fishery develops beyond the exploratory phase.

NOTIFICATION

6. The Commission, in developing approaches to conservation for a particular fishery, needs to consider the best scientific information available on how the fishery will interact with the Antarctic ecosystem and other activities, as well as any difficulties that there may be in assessing the possible effects of the fishery on the target stock and dependent species. Details of the proposed fishing activity will set the agenda for the considerations set out in the five factors listed above. The details would need to include designation of the species to be targeted, the equipment to be used (e.g. vessel and gear types), the location in which the proposed fishing is to take place, and such details of the operational tactics that will determine when, where and how much of the target species will be taken. (This type of information on operational tactics has already shown its usefulness in developing an understanding of possible assessment methods for the krill fishery [SC-CAMLR-VII/BG/12 and 37]).

7. The type of approach chosen to conserve the target stock is also likely to depend on the long-term subsidiary objectives of the fishery, e.g. the rate at which the fishing could develop and whether it is preferable to maintain catches nearly constant or for catches to fluctuate with changes in biomass. At the meeting of the Working Group last year, the USSR and Japan noted that it is difficult to detail long-term fishing plans because of market fluctuations or the need to change from one target species to another when fishing conditions alter. However, these difficulties are also important considerations in the formulation of approaches to conservation.

8. Information concerning the size of the target stock, as well as its general distribution, local abundance and demography is necessary. The regions from which such information needs to be compiled will depend on the intentions of the fishery. The need to assess the potential of a stock prior to substantial fishing has been a common element in all the submissions to this Working Group. It is the responsibility of the Scientific Committee to evaluate the knowledge of the target species and to determine what further information is required so that the Commission can consider approaches to conservation for the proposed fishery.

9. Previous submissions, including those from Argentina, Australia, Japan, South Africa, the USSR and the USA, highlighted the need to define the important aspects of the ecosystem before conservation measures can be set in place. The USSR pointed out that the Southern Ocean should be viewed as comprising many sub-systems. The Working Group 'agreed that the Antarctic should not be regarded as a single ecosystem but, rather, as a set of linked sub-systems subject to widely differing levels of exploitation in which the potential effects of fisheries on related sub-systems would have to be considered' (CCAMLR-VII, paragraph 143).

10. Given the limited resources available to the Commission and the enormity of the task of defining all the sub-systems and their intra- and inter-relationships, the ecosystem or sub-system requiring the attention of the Commission should be that which encapsulates the proposed fishery. If we consider the target species as being a the centre of its 'apparent' ecosystem, then the primary interactions important to the well-being of that species, and to the objectives of the Convention, are those with its predators, competitors and prey. Secondary or indirect interactions are those with the predators of predators or prey of prey and such like. The total number of interactions between species is impractically large to consider. Therefore, we need to limit the extent of consideration of ecological interactions. If the deleterious effects of fishing on primary interactions are within the objectives of the Convention it is unlikely that secondary interactions will be affected to any greater degree. In other words, assessing the effects of fishing on the most important species in the apparent ecosystem of the target species should be sufficient in most cases. Similarly, the predators of the target species are the species likely to be deleteriously affected by the effects of the fishery, rather than the prey of the target species. Top predators can probably be managed satisfactorily on traditional single species lines.

11. The definition of an apparent ecosystem will also be useful in the development of approaches to conservation for cases where two or more fisheries (or the needs of depleted species) are assessed. By defining the apparent ecosystem for each fishery, the Commission will be able to consider whether they need to be managed jointly rather than independently. For example, if two fished stocks do no have the same predators then the combined impact of the two fisheries would probably be small. In cases where two targeted species had common predators then the level of fishing on one or both stocks may need to be lower to protect the predators from the reduction of two food sources. As the USA pointed out, there will be a greater risk of failing to meet the objectives as the difference between apparent ecosystems becomes less (WG-CSD-87/14). It is likely that multi-species approaches to conservation will need to be formulated if and when these situations arise.

12. In summary, the initial stage in the development of a fishery should involve the consideration of the following information by the Commission:

(a) the proposed fishing operation, including target species, methods of fishing, proposed region and any minimum level of catches that would be required to develop a viable fishery;

(b) details of the stock size and general distribution, abundance and demography of the target species;

(c) a description of the components of the apparent ecosystem, highlighting those species at the primary level and their likelihood of being affected in some way by the proposed fishery, including summaries of current applicable scientific knowledge; and

(d) a review of other fisheries that may have similar effects on the same or related components of the Antarctic marine ecosystems as the proposed fishery.

The first two descriptions would be supplied by those proposing to establish the fishery while the latter two summaries would be compiled by both the Scientific Committee and its relevant working groups.

PRELIMINARY ASSESSMENT AND FISHERY DEVELOPMENT

13. The primary aim of the preliminary assessment would be for the Commission to use the information provided to investigate an 'upper level' below which commercial development of the proposed fishery can begin. This upper level could be specified in terms of catch, effort, area, time, or a combination of these. Exploratory fishing would provide much of the data for the initial assessment, such as surveys and biological sampling. The level of exploratory fishing should be sufficient for the commercial evaluation of the stock. A few designated vessels would be able to carry out this exploration with catches in the order of hundreds of tonnes.

14. Commercial development of the fishery would begin when the Commission is satisfied that the risk of failing to meet the objectives of the Convention is acceptable when using the approach to conservation adopted, including the designated initial upper level.

15. There are two possible outcomes to a preliminary investigation. First, sufficient information may be available to determine approximately the upper level on which to base the amount of fishing. The second, and more difficult situation, is where it is not possible to collect sufficient data to make such approximations. In this case, the Commission should be prudent in designating the upper level but, equally, it needs to attempt to identify roughly the level of fishing that the ecosystem might support. This may be possible with further exploratory fishing. In either case, the Commission needs to choose a rate of exploitation that is sufficiently high to produce some effects of fishing, but not so high that the stock might be depleted substantially below its GNAI before the effects of fishing are detected. As a result, the estimate of yield can be improved without damaging the potential of the fishery or the ecosystem.

