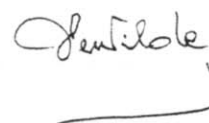


COMMISSION FOR THE CONSERVATION
OF ANTARCTIC MARINE LIVING RESOURCES

REPORT OF THE SEVENTH MEETING OF THE COMMISSION

Hobart, Australia
24 October - 4 November, 1988

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Chairman of the Commission
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Abstract

This document presents the adopted record of the Seventh Meeting of the Commission for the Conservation of Antarctic Marine Living Resources held in Hobart, Australia, 1988. Major topics discussed at this meeting include: financial administration, 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 co-operation with other international organisations including the Antarctic Treaty System. The reports of the Standing Committee on Administration and Finance and the Standing Committee on Observation and Inspection are appended.

TABLE OF CONTENTS

OPENING OF THE MEETING

FINANCE AND ADMINISTRATION

Examination of the Audited Financial Statements for
1987 and Appointment of Extermanl Auditor

Review of Budget for 1988

Draft Budget for 1989 and Forecast Budget for 1990

Secretariat Staffing

Executive Secretary

Executive Secretary's Study of Specific Expenditure Items

Chairman and Vice-Chairman of SCAF

ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY

Members' Reports on the Assessment and
Avoidance of Incidental Mortality

Information Brochure and Placard

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

Request to SCAR for Advice on Monitoring Programs

Future Work

CO-OPERATION WITH OTHER ELEMENTS OF THE ANTARCTIC TREATY SYSTEM

Report of the CCAMLR Observer to SCAR

Report of the CCAMLR Observer to the 1988 Meeting
to Review the Operation of the Convention for the
Conservation of Antarctic Seals (CCAS)

REPORT OF THE SCIENTIFIC COMMITTEE

Krill

Fish Resources

Squid

Ecosystem Monitoring and Management

Registration and Protection of Land-Based CEMP Sites

Marine Mammals and Bird Populations

Review of the Long-Term Program of Work
of the Scientific Committee

CONSIDERATION OF CONSERVATION MEASURES

Review of Existing Measures

Review of Additional Requirements

TAC's

Protection of Juvenile Fish

Minimum mesh size

Closed areas

Closed seasons

Guidance to the Scientific Committee

Conservation Measure 11/VII

Conservation Measure 12/VII

Scientific Research Exemption Provision

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

Observation and Inspection System

Future Steps

COMPLIANCE WITH CONSERVATION MEASURES
IN FORCE UNDER ARTICLE X

DEVELOPMENT OF A CONSERVATION STRATEGY
FOR ANTARCTIC MARINE LIVING RESOURCES

Future Work

CO-OPERATION WITH OTHER INTERNATIONAL ORGANISATIONS

ASOC Request for Observer Status

ELECTION OF CHAIRMAN OF THE COMMISSION

NEXT MEETING

OTHER BUSINESS

ADOPTION OF REPORT AND CLOSE OF MEETING

ANNEX A	List of Participants
ANNEX B	Official Opening Speech to the Seventh Meeting of the Commission for the Conservations of Antarctic Marine Living Resoruces (E. Samoteikin, USSR Ambassador)
ANNEX C	Agenda for the Seventh Meeting of the Commission
ANNEX D	List of Meeting Documents
ANNEX E	The Executive Secreatry's Report of the Meeting of the Standing Committee on Administration and Finance (SCAF)
ANNEX F	Projected Income and Expenditure 1988, Budget 1989 and Forecast Budget 1990
ANNEX G	Registraton of Land-Based CEMP Sites
ANNEX H	Report of the Standing Committee on Observation and Inspection (SCOI)

REPORT OF THE SEVENTH MEETING OF THE COMMISSION

OPENING OF THE MEETING

The Seventh Annual Meeting of the Commission for the Conservation of Antarctic Marine Living Resources was held in Hobart, Tasmania, Australia from 24 October to 4 November 1988.

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 Greece, Sweden and Uruguay attended in this capacity.

4. The Food and Agriculture Organisation of the United Nations (FAO), the Intergovernmental Oceanographic Commission (IOC), the International Union for the Conservation of Nature and Natural Resources (IUCN), the International Whaling Commission (IWC), 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. The IWC, SCAR AND ASOC attended (see paragraphs 153–156). A list of participants is at Annex A.

5. The Commission noted that Canada had acceded to the Convention on 1 July 1988.

6. The Seventh Annual Meeting of the Commission was opened by His Excellency, Dr Eugene Samoteikin, the Ambassador of the USSR in Australia. A copy of Dr Samoteikin's address is at Annex B.

7. It was suggested that in the Provisional Agenda, the item dealing with the recent meeting on the Conservation of Antarctic Seals should be given the more general title, 'Co-operation With Other Elements of the Antarctic Treaty System' and become a standing item of the Commission's Agenda. This change was agreed and the Agenda was adopted (Annex C).

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

9. The Chairman, Mr Edmond De Wilde of Belgium, welcomed delegates and those attending the Meeting as observers and reported briefly on the intersessional activities of the Commission. Action had been taken by the Chairman in relation to an alleged infraction of a conservation measure in accordance with a decision taken by the Commission at its last Meeting (CCAMLR-VI, paragraph 104). This matter is considered under Agenda Item 9. The Chairman reported that the Commission had received a request for observer status from the Antarctic and Southern Ocean Coalition (ASOC). He had consulted Members and the matter had been listed for discussion under Agenda Item 11. On the Chairman's suggestion Belgium had represented the Commission at the meeting to review the Convention for the Conservation of Antarctic Seals.

FINANCE AND ADMINISTRATION

10. The following items of the Commission's agenda were referred to the Standing Committee on Administration and Finance (SCAF) for consideration:

- (i) Examination of Audited Financial Statements for 1987
- (ii) Appointment of External Auditor
- (iii) Review of Budget for 1988
- (iv) Draft Budget for 1989 and Forecast Budget for 1990
- (v) Secretariat Staffing
- (vi) Executive Secretary's Study of Specific Expenditure Items

11. It was noted that the Chairman of SCAF would complete his term of office at the conclusion of the Meeting. The Commission asked SCAF to consider any changes to its Terms of Reference that would be necessary for the Commission to elect a Vice-Chairman when electing the new Chairman of SCAF.

12. The Commission received the Executive Secretary's Report of the Meeting of the Standing Committee on Administration and Finance (Annex E). Delegations expressed their satisfaction that SCAF was able to carry out its work efficiently due to the efforts of the Secretariat.

Examination of the Audited Financial Statements for 1987 and Appointment of External Auditor

13. The Commission accepted the Financial Statements for 1987 and agreed to appoint the Australian Auditor-General as the Commission's external auditor for a further two-year term.

Review of Budget for 1988

14. The Commission noted the forecast results of income and expenditure for 1988. 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.

Draft Budget for 1989 and Forecast Budget for 1990

15. The Commission noted with satisfaction that the 1989 Budget total showed a reduction of 0.3% in real terms over the 1988 Budget. When the expenditures were divided into recurrent and non-recurrent elements in accordance with the Commission's practice, recurrent expenditure decreased in real terms by 4.5%.

16. The proposal to publish Conservation Measures in Force in a document separate to the Basic Documents volume was agreed.

17. The Commission approved the Budget for 1989. A copy of the Budget including the forecast Budget for 1990 is included in Annex F.

18. It was noted with regard to the 1989 Budget that the total of Members' contributions after deducting estimated credits will be A\$960 258. The contributions calculated according to the agreed formula (CCAMLR-VI, paragraph 28) are estimated as follows:

USSR	A\$ 74 763
JapanA\$	50 032
Other Members	A\$ 46 414

Secretariat Staffing

19. The Commission took note of the Committee's discussions regarding the professional positions in the Secretariat and endorsed the agreements reached.