16. Experimental approaches to fisheries management and conservation could be very useful, particularly in the more difficult cases. Further, a series of open and closed areas would help maintain essential ecological processes, ensure stock escapement and provide a means for designating different approaches to conservation when there are competing needs within regions of the Southern Ocean.

17. In formulating a policy on the upper level, the Commission will need the advice of the Scientific Committee on the following two questions:

(a) the types of information that are required to evaluate the potential yield of stocks; and

(b) the measures that could be useful for ensuring a suitable level of escapement of the target species from the fishery during the development phase.

18. The EEC suggested that initial catch levels, such as those in both the above cases, be maintained for a number of years to provide adequate assessment of the effects of the exploitation on the ecosystem (WG-CSD-87/7). During this period, a thorough collection of data should be made in the designated fishing region on fishing operations, target and selected consumer species in the primary level of the apparent ecosystem, and on the physical environment. This data can be used for re-assessing and modifying the conservation approach, or establishing a new one, using the iterative approaches suggested by South Africa (WG-CSD-87/11).

19. Australia and South Africa also believed that the further development of the commercial fishery should be at a rate that does not outpace the ability of the Commission to monitor and assess its impact (WG-CSD-87/6 and 11), thereby avoiding the problems of over-exploitation and the management of depleted stocks outlined by the USA (WG-CSD-87/14). A form of feedback management (see WG-CSD-87/6) could be an appropriate approach, where conservation measures are considered and evaluated in response to needs of the fishing parties to increase yields, or if data collected in the course of monitoring indicated that recruitment was failing in exploited or dependent species.

20. The Technical Sub-Group advised that numerical modelling could be the most useful technique for assessing potential approaches to conservation (CCAMLR-VII, Addendum, Annex 1, paragraph 16). It considered that field trials were unacceptable because of the risk of failure to meet the objectives should an approach prove inadequate. A modelling approach, based on data of the available quality, can provide the Commission with an objective procedure for choosing an approach to conservation using estimates of the risk of failure to meet the objectives. Such modelling may also point to the need for more or different kinds of data.

21. In summary, this paper suggests that an approach to conservation for new or developing fisheries should include the following elements;

(a) notification of a proposed fishery;

(b) collation of information concerning the proposed fishery, the apparent ecosystem and other existing activities;

(c) the determination of initial upper levels to fishing activity (in terms of catch, effort, area, time or a combination of these);

(d) the designation of management areas;

(e) assessment of the effects on the stock and its apparent ecosystem of fishing at the initial level; and

(f) continued feedback management to adjust the fishery in light of new information concerning the status of the ecosystem and the needs of the fishery.

APPENDIX 2
(WG-DAC-89/5)

CONSIDERATION OF A MANAGEMENT STRATEGY

Comments by Norway on:
'Future directions for the Working Group for the
Development of Approaches to Conservation (WG-DAC)'
Paper submitted by Australia as Convener, 24 July 1989

Australia, as Convener of WG-DAC, has a very difficult task and we appreciate their constructive effort for the development of approaches to a conservation strategy.

2. The general objectives of CCAMLR according the Article II of the Convention require an approach to fishery management basically different from fishery management at present being applied in most regions of the World. Although multi-species models are being developed successfully in many regions, single species management systems will probably still be applied for several years and an 'ecosystem approach' is even further away. It should also be realised that the development of an ecosystem conservation strategy requires extensive research. In the Antarctic the ecosystem is complex and it is essential that the Commission draw on the expertise of the Scientific Committee and its subsidiary bodies to outline required research tasks and areas of immediate priority.

3. In a submission by Australia in 1987, some examples of conservation approaches were examined. In brief, the following comments can be given:

Reactive management as a conservation strategy alone would not be sufficient to prevent over-exploitation. Important species in the total ecosystem could be depleted to a level where recruitment is seriously affected.

Predictive management (modelling) require extensive research and collection of data both of commercial and non-commercial species, but is by far the best solution to provide a sound management strategy for rational utilisation of the living resources.

Sanctuaries have been used in many other areas and will probably be required to be used in the Antarctic, particularly combined with predictive management. To be effective it requires good information about stock units and migration between areas.

Pulse fishing can result in serious over-exploitation and is generally not acceptable.

Feedback management as described in the Australian submission, is useful and in most cases necessary in combination with predictive management. It requires extensive monitoring of stocks and research on interaction between different species in the total ecosystem.

4. In view of the Norwegian Delegation, evaluation of a given strategy should include consideration of:

(a) the scientific resources necessary to obtain the data required to implement it; and

(b) the practical possibilities and resources necessary to enforce the conservation measures implied.

5. As outlined in the Australian paper, the immediate priority should be to restore depleted fish populations and to prevent depletion of other stocks new being exploited.

6. If lack of data prevents a more comprehensive conservation strategy, the introduction of precautionary conservation measures on an interim basis must be considered. For example, the development of a management strategy for krill requires extensive research on stock abundance and productivity. To prevent an uncontrolled escalation of a fishery which could result in heavy depletion of the krill population, serious consideration should be given to restricting the level of fishing by introducing precautionary TACs by areas and/or by seasons.

7. The questions concerning exploratory fishing have been raised by Australia. It is important to allow exploratory fishing in order to make an evaluation of stock abundance and its composition. To prevent any excessive catches it must be assured that exploratory fishing is done under full control.

8. With regard to a suitable task for the WG-DAC to address at the 1989 Meeting, we agree with the suggestion made by Australia to consider the development of approaches to conservation for new and developing fisheries.

9. In addition, a number of important issues are mentioned in the Australian submission where the advice by the Scientific Committee is required. Examples are:

(a) what are the key elements of an ecosystem approach?

(b) level of exploratory fishing to gather data needed.

(c) conduct of research surveys, etc.

10. We would suggest therefore, that the WG-DAC at the end of the 1989 Meeting, also specify urgent questions that should be addressed by the Scientific Committee at their 1990 Meeting.

APPENDIX 3

LIST OF DOCUMENTS

WG-DAC-89/1	DRAFT AGENDA FOR THE WORKING GROUP FOR THE DEVELOPMENT OF APPROACHES TO THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES
WG-DAC-89/2	LIST OF DOCUMENTS
WG-DAC-89/3	FUTURE DIRECTIONS FOR THE WORKING GROUP FOR THE DEVELOPMENT OF APPROACHES TO CONSERVATION (WG-DAC) (Convener, Australia)
WG-DAC-89/4	APPROACHES TO CONSERVATION IN NEW OR DEVELOPING FISHERIES (Australia)
WG-DAC-89/5	CONSIDERATION OF A MANAGEMENT STRATEGY (Norway)

ANNEX F

PERSONAL STATEMENT BY THE CONVENER OF THE WORKING GROUP ON FISH STOCK ASSESSMENT

PERSONAL STATEMENT BY THE CONVENER OF THE WORKING GROUP ON FISH STOCK ASSESSMENT

The Working Group on Fish Stock Assessment is a group of highly qualified scientists both in the fields of Antarctic fish research as well as in fish stock assessment and I am sure nobody will deny that. Our work is guided by questions put forward to the Scientific Committee by the Commission as well as by our own responsibilities and credibilities as scientists in the light of Article II. In the last years we were able to improve our assessments considerably and those results presented in the recent Report of the Working Group on Fish Stock Assessment were by no doubt the best scientific advice available based on all information currently available.

2. However, this does by no means mean that our advice is always unequivocal. At the Working Group meeting each Member of the Working Group has the opportunity to express his opinions. When he is not in agreement with other Members of the Working Group, the report will note that. As a second forum the Scientific Committee has to comment on our deliberations and the Working Group has noted with satisfaction that the Scientific Committee usually has endorsed our views with very little additional comments or dissent opinions to our work. This support added further motivation to our work and ensured that the way we have developed our work in the Working Group is widely acknowledged among Member countries.

3. In previous years and in particular this year, however, we were increasingly faced with the situation that our advice was discredited or even ignored during informal discussions among Members of the Commission by simply stating that there was not enough scientific evidence for a particular advice without, however, qualifying other scientific information nor indicating what level of certainty is necessary for a particular advice to support this opinion.

4. As Convener of the Working Group on Fish Stock Assessment, I would like to express my deep concern about that development currently taking place. I further think that I should protect my colleagues in the Working Group against what I feel are unsubstantiated statements. I would be glad to see these statements discussed in the Working Group or the Scientific Committee. I cannot accept, however, the present dislocation of the discussion into the Commission and I would like to draw the attention of the Commission to that. It puts not only unnecessary constraints on our work but has considerable implication for the credibility of the whole CCAMLR system.

ANNEX G

REPORT OF THE MEETING OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION (SCOI)

REPORT OF THE MEETING OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION (SCOI)

The Standing Committee met on 7, 8 and 10 November, 1989, under the Chairmanship of Mr R.V. Arnaudo (USA), and considered agenda items 9 (Establishment of a System of Observation and Inspection) and 10 (Compliance with Conservation Measures in Force).

ESTABLISHMENT OF A SYSTEM OF OBSERVATION AND INSPECTION

2. In response to a request from the Commission at the Seventh Meeting, the Executive Secretary had prepared the following for consideration by the Standing Committee (CCAMLR-VIII/7):

(a) a pennant for inspectors' vessels;

(b) a Report of Inspection form;

(c) an inspector identification card;

(d) a list of Commission measures currently in effect;

(e) fishing gear identification mark;

(f) list of inspectors designated by Contracting Parties for 1989/90;

(g) lists of harvesting and research vessels in the CCAMLR Convention Area during 1989/90;

(h) descriptions of funding arrangements for other international fishery inspection systems;

(i) outline of an Inspector's Manual; and

(j) dictionary of useful questions and terms for inspectors.

3. The Committee reviewed the Executive Secretary's draft Inspection Report, Inspector's Identification Card, Inspector's Manual and Inspector's Dictionary, as well as the pennant

prototype. After various modifications and amendments, the Committee recommended that the Commission approve these items which will allow the CCAMLR System of Observation and Inspection, as agreed upon at the Seventh Meeting, to be fully implemented. The agreed versions are appended to this report.

4. The Committee further recommended that the Commission request that the Executive Secretary prepare the necessary quantities of these items for distribution as soon as possible to Parties.

5. The Committee requested delegates from those Parties whose countries' language is not among the four Convention languages to assist the Executive Secretary as appropriate in the translation of the Inspection Report, the Inspector's Dictionary, Inspector's Manual, and other relevant documentation.

6. The Committee recommended that the Commission request Parties that are conducting harvesting operations in the Convention Area provide copies of the documents specified in paragraph 5 to fishing vessels in order to facilitate any inspections and to ensure that all operators are familiar with all CCAMLR measures.

7. The Committee discussed the Observation and Inspection System, as approved at the Seventh Meeting. Some Contracting Parties pointed out that the documents approved by the Committee to implement the System did not reflect all of the elements of the System approved at the Seventh Meeting. It was also noted that the documents introduced additional positive procedures to facilitate the operation of the System. Several possible modifications to improve the System were discussed, but it was agreed that it would be preferable to allow the System to operate for a period of time before any changes would be considered. It was agreed to place this item on the agenda of the Standing Committee at the Ninth Meeting, and Parties were encouraged to circulate any suggested improvements prior to that meeting.

8. In this regard, it was also suggested by several delegations that after the System had been in place for a period of time, it might be appropriate for CCAMLR to sponsor a workshop on the System to review specific aspects of its operation, such as *inter alia*, boarding procedures, inspecting techniques, and log books. The workshop might include inspectors and vessel captains.

9. The Delegation of Japan raised three areas of concern regarding the CCAMLR Observation and Inspection System:

(a) equal distribution of inspections;

(b) duration of an inspection; and
(c) size of an inspection team.

The Committee noted the Japanese concerns, which were shared by other delegations. Parties designating Inspectors agreed to take these concerns into account. There was general agreement that inspections should be conducted equitably and as quickly as reasonable and that the size of the inspection team should be kept to a minimum, bearing in mind the unusual conditions of the Southern Ocean.