Executive Secretary

20. It was noted that the present contract of the Executive Secretary expires in 1990. It was agreed that no action was required at present, but that the matter should be included on the agenda of the next meeting.

Executive Secretary's Study of Specific Expenditure Items

21. No objections were raised concerning the Committee's conclusions on this item.

Chairman and Vice-Chairman of SCAF

22. The Commission thanked Mr Bhandari, who had represented India as Chairman of SCAF for the past two years. The EEC was elected to take over as Chairman for the next two years until the conclusion of the Commission's Meeting in 1990.

23. Article (ii) of the Terms of Reference of the Standing Committee on Administration and Finance was amended as follows to provide the Committee with a Vice-Chairman:

‘(ii) The Commission shall elect from among its Members a Chairman and a Vice-Chairman of the Standing Committee, each of whom shall serve for a term of two years and be eligible for re-election for one additional term.’

24. Argentina was elected Vice-Chairman of SCAF.

ASSESSMENT AND AVOIDANCE OF INCIDENTAL MORTALITY OF ANTARCTIC MARINE LIVING RESOURCES

25. In considering this item, the Commission had reports from eight Members, some of which described the results of surveys undertaken to detect marine debris and entanglement-related problems. It also had before it an information bulletin (brochure) and placard prepared by the Secretariat to inform operators in the Convention Area of the marine debris problem and the proper handling of different types of refuse. In addition, the Commission considered the imminent entry into

force of Annex V of the *MARPOL Convention. Finally, the Commission was presented with a request from the Scientific Committee on Antarctic Research (SCAR) to establish programs to monitor plastic pollution and entanglement of Antarctic marine life.

Members' Reports on the Assessment and Avoidance of Incidental Mortality

26. In the Report of the Commission's Meeting last year, Members agreed to request their nationals working in the Convention Area to report any observations of lost or discarded fishing gear and to survey periodically beaches and seal and penguin colonies in the vicinity of their coastal stations. Reports were received from Argentina, Australia, Japan, Republic of Korea, South Africa, Soviet Union, United Kingdom and the United States.

27. While several Members observed no marine debris or entanglement problems, others reported the loss of trawl bags and sightings of derelict debris consisting of fishing buoys, gas bottles, plastic containers, net fragments and packaging from domestic products. In addition, five fur seals were seen entangled in derelict fishing gear and two bull fur seals died after becoming entangled in trammel nets. Members agreed that these reports provided useful information about the loss of Antarctic marine life from entanglement in marine debris.

28. To ensure that the loss or disposal of nets, net fragments, and other potentially hazardous debris does not contravene efforts to achieve the objectives set forth in Article II of the Convention, it was agreed that Members would continue to take those steps outlined at the Commission's Fifth Meeting (CCAMLR-V, paragraphs 40–43). Such steps include maintaining a complete record of lost fishing gear, collecting where feasible derelict marine debris, periodically surveying beaches and seal and penguin colonies near coastal stations, requesting nationals to report observations of derelict debris, determining practical methods for marking fishing gear, and maintaining an inventory of the types and quantities of netting used in the Convention Area. In this context, the Commission noted that reporting of incidental mortality as recommended in CCAMLR-V, paragraph 42 had to date been inadequate.

* The International Convention for the Prevention of Pollution from Ships of 1973, as modified by its Protocol of 1978.

Information Brochure and Placard

29. In response to the Commission's decision at the Fifth Meeting (CCAMLR-V, 40 (b)), during the intersessional period the Executive Secretary completed and distributed an information brochure 'to advise fishermen, researchers, and others working in the Convention Area of the sources, fates and effects of potentially hazardous marine debris' and a placard 'that could be displayed in appropriate places aboard ships operating in the Convention Area, describing "do's and don'ts" with respect to handling, storing, and discarding different types of refuse.' The text of the brochure and placard is provided in Annex F of CCAMLR-VI.

30. Members are urged to distribute the brochure widely among their people working in Antarctica and to ensure that all vessel operators were provided with the placard. The Executive Secretary noted that additional brochures were available and that additional placards could be ordered from the Secretariat. The Commission expressed its appreciation to the Executive Secretary for a fine job in preparing and distributing these materials.

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

31. The MARPOL Convention is designed to control pollution generated by ships, including the accidental disposal of wastes incidental to normal vessel operations. Annex V of the Convention prohibits the disposal of 'all plastics, including but not limited to synthetic ropes, synthetic fishing nets 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.

32. Annex V of the MARPOL Convention will enter into force on 31 December 1988. Because the MARPOL Convention applies to vessels operating in Antarctic waters it was agreed that those Members who have not done so would consider and take such steps as may be appropriate to accept or ratify Annex V of the MARPOL Convention. In addition, the Commission again drew attention to the desirability of all Members operating in the Convention Area to observe the measures outlined in the Annex.

Request to SCAR for Advice on Monitoring Programs

33. At its meeting during XX SCAR, 1988, the Bird Biology Sub-Committee of the SCAR Working Group on Biology discussed plastic pollution in Antarctic seabirds. On the basis of discussion of submitted papers it considered that there was evidence that levels of such pollution are increasing and are already high in some species of procellariiform seabirds (SC-CAMLR-VII/12, page 22).

34. The Bird Biology Sub-Committee had requested that the SCAR Working Group on Biology consider commencing a program to monitor the levels and effects of plastic pollution in seabirds, involving both the ingestion of plastic particles and mortality through entanglement and similar effects.

35. The SCAR Working Group on Biology taking note of existing CCAMLR initiatives in this field, requested CCAMLR 'to consider initiating programs to monitor the level and effects of plastic pollution in Sub-Antarctic and Antarctic seabirds, both from ingestion of plastic particles and from entanglement'. (SC-CAMLR-VII/12, paragraph 3.6).

36. The SCAR Group of Specialists on Seals, meeting in association with XX SCAR 1988, noted that entanglements of Antarctic fur seals have been reported from several areas around the Antarctic (including South Georgia, the South Shetland Islands, Crozet, Marion, Heard and Bouvet Islands) (SC-CAMLR-VII/12, page 49).

37. The Group noted the potential for significant future adverse effects on Antarctic pinnipeds and requested CCAMLR 'to seek detailed information on the frequency of occurrence and nature of entanglement events involving seals in order to identify the causes of entanglement of seals and trends in the frequency and extent of seal entanglement over time. The Group recommended that regular and comprehensive reporting should be encouraged to include:

- (a) sufficient description of seal entanglement events to identify, as far as possible, both the causes of entanglement and their effects on individual seals (e.g. condition, lesions etc);
and
- (b) the presence, or absence, of seal entanglement events on a quantitative basis by species, within areas, groups or populations of a specified size.'

The Group offered to provide assistance to CCAMLR in designing a suitable report sheet for circulation to countries operating in the Antarctic.

38. In response to these requests from SCAR, the Commission noted that Members are already required to report losses of equipment which might pose potential hazards to animals through entanglement, to report any entanglements in such gear and to conduct quantitative surveys of fishing gear and other debris cast ashore (CCAMLR-V/5, paragraph 41). Furthermore, Members are obliged to make an annual report (including details on age or size, sex and reproductive status of birds and mammals taken incidentally during fishing operations (CCAMLR-V/5, paragraph 42)).

39. The Commission noted, however, that these obligations:

- (a) do not address the problem of ingestion of plastics;
- (b) do not specifically provide for quantitative and detailed reports of the incidence, causes and effects of entanglement in circumstances where fishing operations are not directly involved; and
- (c) may not provide adequately detailed information on incidental mortality during fishing operations to enable assessment of the extent of the problem or to monitor changes on a quantitative basis.

40. Accordingly the Commission requested that the Chairman of the Scientific Committee consult and request:

- (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 entanglements of marine mammals, and

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

Future Work

41. It was agreed that this item should be included on the agenda of 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 40–43 of CCAMLR-V.

CO-OPERATION WITH OTHER ELEMENTS OF THE ANTARCTIC TREATY SYSTEM

42. The Commission noted that the next meeting of the Antarctic Treaty Consultative Parties will be held in Paris from 9 to 19 October 1989 and the preparatory meeting will be held some time before. It was agreed that CCAMLR would wish to be represented if an invitation is received.

43. It was pointed out that it had been the practice for the Scientific Committee to nominate a representative to attend, as an observer, the meetings of the Scientific Committee on Antarctic Research (SCAR). Consequently the report of the observer was submitted as a Scientific Committee document and not addressed by the Commission. As much of the work of SCAR is of direct interest to the Commission it was agreed that the CCAMLR observer to the SCAR Meeting would present a report to the Commission under this agenda item.

Report of the CCAMLR Observer to SCAR

44. Dr John Croxall (UK) presented the report of the CCAMLR Observer to SCAR (SC-CAMLR-VII/12). The report summarised information relevant to CCAMLR that arose in connection with XX SCAR and the Fifth SCAR Symposium on Antarctic Biology (on Ecological Change and Conservation of Antarctic Ecosystems – a topic of central importance to CCAMLR).

45. Of particular interest to the Commission and its subsidiary groups were:

- (i) suggestions for modifications to sites and species for monitoring in the CCAMLR Ecosystem Monitoring Program;
- (ii) requests that CCAMLR consider initiating programs to monitor the levels and effects of plastic pollution and to seek more detailed information regarding entanglement of seals in marine debris;
- (iii) considerable developments in SCAR activity in the field of conservation, including:
 - (a) the establishment of a multidisciplinary Group of Specialists on Antarctic Environmental Affairs and Conservation;
 - (b) the establishment under the Antarctic Treaty of SSSI's in the marine zone (to protect benthic communities);
 - (c) consideration under the Antarctic Treaty of a new category of protected areas which could include CEMP monitoring sites;
 - (d) initiatives at sub-Antarctic islands which might involve establishment of marine buffer zones for protection from fisheries;
- (iv) the establishment of specialist subgroups in krill and fish ecology and physiology designed to be complementary to the CCAMLR Working Groups.

Report of the CCAMLR Observer to the 1988 Meeting
to Review the Operation of the Convention for the
Conservation of Antarctic Seals (CCAS)

46. Following receipt of an invitation extended by the Contracting Parties of CCAS the Chairman reported that, at his suggestion, the Commission had been represented by Belgium at a meeting in London to review the operation of the Convention for the Conservation of Antarctic Seals held from 12 to 16 September 1988. The report of the observer (CCAMLR-VII/BG/17) was presented by the Representative of Belgium.

47. From the information provided at the CCAS meeting, it was clear that the total number of seals killed or captured since CCAS had entered into effect in 1978 had been small and that there

had been no significant adverse effects on seal populations. From statements made it was also clear that the initiation of commercial sealing was unlikely; at least during the next five to ten years.

48. The Commission's attention was drawn to an agreement reached in London that the Governments of the Contracting Parties to CCAS be recommended to add the following new paragraph to the ANNEX to CCAS:

‘8. Co-operation

The Contracting Parties to this Convention shall, as appropriate, co-operate and exchange information with the Contracting Parties to the other international instruments within the Antarctic Treaty System and their respective institutions.’

In this regard CCAMLR had been especially singled out as one such body with which CCAS ought to establish closer relations.

49. CCAS had also focused its attention on the risk of accidental introduction into Antarctica of viruses potentially lethal to native mammals or birds. The meeting had agreed to draw the attention of the Antarctic Treaty Parties and CCAMLR to this potential problem, emphasising the need to take all possible steps to minimise such risks.

50. The Commission recognised the potential vulnerability of Antarctic fauna to diseases that might be accidentally introduced and reference was made to the recent large-scale infection of seals in the North Sea. In view of the likely increase in work on seals in the Antarctic in connection with the CCAMLR Ecosystem Monitoring Program special care should be taken with equipment used for research on Antarctic animals which may have been used on infected animals outside the Convention Area.

51. The delegation of Argentina reported that a decision had been taken, based on results of research, to discontinue the use of dogs in its Antarctic activities. All dogs at Argentine stations in Antarctica are to be brought out. This action was taken to minimise this potential source of accidental introduction into the Antarctic of diseases that might be lethal to Antarctic fauna.

52. Australia asked whether CCAMLR had yet received information from CCAS on these matters. The representative of the United Kingdom, speaking as host to the 1988 CCAS meeting, informed the Commission that the Report of the London meeting (circulated as CCAMLR-VII/BG/6) was at present only available in English. Once the French, Russian and Spanish texts had been agreed with the countries concerned the Report would be printed and issued. Copies would be made available for distribution to Members of the Commission. Only once this

had been done could the United Kingdom, as depositary, initiate the action necessary to give effect to the amendments to the Annex to CCAS, which it had been agreed should be recommended to Governments, and to meet other obligations on the depositary arising from the Report.

53. The Commission agreed that full discussion of this Report should be deferred until it had been issued in the final form in all four official languages.

REPORT OF THE SCIENTIFIC COMMITTEE

54. The Chairman of the Scientific Committee introduced the report (SCAMLR-VII) and drew the Commission's attention to paragraphs requiring the special attention of the Commission.

Krill

55. In accordance with the recommendation of the Scientific Committee, the Commission agreed that a permanent Working Group on Krill should be formed and approved its terms of reference set out in SC-CAMLR-VII, paragraph 2.26.

56. It was agreed that the Working Group on Krill should meet during the intersessional period. The primary objectives for the meeting are given in SC-CAMLR-VII, paragraph 2.29.

57. It was also agreed that a meeting should be held during the intersessional period to develop specific recommendations for the Scientific Committee on the implications of the results from the Krill CPUE Simulation Study. It was noted that there would be considerable value in holding the meeting of the Working Group and the meeting for the Krill CPUE Study back to back at the same location.

58. The Commission gratefully accepted an offer by the United States to host both meetings at the Southwest Fisheries Center in La Jolla, California, USA during 1–14 June 1989.

59. Pursuant to Article XX of the Convention, the Commission agreed that reporting of fine-scale catch data for krill taken from Subarea 48.2 and the three CEMP Integrated Study Areas (SC-CAMLR-V, Annex 6, paragraphs 48, 60 and 70) should continue. It also agreed that fine-scale fishing effort data for krill should be collected by Members and held in national archives.

Fish Resources

60. The Commission noted that the Scientific Committee and its Fish Stock Assessment Working Group had been able to undertake more thorough and wide ranging analyses than in past years due to provision by Members of more detailed and comprehensive data and by the considerable advances made within the Secretariat in its capacity for handling and analysing such data.

61. The Commission noted the usefulness of the assessment summaries in the Scientific Committee's report (SC-CAMLR-VII, Appendix 5, Annex 4) and encouraged the Fish Stock Assessment Working Group to extend the summaries to finfish stocks in other statistical areas.

62. The Commission also welcomed the advice provided by the Scientific Committee (SC-CAMLR-VII, paragraphs 3.15–3.16) in response to its request for advice on various measures relating to the management of fisheries for *Champscephalus gunnari* (CCAMLR-VI, paragraph 84).