10. The Committee elaborated the following procedure for processing Reports of Inspection:

(a) At the completion of the inspection, a copy of the Report signed by both the inspector and the master of the vessel is to be given to the master.

(b) The inspector will provide a copy of the Report to the designating government.

(c) Copies of all Reports of Inspection should be sent to the CCAMLR Secretariat and the Flag State of the inspected vessel as soon as possible after the inspection, but not later that 1 July.

(d) If there is an alleged infraction, a copy of the Report will be sent immediately to both the CCAMLR Executive Secretary and the Flag State of the inspected vessel.

(e) Comments, if any, from the Flag State of the inspected vessel should be sent to the CCAMLR Secretariat as soon as possible after the inspection but not later than 1 September.

11. Members of the Standing Committee were invited to describe national efforts to give legal effect to the CCAMLR System of Observation and Inspection and to select and train inspectors. Some Members described the regulations that they have developed which implements the System domestically. They have, as required by Article XXI, transmitted copies of these regulations to the Executive Secretary. The Delegation of Japan stated that the functions of inspectors and observers are inherently different and the System does not make any distinction between the two. It further noted that the obligation of a Contracting Party under the System is the one related to inspectors. Therefore, Japan expressed the intent to introduce relevant domestic procedures to implement the System based on the above understandings.

12. Four Member countries have designated inspectors. The Chilean Delegation indicated that its three inspectors have considerable background in inspection and are prepared by their experience to assume duties in the Convention Area. The United States noted that it had formally trained its own inspectors by developing and providing the inspectors with an extensive Operations Manual; by including the inspectors in its two week national observer training class; by arranging three days of species identification training at its national systematics laboratory; and through briefing by its representatives to CCAMLR and the Scientific Committee. The Soviet Delegation noted that the Soviet Union assigns its own domestic fishing inspectors to the Convention Area to ensure compliance. Masters of fishing vessels are required to pass an examination of CCAMLR measures before being allowed to fish in the Convention Area.

13. Parties were reminded that tat the Seventh Meeting, they were requested to provide relevant domestic laws and regulations governing the performance and requirements of observers and inspectors (CCAMLR-VII, paragraph 129). The Standing Committee noted that parties should provide the Commission with information on any appropriate measures they have taken to ensure compliance with provisions of the Convention or Conservation Measures, in accordance with Article XXI.

14. Several delegations expressed the need for further elaboration of a system governing observers and observation, in as much as the actions taken by the Committee refer primarily to inspectors and inspection. It was agreed that the elements of a system governing observers and observation should be discussed at the Ninth Meeting. Parties might wish to provide views on possible elements of the system to the Executive Secretary for distribution to other Parties prior to the meeting.

15. With regard to funding, the Committee reviewed the discussion of the issue which took place at the Seventh Meeting. It also discussed the comments received from other international fishery commissions (CCAMLR-VIII/7, Annex 8). The Committee took no further action on the matter at this time.

16. The Standing Committee agreed that the agenda at its next meeting should include:

(a) Reports of Inspection;
(b) Compliance; and
(c) Review of the Operation of the System.

COMPLIANCE WITH CONSERVATION MEASURES IN FORCE

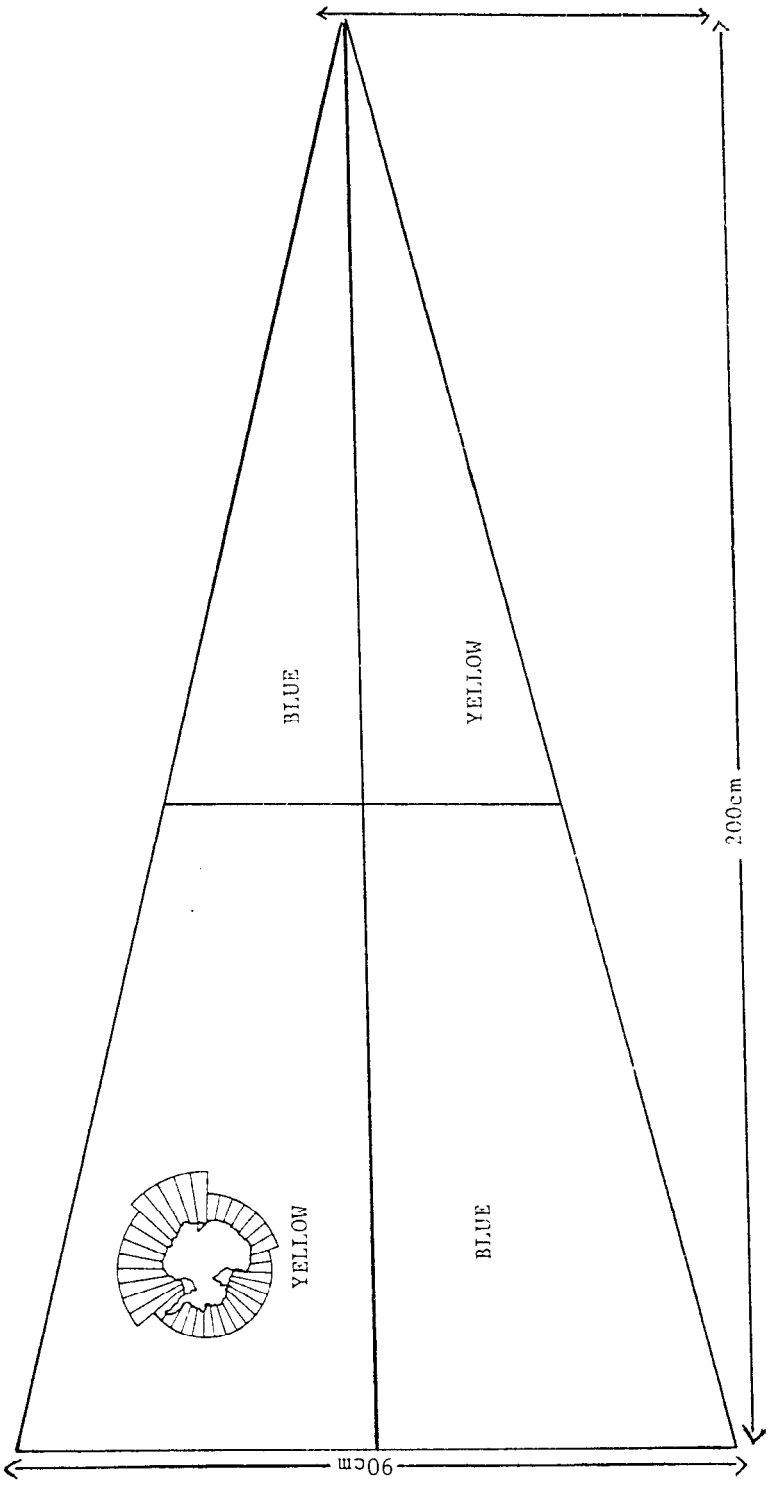
17. No items were brought to the attention of the Standing Committee.