63. The Commission noted that the Scientific Committee provided additional advice in respect of catch levels for *Notothenia gibberifrons*, including discussion of the extent and nature of the by-catch of this species during fishing for *Champscephalus gunnari* (SC-CAMLR-VII, paragraphs 3.17 and 3.18) and the potential for conflicting management strategies raised by the issue of by-catches (SC-CAMLR-VII, paragraph 3.19).

64. The Commission encouraged the initiative of the Scientific Committee and the Fish Stock Assessment Working Group in investigating the implications of various alternative strategies for fisheries management (SC-CAMLR-VII, paragraph 3.20). For the present, however, the Commission re-emphasised its decision of last year that an appropriate management strategy for fish stocks would be to limit fishing mortality to a low level, preferably $F_{0.1}$ (CCAMLR-VI, paragraph 61).

65. The Commission noted the data and items of information given in SC-CAMLR-VII (Annex 6) that are required to improve assessment of fish stocks by the Scientific Committee. It was agreed, in accordance with Article XX of the Convention, that every effort should be made to provide this information.

66. The Commission endorsed the proposal made by the Working Group on Fish Stock Assessment and endorsed by the Scientific Committee for changes to the details in the procedures

by which biological data and information from the finfish fisheries should be reported to CCAMLR (SC-CAMLR-VII, paragraph 3.13).

67. The Commission agreed that it was particularly important for Members to provide representative length composition data from commercial fishing (SC-CAMLR-VII, paragraph 3.13). The attention of Members was drawn to their responsibilities in this regard.

Squid

68. The Commission noted that there had been no commercial catch of squid in the Convention Area since 1979 but endorsed the Scientific Committee's view that further research on squid, particularly integrated studies linking squid to their food supplies and predators, were important.

Ecosystem Monitoring and Management

69. The Commission agreed with the Scientific Committee's recommendation that the Working Group for CEMP should meet during the 1989 intersessional period either immediately prior to or after the IWC/CCAMLR Workshop on the Feeding Ecology of Southern Baleen Whales. The Commission gratefully accepted Argentina's offer to host the meeting. It is envisaged that the meeting will be held in early September 1989.

70. The Commission noted the publication of the CCAMLR Standard Method Sheets for Monitoring of Selected Prey Parameters and the need for development by the Ecosystem Monitoring Group of standard method sheets for additional predator parameters, prey parameters and environmental variables.

Registration and Protection of Land-Based CEMP Sites

71. The Report of the Sixth Meeting of the Scientific Committee called attention to the need to protect land-based CEMP study sites from certain forms of human interference and called upon the Commission to advise the Committee on the appropriate procedures for providing such protection (SC-CAMLR-VI, paragraphs 7.32 and 7.51).

72. To assist in considering this matter during the Seventh Meetings of the Scientific Committee and Commission, the Executive Secretary in consultation with the Convener of the Working Group for CEMP, prepared and distributed papers suggesting a possible approach for describing and

affording appropriate protection to CEMP study sites (SC-CAMLR-VII/3 Rev. 1 and CCAMLR-VII/6).

73. The approach outlined in the referenced papers did not fully explore the possibility that measures taken to protect CEMP study sites under CCAMLR could affect and be affected by actions taken under other components of the Antarctic Treaty system and that the procedure for registering CEMP sites should therefore provide for consultation and co-operation with the Antarctic Treaty Consultative Parties and the Contracting Parties to the Convention for the Conservation of Antarctic Seals and the Convention on the Regulation of Antarctic Mineral Resource Activities.

74. The United States delegation prepared and distributed an informal paper to facilitate consideration of this matter.

75. Although it was agreed that the informal U.S. paper provided a useful basis for discussion, there was insufficient time to consider it in depth. It was therefore agreed that the paper should be annexed to this report and be considered at the next Commission meeting. The paper titled 'Registration of Land-Based CEMP Study Sites' is attached at Annex G.

76. In providing preliminary comments on the U.S. paper, several delegations indicated that it should be made clear that the suggested procedures for proposing, registering, and regulating activities at land-based CEMP study sites could apply only to sites in the Antarctic Treaty Area (south of 60° South).

77. Several delegations also noted that, while consultation and co-operation with other components of the Antarctic Treaty System is essential, necessary consultations should be completed without undue delay and provision should be made for restricting, on an interim or provisional basis, activities that could interfere with CEMP studies pending completion of the consultations.

78. The Commission, while noting paragraph 55 of CCAMLR-VI, endorsed paragraphs 5.19 and 5.20 of the Scientific Committee's Report which specify information that should be included in proposals for registration of CEMP study sites and information that should be included in proposed management plans for such sites.

79. The Commission recognised that work was being undertaken to develop management plans for the land-based sites identified in Tables 1 and 4 of SC-CAMLR-VI (Annex 4) and that it must establish a procedure for adopting and implementing such management plans as soon as possible.

Marine Mammals and Bird Populations

80. The Commission endorsed the proposal by the Scientific Committee that it would be useful for the Committee periodically to review the status of marine mammal and bird populations in the Antarctic with particular attention to populations that are increasing or decreasing.

81. The Commission recognised the efforts by two Subgroups of SCAR in the initial phases of this work and asked the Executive Secretary to thank them as well as to ask if they would be prepared to continue to assemble and review such data on trends in Antarctic seals and seabirds.

Review of the Long-Term Program of Work of the Scientific Committee

82. The Commission endorsed the long-term program of work described in the Scientific Committee's Report (SC-CAMLR-VII, paragraphs 8.3–8.11).

83. The Commission agreed with the Scientific Committee's decision that the Secretariat should, in future, circulate requests for information on planned research to national CCAMLR representatives (SC-CAMLR-VII, paragraph 8.8).

84. The Commission noted that the Scientific Committee had re-elected Dr Inigo Everson of the UK to serve as Chairman for another term and offered its congratulations.

CONSIDERATION OF CONSERVATION MEASURES

Review of Existing Measures

85. As a result of a review of existing conservation measures, the Commission agreed that Conservation Measures 1/III, 3/IV, 4/V, 5/V, 6/V, 7/V and 9/VI should remain in force as they stand. Conservation Measures 8/VI and 10/VI expired at the end of the 1987/88 season and on 1 October 1988, respectively. In view of the advice from the Scientific Committee, specifically including that on *C. gunnari* in Statistical Subarea 48.3, requested by the Commission last year, the remaining conservation measures required further consideration.

86. Discussion involved consideration of two main items:

- (a) the efficacy of the conservation measures established by the Commission last year; and

- (b) the necessary measures or actions to be taken in respect of this evaluation and of the discussion of specific items of advice from the Scientific Committee.

87. First, however, the Commission recalled the general fisheries management strategy it adopted last year (SC-CAMLR-VI, paragraphs 61 to 65). This was:

- (a) to limit fishing mortality to a low level of F , preferably $F_{0.1}$; and
- (b) to effect this limitation by means of some combination of TAC's and protection for small fish. The protection for small fish would be achieved by some combination of:
 - (i) establishing a minimum mesh size that will allow small fish to escape capture;
 - (ii) prohibiting fishing in certain areas where small fish are most likely to be caught; and
 - (iii) prohibiting fishing during certain periods of time when small fish are most likely to be caught.