APPOINTMENT OF CHAIRMAN AND VICE-CHAIRMAN

18. The Committee noted that the Chairman and Vice-Chairman have served for two meetings, and, in accordance with normal procedure, have completed their terms.

APPENDIX 1

CCAMLR SYSTEM OF OBSERVATION AND INSPECTION PENNANT



APPENDIX 2

COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

REPORT OF INSPECTION

(Inspector: Please use CAPITAL BLOCK LETTERS)

Note to master of the vessel to be Inspected

The CCAMLR inspector will produce his CCAMLR document of identity on boarding. He is then entitled to inspect and measure all fishing gear on or near the working deck and readily available for use and the catch on and/or below decks and any relevant documents. This inspection will be to check your compliance with CCAMLR's measures to which your Country has not objected and, notwithstanding any such objection, to inspect the logbook entries and fishing records for the Convention Area and the catches on board. The inspector is authorised to examine and photograph the vessel's gear, catch, logbook or other relevant document. The inspector will not ask you to haul your nets. However, he may remain on board until the net is hauled in.

AUTHORISED INSPECTOR(S)

1. NAME(S) .....

   DESIGNATING COUNTRY .....

2. Name and Identifying letters and/or Number of Vessel carrying the Inspector .....
   .....

INFORMATION ON VESSEL INSPECTED

3. Country and Port of Register .....

4. Vessel's Name and Registration Number .....

5. Type of Vessel (fishing, research) .....

6. Master's Name .....

7. Owner's Name and Address .....
   .....

8. Position as determined by inspecting vessel's master at ..... GMT

   Lat ..... Long .....

   (a)Equipment used in determining position .....

   .....

   .....

9. Position as determined by inspected vessel's master at ..... GMT

   Lat ..... Long .....

(a) Equipment used in determining position.....

.....

.....

DATE AND TIMES THE INSPECTION COMMENCED AND FINISHED

10. Date ..... Time arrived on board..... GMT; Time of Departure.....GMT

GEAR ON OR NEAR THE WORKING DECK INSPECTED

11.

	1st net	2nd net	3rd net
Type of Net (pelagic or bottom trawl)			
Net Material			
Single or double twine			
Net (measured wet) on or near trawl deck			
Type of net attachments inspected			
Remarks			

MESH MEASUREMENT - IN MILLIMETRES

12.

Net No ..... Location of net to be measured (in water) .....

(on work deck) .....

Condition of Net (rigging) .....

(wet-dry) .....

Initial measurement pursuant to Conservation Measure 4/V (Article 6)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

	Total mm for 20 mesh ÷ 20	measurements =		average mesh size

40 additional measurements in accordance with Conservation Measure 4/V (Article 6)

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

	Total mm for 60 mesh ÷ 60	measurements =		average mesh size

If master disputes initial 60 mesh measurements, a further 20 meshes will be measured using a weight or dynamometer in accordance with Conservation Measure 4/V (Article 6(2)). This measurement will be considered final.

Final measurement in case of dispute, Conservation Measure 4/V (Article 6(2))

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

	Total mm for 20 mesh ÷ 20	measurements =		average mesh size

Result of Inspection of Fish on board

13. Result of Inspection of Fish Observed in last tow (if appropriate)

TOTAL TONNES	3-ALPHA CODE	ALL SPECIES TAKEN	PERCENTAGE TAKEN	PERCENTAGE DISCARDED
		TOTAL CATCH:		

Record catch in round weight (i.e. not processed weight)

14. Result of inspection of catches on board

FISH SPECIES USE 3-ALPHA CODE	INSPECTORS ESTIMATE (TONNES)

Inspectors comments on how estimates were calculated:

.....

.....

.....

.....

15. Has the following data been recorded in the log book or other ship's records on board the vessel?

Description of Vessel

Yes	No	
		name of ship
		type of vessel
		registration number and port of registration
		ship nationality
		gross registered tonnage
		length overall (m)
		maximum shaft power (kW at ..... rev/min) or horsepower

Description of Gear

Yes	No	
		trawl type (according to fao nomenclature)
		code number for trawl type
		mesh size at mouth (mm)
		mesh size at codend (mm stretched)
		liner mesh size (mm)
		net plan (includes strip lengths, twine sizes, mesh sizes)
		gear plan (otter boards, bridles, etc., as appropriate)
		underwater acoustic equipment, echosounders (types and frequencies), sonar
		(types and frequencies), netsonde (yes/no)

Tow Information

Yes	No	
		date
		position at start of fishing (in degrees and minutes)
		time at start of fishing (in hour and minutes GMT; if local time, indicate the variation from GMT)
		time at end of fishing (before hauling)
		bottom depth (m)
		fishing depth (only if midwater trawl)
		direction of trawling (if the track changed during trawling, give the direction of the longest part of the track)
		towing speed

Environment

Yes	No	
		presence or not of ice in water
		cloud coverage or type of weather
		speed of wind (knots) or wind force (Beaufort Scale) and direction
		sea surface temperature
		air temperature

Catch Records for Each Tow

Yes	No	
		estimated total catch (kg)
		approximate species composition (percent of total)
		amount and composition of discards
		number of boxes of each size of fish per species, if any
		presence of fish larvae

Daily Record of General Information

Yes	No	
		time at start of searching
		time at end of searching and start of haul
		time search is resumed after haul
		time searching ends

16. Are copies of the CCAMLR placard on marine debris openly displayed on board the vessel?

Yes	No

17. Is the International Radio Call Sign prominently displayed on a weather deck and both the port and starboard sides of the vessel?

Yes	No

18. Has a record been kept of:

(a) the dates, places types and quantities of any fishing gear lost in the Area?

Yes	No

(b) lost or discarded nets, net fragments, strapping bands or other potentially hazardous marine debris, its condition and quantity, found incidentally during the operation of the vessel in the Area?

Yes	No

(c) the number and condition of any fish, birds, marine mammals or other organisms entangled in the debris when found?

Yes	No

(d) what was done with the debris?

Yes	No

(e) an inventory of the types and quantities of netting on board?

Yes	No

(f) Is each net identified?

Yes	No

(g) the number, species, age, size, sex and reproductive status of any birds and marine mammals taken incidentally during fishing operations?

Yes	No

19. Are there any birds or marine mammals, dead or alive, on board?

Yes	No

Note to master of inspected vessel:

At this stage the inspection will finish unless an apparent infringement has been found. If no apparent infringement is found go to item 27. If an apparent infringement has been found the inspector will write the infringement here and sign at this point. You must countersign to show that you have been informed of the infringement. Your signature does not constitute acceptance of the apparent infringement.

2.0

Nature of apparent infringement:

Signature of inspector: .....

Signature of master: .....

If an apparent infringement has been found, the inspector is authorised to:

1) re-examine and photograph the inspected vessel's gear, catch, logbooks or other relevant documents;

2) ask you to cease fishing if the apparent infringement consists of

(a) fishing in a closed area or with gear prohibited in a specific area;

(b) fishing for stocks or species after the date on which the Executive Secretary has notified Members that a directed fishery

COMMENTS AND OBSERVATIONS

21. Document inspected following an apparent infringement .....

22. Comments: (In case of a difference between the inspector's estimates of the catches on board and the related summaries of catches from the logbooks, note this difference with the percentage)

.....

.....

.....

.....

23. Subjects of photographs taken relating to an apparent infringement .....

.....

.....

24. Other comments, statements and/or observations by Inspector(s) in case of apparent mesh size infringement include here the identification number of the net marker attached by the inspector) .....

.....

.....

.....

.....

.....

25. Statements of Second Inspector or Witness .....

.....

.....

.....

26. Name and Signature of Second Inspector or Witness .....

.....

27. Signature of Inspector in charge .....

28. Statement of Master's Witness .....

.....

.....

.....

.....

.....

29. Name and Signature of Master's Witness(es) .....

.....

30. Acknowledgement and receipt of report:
I, the undersigned, Master of the vessel ....., hereby confirm that a copy of this report and second photographs taken have been delivered to me on this date. My signature does not constitute acceptance of any part of the contents of the report.

Date ..... Signature .....

31. Comments and signature by the Master of vessel .....

.....

.....

.....

.....

.....

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.....

.....

.....

.....

ONE COPY TO MASTER, ORIGINAL AND OTHER COPY TO BE RETAINED BY INSPECTOR FOR REQUIRED DISTRIBUTION

REMARKS

Inspectors should use these pages to record their comments on any aspect of the inspection they feel should be reported.

APPENDIX 3

FRONT OF IDENTITY CARD

COMMISSION FOR THE
CONSERVATION OF ANTARCTIC
MARINE LIVING RESOURCES

The Bearer of this Document .....

(Name in Capitals)

.....

(Signature)

is a CCAMLR inspector and has the authority to act under the arrangement approved by the Commission until 1 July 1990

Issued by: .....

Signature: ..... Date: .....

.....

(Name of issuing country in capitals, and Inspector's identity number)

Photograph

Seal or Official Stamp

BACK OF IDENTITY CARD

The bearer of this card is an authorised inspector under the
CCAMLR System of Observation & Inspection

The porteur de cette carte est un inspecteur autorisé à agir
selon le Système d'observation et d'inspection de la CCAMLR

Der Träger dieses Ausweises ist ein im Rahmen des CCAMLR
Inspektions- und Beobachtungssystems authorisierter Inspektor

Japanese translation to be
inserted here

Korean translation to be
inserted here

Okaziciel tego dokumentu jest upowaznionym inspektorem
dzialajacym w ramach Systemu Obserwacji i Kontroli Konwencji
o Ochronie Zywych Zasobow Morskich Antarktyki (CCAMLR)

El portador de esta tarjeta es un inspector autorizado
según el Sistema de Observación e Inspección de la CCRVMA

APPENDIX 4

LISTS OF MEASURES CURRENTLY IN EFFECT

A. Reporting requirements of the Convention on the Conservation of Antarctic Marine Living Resources.
ARTICLE IX 1. (c)
ARTICLE XX
ARTICLE XXI

B. Schedule of Conservation measures in Force (issued in July 1989)

C. Data to be compulsorily recorded by vessels operating in the Convention Area (see paragraph 45, CCAMLR-IV).

D. Commission requirements in relation to the Assessment and Avoidance of Incidental Mortality of Antarctic Marine Living Resources

D. COMMISSION REQUIREMENTS IN RELATION TO THE ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY OF ANTARCTIC MARINE LIVING RESOURCES

The Commission has recognised that both incidental catch during fishing operations and accidental entanglement in or ingestion of marine debris by fish, birds, marine mammals and other living resources could interfere with efforts to achieve the objectives of the Conventions.

Copies of a brochure have been provided to all Members for distribution to fishery and other Antarctic operators to inform them of the fates and effects of marine debris. A placard for mounting on the bulkhead of ships has also been provided. Copies of both are attached.