88. Last year the Commission noted the advice of the Scientific Committee that, in respect of the fishery on *C. gunnari* in Subarea 48.3, it would be beneficial to reduce the level of fishing mortality and to protect small fish (CCAMLR-VI, paragraph 68). After considering this advice, the Commission agreed on a management strategy (CCAMLR-VI, paragraph 68):

- (i) limiting catches, i.e. selecting a TAC;
- (ii) developing an appropriate reporting schedule for this catch (Conservation Measure 9/VI); and
- (iii) closing the fishery for a period of time.

89. In reviewing the operation of these measures last year, the Commission noted:

- (a) the catch of *C. gunnari* in Subarea 48.3 reported on Statlant forms was 34 573 tonnes, just below the TAC set of 35 000 tonnes, though the aggregate catch reported to the Secretariat under the existing reporting system (Conservation Measure 9/VI) was only 29 124 tonnes; and

- (b) there were no indications that the provisions of the closed season had been contravened.

Review of Additional Requirements

90. In developing its management policy for 1988/89, the Commission considered each of the main elements of its strategy, viz:

- (a) setting TAC's;
- (b) protecting juvenile fish by:
 - (i) establishing minimum mesh sizes;
 - (ii) prohibiting fishing in certain areas;
 - (iii) prohibiting fishing at certain times.

91. On the advice of the Scientific Committee, it continued to focus this policy on fisheries operating in area 48.3.

TAC's

92. The Scientific Committee responded to the Commission's request for advice on TAC's to achieve low values of fishing mortality, preferably $F_{0.1}$ (CCAMLR-VI, paragraph 84.) The TAC's it calculated for fishing mortality at $F_{0.1}$, and the values it gave for F_{max} for comparison, were:

	$F_{0.1}$	F_{max}
<i>Champsocephalus gunnari</i>	10 194	18 586
<i>Notothenia gibberifrons</i>		
if $M = 0.25$	256	450
if $M = 0.125$	443	720
<i>Pseudochaenichthys georgianus</i>	1 800	
<i>Chaenocephalus aceratus</i>	1 100	

For *Patagonotothen brevicauda guntheri*, no TAC had been calculated, because insufficient data were available to the Working Group from the fishery on existing levels of M , but the recommended policy limiting catches to around the level of recent years was noted.

93. The catches of *C. gunnari* in Subarea 48.3 reported (under Conservation Measure 9/VI which is still in force) since the reopening of the fishery on 1 October were as follows:

Period A (1-10 October) : 10 121 tonnes
Period B (11-20 October) : Report overdue (due 30 October)
Period C (21-31 October) : Report due 10 November

94. The delegation of France supported by other delegations expressed concern at the delay which had occurred in the communication to the Contracting Parties (in accordance with Conservation Measure 9/VI, paragraph 4) of the catch of *C. gunnari* reported for period A of October 1988 in Subarea 48.3. They further expressed the view that the availability of the above information within the required time would have facilitated greatly the formulation of advice by the Scientific Committee to the Commission for the assessment of *C. gunnari* stocks in this subarea.

95. In view of the rate of catch during the first 10 days of October and bearing in mind the advice of the Scientific Committee and that a further 23 days of fishing had taken place since that report, there was unanimous agreement that the fishery should be closed immediately.

96. Furthermore, it was agreed that a situation whereby the level of fishing between the start of a season and the meeting of the Commission could effectively pre-empt the Commission's decisions at that meeting on appropriate TAC's, was unacceptable.

97. Conservation Measure 11/VII was adopted.

98. In order that the prohibition in Conservation Measure 11/VII should have the appropriate management effect it was essential to avoid by-catch of this species in the course of other fishing in the area. Conservation Measure 11/VII therefore also prohibits fishing on specified finfish species in Subarea 48.3 before 20 November 1989.

99. The Commission turned to consideration of the Scientific Committee's advice to the Commission with respect to *Patagonotothen breviceuda guntheri* and decided to limit the catch to a figure of 13 000 tonnes, between the catches of the previous two years.

100. Conservation Measure 12/VII was adopted.

101. The catch limitation on *Patagonotothen breviceuda guntheri* set out in Conservation Measure 12/VII would apply immediately (retrospectively to 1 July 1988). Members should report their aggregate catch to date to the Commission as soon as possible and not later than 1 December 1988.

102. The delegation of Poland noted that the catch reporting system was developed for monitoring the aggregate catch of *Champscephalus gunnari* in Subarea 48.3 in order to determine the date when the fishery on that species should close for all Members fishing in that area. In its opinion it is not necessary to monitor in this way a fishery conducted by a single country.

103. The delegation of the United Kingdom pointed out that there could be no assurance that the fishery would remain in the hands of one country.

104. The Commission expressed concern about the need, in future years, to avoid circumstances such as those which had occurred this year (paragraph 12 above). A draft conservation measure was tabled by the United Kingdom aimed at avoiding a repetition of these circumstances. There was not enough time to consider the full implications of this proposal, more particularly, as it related to the advisability of having TAC's which covered parts of two fishing years, and it was agreed to take up the matter again at the next meeting.

Protection of Juvenile Fish

Minimum mesh size

105. The Commission noted that the response of the Scientific Committee to its request for advice on mesh size was 'to achieve the target size of first capture of 32 cm for *C. gunnari* would require, under conditions of low catch rates, a 107 mm mesh. If selectivity of the net is less under commercial conditions of large catches a correspondingly larger mesh would be required to achieve the desired results.'

106. There was considerable discussion on the background to and interpretation of this advice. It was stated by certain delegations that proposing changes to existing conservation measures governing mesh size selection required further analysis of existing Polish and Spanish data and the analysis of USSR data.

107. The Commission noted with some concern that such views were not clearly reflected either in the advice of the Scientific Committee to the Commission on this topic or in the section on proposals for future work of the Fish Stock Assessment Working Group.

108. The Commission therefore asked the Scientific Committee to complete the evaluation of the whole topic of minimum mesh size for use in the *C. gunnari* fishery, taking into account the Commission's desire to keep fishing mortality around the level $F_{0.1}$ and to protect juvenile fish.

Members were asked to give this topic priority attention before the next meeting of the Fish Stock Assessment Working Group.

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

Closed areas

110. No proposals were made for new conservation measures relating to closed areas.

Closed seasons

111. The Commission noted that when it established a closed season for the *C. gunnari* fishery in Subarea 48.3 last year it did so in the absence of any advice from the Scientific Committee. This year, in respect to the request for advice on closed seasons for *C. gunnari* the Scientific Committee indicated that it had no new data which would suggest alterations to the present closed season.

112. This response was deemed open to conflicting interpretations. In order to clarify the matter the Commission asked the Scientific Committee to evaluate all existing data on *C. gunnari* relevant to proposing closed seasons in the fishery to protect juvenile fish.

Guidance to the Scientific Committee

113. In light of the Commission's consideration of issues arising from the Report of the Scientific Committee, as well as from the development and implementation of conservation measures, and giving due regard to obligations under Article II regarding the restoration of depleted populations, the Commission requests that the Scientific Committee provides advice on management options, and their consequences, for heavily exploited fish stocks, including those subject to by-catches.

114. Such advice should consider, inter alia:

- (i) *C. gunnari*

What are the likely trajectories, of catch, total biomass, and spawning biomass, and the effects upon by-catches of other species, under different patterns of fishing mortality, including:

- (a) different constant levels of F including $F_{0.1}$.
 - (b) a complete ban, or a low value of F for a short period, followed by a higher level
- (ii) *N. gibberifrons*, *N. rossii*
- (a) Is the abundance resulting from F_{\max} a satisfactory measure of the GNAI population level for these species or should another measure be used?
 - (b) What factors, other than directed or incidental catching, might be impeding their recovery?
 - (c) What might be the effect, in terms of the total catches of these species, of the changes of fishing gear suggested for the *C. gunnari* fishery in SC-CAMLR-VII, paragraph 3.17?
 - (d) What will be the likely results of keeping catch levels as high as four times the TAC calculated for F_{\max} on the capability of the exploited part of the stock of *N. gibberifrons* to recover in 20 to 30 years?