Members have agreed to take such steps as may be necessary to ensure that:

(i) the International Radio Call Sign (IRCS) or other appropriate identification sign is prominently displayed on a weather deck and on both the port and starboard side of all their flag vessels engaged in fishing or related activities in the Convention Area so that the identification signs can be easily read from the air and from other vessels;

(ii) all their flag vessels engaged in fishing and associated activities in the Convention Area maintain a record of and report the dates, places, types and quantities of any fishing gear lost in the Convention Area;

(iii) when feasible, samples of any lost or discarded nets, net fragments, strapping bands, or other potentially hazardous marine debris found incidentally by their nationals in the Convention Area be collected and provided to the Secretariat for archiving along with information on when, where, how and how much debris was found, the condition of the debris when found, the species, number and condition of any birds, marine mammals or other organisms entangled in the debris when found, and what was done with any parts of the debris not sent to the Secretariat for archiving; and,

(iv) when feasible, potentially hazardous debris found by their nationals in the Convention Area be recovered and returned to port or otherwise disposed of in a manner that will ensure it poses no further risk to ships or living marine resources.

and to:

(a) request that their nationals working at Antarctic coastal stations or on research or supply vessels operating in the Convention Area report any observations of lost or discarded fishing gear, binding materials or other man-made debris, with information on the species and numbers of animals found entangled therein, and any incidents of man-made debris fouling propellers, rudders, or water in-take valves of vessels operating in the Convention Area;

(b) periodically survey beaches, and seal and penguin colonies in the vicinity of their coastal stations and other areas as may be feasible, to determine the types, quantities, and, as possible, sources of any fishing gear or other debris accumulating there; and

(c) determine practical and effective means for marking fishing nets or parts thereof and the possible costs and benefits of requiring that nets or net materials be marked and that vessels engaged in fishing and related activities in the Convention Area maintain an inventory of the types and quantities of netting brought into the Convention Area.

INCIDENTAL CATCH

Members have also agreed to take such steps as necessary to ensure that operators of vessels engaged in fishing and related operations in the Convention Area maintain a record and report the number, species, and where appropriate the age and size, sex and reproductive status, of any birds and marine mammals taken incidentally during fishing operations. These data are to be archived and summaries of the data, by statistical areas, reported to the Executive Secretary each year for distribution to Members.

APPENDIX 5

OUTLINE OF INSPECTOR'S MANUAL

This attachment contains an outline of a document that the Commission might provide to designated inspectors to assist them to carry out their inspections. It includes an introduction and three sections. The first section, 'Standard References' is to include information that in general will not change from year to year. The second section, 'Annual References' contains information which in almost every case will have to be updated annually. The third section deals with the 'CCAMLR Observation and Inspection System' itself.

The purpose of this 'Outline' is to indicate existing information published by the Commission that might be included in a manual and where necessary to suggest explanatory text that might be approved for inclusion.

CCAMLR OBSERVATION AND INSPECTION SYSTEM
INSPECTOR'S MANUAL

INTRODUCTION

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is an intergovernmental organisation established by an international convention with the objective of conserving Antarctic marine living resources while allowing for their rational use. The Convention seeks to conserve not only the exploited species but all species in the Antarctic Marine ecosystem.

To achieve this objective the Commission annually reviews fishing and research activity in the Convention Area and adopts measures to regulate fishing, makes decisions requiring the collection and reporting of data and adopts other measures concerning the conservation of Antarctic marine life.

The CCAMLR System of Observation and Inspection has been established to ensure that activities undertaken in Antarctic waters are done so in accordance with the measures adopted by the Commission.

The verification of compliance with measures adopted by the Commission in pursuit of its objectives is of central importance in the implementation of the Convention. Since they play such a significant and prominent role in this process, it is essential that inspectors fully understand their functions, rights and responsibilities and that they conduct their inspections courteously and professionally. This manual has been prepared by the CCAMLR Secretariat to provide CCAMLR Inspectors with all available information that might assist them in the conduct of their duties.

SECTION 1. STANDARD REFERENCES

Map of the Convention Area
Map of CCAMLR Statistical Areas
List of Members of the Commission
Text of the Convention on the Conservation of Antarctic Marine Living Resources

(Copies of these documents will be included in this section without comment).

SECTION 2. ANNUAL REFERENCES

CONSERVATION MEASURES IN FORCE

A copy of the current version of this document will be included here without comment.

OTHER MEASURES IN FORCE

A copy of other measures agreed by the Commission will be included here without comment.

SCIENTIFIC RESEARCH EXEMPTION

In order to monitor the status and recovery of exploited species the Commission has acknowledged that it will be necessary to allow fishing for research purposes to be conducted in areas, on certain species or under conditions that are precluded by measures in force. Such fishing

may be undertaken by research vessels or by vessel s specially chartered for the purpose that would normally be engaged in commercial fishing or fisheries support.

The Commission maintains a Register of Permanent Research Vessels. A copy is included in this Manual.

Members planning to use commercial vessels or fisheries support vessels for research are required to notify the Commission six months in advance of the planned starting date. The information to be provided should include:

(i) a statement of the planned research objectives;

(ii) a description of when, where and what activities are planned including the number and duration of trawls being planned;

(iii) the name(s) of the chief scientist(s) responsible for planning and coordinating the research, and the number of scientists an;d crew expected to be aboard the vessel(s); and

(iv) the name, type, size, registration number and radio call sign(s) of the vessel(s).

LIST OF COMMERCIAL FISHING VESSELS AND FISHERIES SUPPORT VESSELS NOTIFIED TO THE COMMISSION AS BEING INVOLVED IN RESEARCH ACTIVITIES IN THE CONVENTION AREA IN 1989/90

No vessels have been notified

REGISTER OF PERMANENT RESEARCH VESSELS

The current list will be included without comment.

LIST OF VESSELS OF CCAMLR MEMBERS INTENDING TO HARVEST IN THE CONVENTION AREA IN 1989/90

The current list will be included without comment.

STATUS OF ANTARCTIC MARINE LIVING RESOURCES

The following paragraphs are extracts from the Reports of the Meetings of the Scientific Committee at which its most recent assessments of the status of each of these groups of Antarctic marine living resources were made.

KRILL

The relevant paragraphs of SC-CAMLR-VIII will be included here without comment.

FISH

The relevant paragraphs of SC-CAMLR-VIII will be included here without comment.

SQUID

The relevant paragraphs of SC-CAMLR-VIII will be included here without comment.

Reports of Members' Activities in the Convention Area

Research Programs of CCAMLR Members for 1989/90 and 1990/91

Reports of Members on the Assessment and Avoidance of Incidental Mortality of Antarctic Marine Living Resources

CCAMLR Forms and Instructions for Reporting

Fine-scale Catch and Fishing Effort Data

SECTION 3

CCAMLR OBSERVATION AND INSPECTION SYSTEM

TEXT OF THE CCAMLR OBSERVATION AND INSPECTION SYSTEM

(A copy of the text will be included without comment.)

INSPECTION PENNANT

(A copy of the approved design will be included.)

IDENTIFICATION DOCUMENT

Inspectors are required to carry an identity document of the type shown below. (Insert copy).

FISHING GEAR IDENTIFICATION MARK

A standard marker has been approved for identifying gear that has been judged by an inspector to be contrary to standards set by the Commission. It is in the form of a sealable plastic ribbon with an identifying number stamped into it. The identifying number is to be recorded in the appropriate space in the form for reporting the inspection.

REPORT OF INSPECTION

CCAMLR Inspectors are required to prepare a report of each inspection carried out. A standard reporting form provided for this purpose is shown below. The form is designed to cover those aspects of the inspection concerning compliance with the formal measures adopted by the Commission under the procedures laid down in the Convention. A list of these measures is included in Section 2 of the Manual under the heading 'Conservation Measures in Force'.

The form also provides for reporting on aspects that have a less formal level of agreement, but nevertheless have been acknowledged by the Commission as being directly concerned with the objectives of the Convention, e.g. those aspects of the inspection relating to the incidental mortality of birds and mammals.

Inspectors are reminded of the importance of reporting their observations clearly and factually. When in doubt as to the interpretation of a measure and therefore in doubt as to whether an infringement of that measure has occurred, Inspectors should not record an apparent infringement in the Report of Inspection but they should report their observations. (Insert copy of Report of Inspection.)

DICTIONARY OF QUESTIONS AND TERMS

The following list of questions and terms have been prepared to assist inspectors to make themselves understood on vessels of countries known to operate in the Convention Area. (Insert list.)

LIST OF DESIGNATED INSPECTORS

(Insert list.)

REPORTS OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION

(This chapter will contain excepts of the reports of the Standing Committee that are useful and relevant to the inspectors. At this stage all of the relevant material has been included in other chapters of this Manual.)

APPENDIX 6

CCAMLR SYSTEM OF OBSERVATION AND INSPECTION

DICTIONARY OF USEFUL QUESTIONS AND TERMS

PART 1

1. Fishing in these waters is subject to regulation by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Its regulations are binding on its Members and the operating Country of this vessel is a Member.

2. I am an authorised inspector under the CCAMLR System of Observation and Inspection. Here is my document of identity. I should like to see the master of this vessel.

3. Please give me your name.

4. Please cooperate with me in my examination of your catch/equipment/documents in accordance with the Commission's regulations for this area.

5. Please check your position and time now.

6. I am reporting your position as .....° lat .....° long at .....GMT. Do you agree?

7. Would you like to check your position with my instruments on board the inspection vessel?

8. Do you agree now?

9. Please show me the documents establishing the nationality of your vessel/the registration documents/the bridge logbook/the fishing logbook(s).

10. Please write down the name and address of the owners of this vessel in the space I am indicating on the Report Form.

11. What principal species are you fishing for?

12. I agree.

13. Yes.

14. I do not agree.

15. No.

16. Please take me to the bridge/the working deck/the processing area/fish holds.

17. Do you use any net attachment? If so, what type? Please write it down in the space I am indicating.

18. Please switch on these lights.

19. I wish to examine that net/chafing gear.

20. Show me the other fishing gear you have on or near the fishing deck.

21. Show me your net gauge, if any.

22. Ask your men to hold that net so that I can measure it.

23. Please put that net underwater for 10 minutes.

24. I have inspected ..... meshes in this net.

25. Check that I have recorded accurately on the Report Form in the space I am indicating the width of the meshes I have measured.

26. I wish to inspect your catch. Have you finished sorting the fish?

27. Will you please lay out those fish?

28. I wish to estimate the proportion of regulated species in your catch.

29. Please turn to the copy of the Report Form in your language. I would appreciate your assistance in supplying me with the necessary information to complete it. I will indicate which sections.

PART II

30. If you do not give your cooperation as I have requested, I will report your refusal.

31. I have found the average width of the meshes I have measured in that net is ..... mm. This appears to be below the minimum applicable mesh size, and will be reported.

32. I have found net attachments/other fishing gear which appear to be illegal. This will be reported.

33. I shall now affix the identification mark to this piece of fishing gear which is to be preserved with the mark attached until viewed by a fisheries inspector of your Government at his demand.

34. I have found ..... undersized fish. I shall report this.

35. I find that you are apparently fishing this area during a closed season/with gear not permitted/for stocks or species not permitted. This will be reported.

36. I have found a by-catch of regulated species which appears to be above the permitted amounts. I shall report this.

37. I have made copies of the following entry/entries in this document. Please sign them to certify that they are true copies.

38. I would like to communicate with a designated authority of your Government. Please arrange for this message to be sent and for any answer to be received.

39. I would like to communicate with a designated authority of my Government. Please arrange for this message to be sent and for any answer to be received.

40. Do you wish to make any observations concerning this inspection including its conduct and that of the inspector(s)? If so, please do so in the space I am indicating on the Report From

on which I have set out my findings. Please sign the observations. Do you have any witnesses who wish to make observation? If so, they may do so in the space I am indicating on the Report Form.

41. I am leaving. Thank you.