115. In light of the anticipated completion of work on mesh sizes and net selectivity, the Commission further requests that the Scientific Committee provides specific recommendations on the appropriate minimum mesh size to protect juvenile fish.

116. In the light of the identified need for further advice on closed seasons for *C. gunnari*, the Commission asks the Scientific Committee to provide specific recommendations on this topic which would assist the recovery of any depleted fish stocks.

117. The Commission also noted that the Scientific Committee had identified a number of items of information and data which were essential to improving their assessments (set out in Annex 6 to the Report of the Scientific Committee). The Commission urged Members to provide this essential data and information or to undertake research leading to their provision as a matter of high priority.

118. The Commission further notes that, in general, its decisions in respect to fisheries management would be facilitated by the Scientific Committee's provision in the future of alternative management recommendations and their consequences for each of the fisheries requiring management. This should include, beside TAC's for the current seasons, a forecast for catch levels in the following season, based upon realistic assumptions about fishing mortality and recruitment.

CONSERVATION MEASURE 11/VII

Prohibition of Directed Fishery on *Champscephalus gunnari*
in Subarea 48.3 from 4 November 1988 to 20 November 1989

119. 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 *Champscephalus gunnari* shall be prohibited from 4 November 1988; this prohibition shall extend, through a closed season from 1 April to 1 October 1989, to 20 November 1989. During this protected period *Champscephalus gunnari*, *Notothenia rossii*, *Notothenia gibberifrons*, *Chaeocephalus aceratus* and *Pseudochaenichthys georgianus* shall not be taken in Statistical Subarea 48.3 except for scientific research purposes.

CONSERVATION MEASURE 12/VII

Catch Limitation on *Patagonotothen brevicauda guntheri*
in Statistical Subarea 48.3 for the 1988/89 Season

120. 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 1988/89 season shall be limited to 13 000 tonnes. For the purpose of implementing this Conservation Measure the catch Reporting System set out in Conservation Measure 9/VI shall apply.

Scientific Research Exemption Provision

121. The Scientific Committee had briefly discussed this topic and made general recommendations with respect to descriptions of size and capacity.

122. The Commission noted that there had been insufficient time for discussion of this issue but that the matter was an important one and should be included on the agenda for the next meeting of the Commission. During the intersessional period all Members were encouraged to consult with appropriate experts to consider ways in which the Register of Permanent Research Vessels might usefully be improved with particular regard to fishing, processing and storage capacity.

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

123. In accordance with a recommendation of the Sixth Meeting of the Commission (CCAMLR-VI, paragraph 99), the Commission established a Standing Committee on Observation and Inspection. The United States was elected Chairman of the Committee and Spain, Vice-Chairman. A copy of the Standing Committee's Report is Annex H.

124. On the recommendation of the Committee, the Commission adopted the following provisions pursuant to Article XXIV of the Convention to verify compliance with measures in effect under the Convention:

125. Observation and Inspection System

- I. Each Member of the Commission may designate observers and inspectors referred to in Article XXIV of the Convention.
 - (a) Designated observers and inspectors shall be familiar with the fishing and scientific research activities to be observed and inspected, the provisions of the Conventions and measures adopted under it.
 - (b) Members shall certify the qualifications of each observer and inspector they designate.

- (c) Observers and inspectors shall be nationals of the Contracting party which designates them and, while carrying out observation and inspection activities, shall be subject solely to the jurisdiction of that Contracting Party.
 - (d) Observers and inspectors shall be able to communicate in the language of the Flag State of the vessels on which they carry out their activities.
 - (e) Observers and inspectors shall be accorded the status of ship's officer while on board such vessels.
 - (f) Names of designated observers and inspectors shall be communicated to the Commission by 1 May each year. Designations shall remain valid until July 1 of the following year.
- II. The Commission shall maintain a register of certified observers and inspectors designated by Members.
- (a) The Commission shall communicate the register of observers and inspectors to each Contracting Party by 31 May each year.
- III. In order to verify compliance with measures adopted under the Convention, observers and inspectors designated by Members shall be entitled to carry out observation and inspection activities on board vessels engaged in scientific research or harvesting of marine living resources in the area to which the Convention applies.
- (a) Observation and inspection may be carried out by designated observers and inspectors from vessels of the designating states.
 - (b) Ships carrying observers or inspectors shall carry a special flag or pennant approved by the Commission to indicate that the observers or inspectors on board are carrying out observation and inspection duties in accordance with this system.
 - (c) Such observers and inspectors may also be placed on board vessels, with the schedule of embarkation and disembarkation of observers and inspectors subject to arrangements to be concluded between the designating State and the Flag State.

IV. Each Contracting Party shall provide to the Commission by 1 May each year a list of all of its flag vessels intending to harvest marine living resources in the Convention Area during the year beginning 1 July. Such list shall include:

- name of vessel;
- call sign of the vessel registered by appropriate authorities of the Flag state;
- home port and nationality of vessel;
- owner or charterer of vessel;
- notification that the master of the vessel has been informed of the measures in force for the area or areas where the vessel will be harvesting marine living resources in the Convention Area.

- (a) The Commission shall communicate to all Parties by 31 May each year a consolidated list of all such vessels. The list shall also include the names of research vessels contained in the Register of Permanent Research Vessels compiled in accordance with paragraph 60 of the Report of the Fifth Meeting of the Commission.
- (b) Each Contracting Party shall also notify the Commission as soon as possible of any of its flag vessels added to or deleted from the list during an ongoing fishing season. The Commission shall promptly communicate this information to the other Contracting Parties.

V.

- (a) Any vessel present in the Convention Area for the purpose of harvesting or conducting scientific research on marine living resources shall, when given the appropriate signal in the International Code of Signals by a ship carrying an observer or inspector (as signified by flying the flag or pennant referred to above), stop or take such other actions as necessary to facilitate the safe and prompt transfer of the observer or inspector to the vessel, unless the vessel is actively engaged in harvesting operations, in which case it shall do so as soon as practicable.

- (b) The master of the vessel shall permit the observer or inspector, who may be accompanied by appropriate assistants, to board the vessel.
- VI. Observers and inspectors shall have the authority to observe and inspect catch, nets and other fishing gear as well as harvesting and scientific research activities, and shall have access to records and reports of catch and location data insofar as necessary to carry out their functions.
- (a) Each observer and inspector shall carry an identity document issued by the designating State in a form approved or provided by the Commission stating that the observer or inspector has been designated to carry out observation and inspection in accordance with this system.
 - (b) On boarding a vessel, an observer or inspector shall present the document described in VI (a) above.
 - (c) The observation and inspection shall be carried out so that the vessel is subject to the minimum interference and inconvenience. Inquiries shall be limited to the ascertainment of facts in relation to compliance with the Commission measures in effect for the Flag State concerned.
 - (d) Observers and inspectors may take photographs as necessary to document any alleged violation of Commission measures in effect. Duplicate photographs shall be taken, one of which shall be attached to the notice of alleged violations provided to the vessel master in accordance with paragraph VIII below.
 - (e) Observers and inspectors shall affix an identification mark approved by the Commission to any net or other fishing gear which appears to have been used in contravention to conservation measures in effect and shall record this fact in the reports and notification referenced in paragraph VIII below.
 - (f) Observers and inspectors shall be provided appropriate assistance by the master of the vessel in carrying out their duties, including access as necessary to communications equipment.
- VII. If a vessel refuses to stop or otherwise facilitate transfer of an observer or inspector, or if the master or crew of a vessel interferes with the authorised activities of an observer or inspector, the observer or inspector involved shall prepare a detailed report, including a full description of all the circumstances and provide the report to the

designating state to be transmitted in accordance with the relevant provisions of paragraphs VIII and IX.

- (a) Interference with an observer or inspector or failure to comply with reasonable requests made by an observer or inspector in the performance of his duties shall be treated by the Flag State as if the observer or inspector were an observer or inspector of that State.
- (b) The Flag State shall report on actions taken under this paragraph in accordance with paragraph X below.

VIII. Observers and inspectors shall prepare detailed reports on their observation and inspection activities. These reports shall be provided to the designating Member which shall in turn report to the Commission.

- (a) Before leaving vessels that have been observed and inspected, the observer or inspector shall give the master of the vessel a Certification of Inspection and a written notification of any alleged violations of Commission measures in effect and shall afford the master opportunity to comment in writing on any such notification;
- (b) The ship's master shall sign the notification to acknowledge receipt and the opportunity to comment on it.

IX. Reports referred to in paragraph VIII shall be provided to the Flag State and the Flag State shall be afforded the opportunity to comment on them prior to their consideration by the Commission.

X. If, as a result of observation and inspection activities carried out in accordance with these provisions, there is evidence of violation of measures adopted under the Convention, the Flag State shall take steps to prosecute and, if necessary, impose sanctions. The Flag State shall report any such prosecutions and sanctions to the Commission.

126. With reference to paragraph 4 of the Report of the Standing committee, the Commission confirmed that paragraph 104 of CCAMLR-VI set out procedures for such cases.

Future Steps

127. Since the provisions of the system of observation and inspection elaborated in paragraph 125 above could be implemented as early as the 1989/90 fishing season, the Commission requested that the Executive Secretary review existing international systems of observation and inspection and, based upon this review, prepare and distribute the following to Contracting Parties in advance of the Eighth Meeting of the Commission:

- a proposed design for a flag or pennant to be flown by vessels to indicate that they are carrying observers or inspectors designated by Contracting Parties pursuant to paragraph III (b) above;
- a draft of the Certificate of Inspection, identity documents, and a proposed mark for identifying fishing gear, as provided for in paragraph VI of the system;
- a list of the Commission measures currently in effect;
- a list of observers and inspectors that have been designated by Parties pursuant to paragraph I (f) of the system;
- a list of the vessels which Contracting Parties, in respect to paragraph IV of the system, have advised the Commission are intending to harvest marine living resources in the Convention Area during the 1989/90 season; and
- a description of costs and funding of other international fishery inspection schemes.

128. Recognising that it would be desirable to work towards the standardisation of reporting by observers and inspectors, the Commission also requested that the Executive Secretary prepare and distribute in advance of the next Commission meeting, taking into account existing international practice, drafts of:

- (i) a check list that could be used by observers and inspectors to facilitate compliance monitoring;
- (ii) a format for reporting the results of observation and inspection for compliance monitoring;

- (iii) a dictionary of questions and terms, in the languages of Contracting Parties conducting harvesting activities, to assist observers and inspectors in carrying out their duties; and
- (iv) such other information as may be deemed necessary or useful.

129. Members' attention was drawn to the Committee's request for copies of relevant domestic laws and regulations governing the performance and requirements of observers and inspectors.

130. Japan's concerns about the possible size of inspection teams and the need to define the term 'assistant' were shared by the USSR.

131. The Commission noted the specific comments included in paragraphs 5 to 12 of the Report of the Standing Committee. The Commission looked forward to further progress and to the early implementation of the system.

COMPLIANCE WITH CONSERVATION MEASURES IN FORCE UNDER ARTICLE X

132. This item was referred to the Standing Committee on Observation and Inspection.

133. The delegation of the United Kingdom pointed out that in so far as paragraphs 104 of the Report of the Sixth Meeting of the Commission referred to Article X (2) of the Convention, the provisions of that paragraph of the Report ought to be included in the System of Observation and Inspection. Since there was not time to consider this question in detail, it was agreed to defer it for consideration at the next meeting of the Commission. The Committee confirmed its understanding that, pending the outcome of such consideration, the provisions of paragraph 104 will continue to apply.

134. The delegation of the United Kingdom also brought to the attention of the Standing Committee, its report on activities covered by Article X and distributed to Contracting Parties as CCAMLR-VII/BG/8.

135. The delegation of the United Kingdom drew attention to a failure to comply with Conservation Measure 9/VI, which had come to the Commission's attention during its review of Conservation Measures at this meeting. The Commission emphasised the seriousness of the matter and reminded Members of their obligations under the Convention.

DEVELOPMENT OF A CONSERVATION STRATEGY FOR ANTARCTIC MARINE LIVING RESOURCES

136. It was agreed that the title of this agenda item in future would be 'Development of Approaches to Conservation of Antarctic Marine Living Resources' and that the name of the Working Group would be changed to the 'Working Group for the Development of Approaches to Conservation of Antarctic Marine Living Resources'. The changes were made in order to avoid confusion regarding the nature of the work under this item.

137. The delegation from Australia presented the Working Group's Report (CCAMLR-VII/11 Rev. 1).

138. In the report, a need was identified for clarification of the status of paragraphs 114 and 115 in the report of last year's Commission meeting.

139. It was noted that paragraph 114 was a summary of Article II of the Convention and as such should not be accorded special status. It was agreed, however, that paragraph 115 was a useful extension of the principles set out in Article II and could, with one modification to subparagraph (ii), be endorsed by the Commission as a basis for further work by the Group. The basis for the revision was taken from paragraph 14 of Annex 1 to the Working Group's Report. The revised subparagraph (ii) of paragraph 115 reads:

- (ii) 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;

140. The Working Group's Report contained a suggestion that implementation of Article II 3 (b) of the Convention would be assisted by the development of operational definitions for depletion and for target levels for recovery of depleted populations. The Working Group agreed to seek advice in this regard from the Scientific Committee and suggested that the advice should contain information for groups of species about the likely range of levels of greatest net annual increment.

141. The Working Group requested the Scientific Committee's advice on the ability of the CCAMLR Ecosystem Monitoring Program (CEMP) to detect changes in ecological relationships and to recognise the effects of simple dependencies between species, including distinguishing between natural fluctuations and those induced by fisheries.

142. The report recognised that conservation approaches have to consider both short and long time scales and it was noted that the Working Group for Fish Stock Assessment had already begun to develop short-term approaches to the management of finfish stocks.

143. The Working Group agreed that the Antarctic should not be regarded as a single ecosystem but, rather, as a set of linked subsystems subject to widely differing levels of exploitation in which the potential effects of fisheries on related subsystems would have to be considered.

144. The report drew attention to the value of additional information about plans for fisheries development and descriptions of operational tactics applied to fishing activities. The delegations from the Soviet Union and Japan noted certain difficulties in providing such information.

Future Work

145. It was noted that groups to deal with single species or groups of species (i.e. IWC, SCAR Group of Specialists on Seals, the Working Group on Krill and the Fish Stock Assessment Working Group) already exist and it was agreed that the future work of the Group should be carefully managed in order to avoid duplication in relation to these other Groups.

146. It was suggested, however, that it is also important to encourage further development of multispecies and ecosystem approaches. It was agreed that the Scientific Committee and Commission should organise their work in such a way that multispecies and ecosystems approaches would be given necessary emphasis. In this context, the Commission agreed that all Working Groups should provide the Scientific Committee with information about any multispecies interactions that appear to be significant.

147. It was suggested that the development of CEMP should continue on an experimental basis until it was known whether or not a practically feasible monitoring program for predators, prey and environmental parameters could be developed to the point where:

- a) natural variations could be detected and explained;
- b) the effects of humans as predators on one or more species could be detected in terms of dependent species;
- c) the cost/effectiveness of monitoring as an input to single species and ecological management could be calculated.

148. The delegation from Japan suggested that the Commission would, in view of recent changes in Antarctic Ecosystems, have to define the characteristics of the ecosystem that it wished to conserve in order to develop suitable approaches to conservation strategies. In this connection other delegations drew attention to the conservation principles established in Article II of the Convention.

149. The Commission agreed that there was a need to begin development of possible conservation approaches for achieving the objectives of Article II. It was also agreed, however, that the priority for the development of long-term ecosystem oriented approaches should be determined in relation to other important tasks.

150. The Commission agreed that the Working Group should communicate intersessionally concerning the future direction of its work. In doing so, members could consider the range of issues which had emerged at this year's meetings in the light of its second term of reference.

CO-OPERATION WITH OTHER INTERNATIONAL ORGANISATIONS

151. The Commission took note of the Report of the CCAMLR observer to the 1988 Meeting of the International Whaling Commission (New Zealand). The 1989 Meeting will be held in San Diego, USA from 12 to 16 June. The United States agreed to act as the CCAMLR observer.

152. The Commission's attention was drawn to a statement transmitted to the Executive Secretary from the Secretary of the Intergovernmental Oceanographic Commission (IOC) setting down areas of common interest between CCAMLR and the IOC. The statement was distributed as CCAMLR-VII/BG/15.

ASOC Request for Observer Status

153. The Commission considered the application from ASOC for observer status at meetings of the Commission and Scientific Committee. Following informal consultations the Commission agreed that the Chairman should send an invitation to ASOC as follows:

'The Commission invites ASOC, as an umbrella organisation representing non-governmental organisations that are its members, to attend sessions of the Seventh Meeting of the Commission as an observer. On the basis of its Rules of Procedure the Commission issues the invitation on the following understandings:

- (a) ASOC's attendance at the Commission's sessions will be regulated by the provisions of the Convention and the Commission's Rules of Procedure, in particular Rules 32, 33 and 34;
- (b) ASOC will designate one person who will be its representative at Commission sessions;
- (c) the ASOC representative may attend plenary sessions of the Commission only.

If ASOC accepts the above invitation, its representative will provide a written undertaking to the Chairman of the Commission to abide by the above understandings and that, in conformity with normal practice, the representative and ASOC will at all times respect the confidentiality of the discussions at private sessions of the Commission and will not make them public.

The above invitation applies only to sessions of the Seventh Meeting of the Commission. The question of ASOC's attendance at future meetings of the Commission will be considered by Commission members in accordance with the Commission's Rules of Procedure.'

154. With respect to the penultimate paragraph of the invitation the Commission noted that the term 'in conformity with normal practice' was to be understood by reference to correspondence from the Executive Secretary to ASOC of 23 September 1985 (see CCAMLR-V/8).

155. On receipt of the above invitation ASOC sent a letter to the Chairman accepting the invitation and providing the undertaking requested therein.

156. A number of delegations expressed satisfaction with the outcome of the application for observer status submitted by ASOC and the Commission welcomed the ASOC representative who attended the remainder of the meeting.

ELECTION OF CHAIRMAN OF THE COMMISSION

157. After being nominated by Belgium and seconded by the Vice-Chairman, Korea, and the USSR, Brazil was elected Chairman of the Commission to serve until the conclusion of the Commission's Meeting in 1990.

NEXT MEETING

158. The next meeting of the Commission and the Scientific Committee will be held in Hobart in the period 6 to 17 November 1989. Several preparatory meetings will be held on Sunday, 5 November 1989.

159. The Commission was reminded of its past discussions on the timing of its meetings. The need for advice from the Scientific Committee based on data from the most recent season tends to push the date of the meeting later into the year whereas the importance of establishing measures to apply in the season that may have already begun requires an earlier meeting. A compromise between these must be reached, but it was thought that the date set for 1989 was perhaps a little late in the year and for 1990 the meeting should begin in the last week of October.

OTHER BUSINESS

160. The Commission had received an application from Greenpeace International for observer status at Commission Meetings. It was agreed that in replying to the request the Executive Secretary should inform Greenpeace International that the Commission was not prepared to grant it observer status at this time.

ADOPTION OF REPORT AND CLOSE OF MEETING

161. The Commission adopted the Report of its Seventh Meeting and the Chairman closed the Meeting.

LIST OF MEETING PARTICIPANTS

LIST OF MEETING PARTICIPANTS

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Ambassador for Belgium to Malaysia
Kuala Lumpur

ARGENTINA

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Ministro
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Alternative Representatives:

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Director of the State Fisheries Station
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BRAZIL

Representative: Ambassador Marcos Henrique C. CÔRTEZ
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**OFFICIAL OPENING SPEECH TO THE SEVENTH MEETING
OF THE COMMISSION FOR THE CONSERVATION
OF ANTARCTIC MARINE LIVING RESOURCES**

**E. Samoteikin
(USSR Ambassador Extraordinary and
Plenipotentiary to Australia)**

**OFFICIAL OPENING SPEECH TO THE SEVENTH MEETING
OF THE COMMISSION FOR THE CONSERVATION
OF ANTARCTIC MARINE LIVING RESOURCES**

Mr Chairman,
Distinguished Delegates,
Ladies and Gentlemen,

This year I have the great honour, on behalf of the Soviet Union, to open the Seventh Meeting of the Commission for the Conservation of Antarctic Marine Living Resources.

Not only do the spirit and letter of the Convention, in accordance with which this organisation was established, serve the interests of the conservation and rational use of Antarctica and its very rich biological resources, but they are also logically linked to the desire of all humankind to prevent the destruction of the earth's biosphere.

Modern science and technology have given people the means to alter nature, giving rise to encroachments upon it, and often, without foreseeing the consequences, to the rending and destruction of the mechanisms balancing natural processes. It is precisely because of this that the acute problem of acid rain has arisen in areas of Europe, Asia and North America, and, on a global scale, the problem of changes in the world's climate.

Today ecological problems have assumed a broad social and economic nature, are reflected in the programs of all political parties and governments and are given special attention by the international community and the mass media.

There is ever-increasing awareness and support in the world for the idea of a close inter-relationship among all aspects of international security and its provision within the framework of a global, comprehensive mechanism that combines the efforts of all countries in the interest of military, political, economic and ecological security.

In his address to the 43rd Session of the UN General Assembly, Soviet Foreign Minister E.A. Shevardnadze put the threat of ecological disaster on a par with the nuclear threat in space.

What efforts has humankind made to counter the growing danger of destruction?

- An increasing awareness that we live in a complex, contradictory, but closely inter-connected world with its common human priorities, concerns and needs;

- The first real steps towards averting the thermonuclear threat, success – albeit fragile – in resolving conflict situations, growing trust and mutual understanding, the establishment of favourable conditions, and an increased maturity in addressing and solving problems on a global scale;
- A profound concern for the serious ecological problems that have accumulated throughout the world and whose consequences are unforeseeable.

The international community – and I am pleased to note this – is now actively attempting to overcome these problems. Multilateral mechanisms in various spheres of ecological co-operation have been created and implemented. Among them is the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), established under the auspices of the Antarctic Treaty and actively serving these aims.

In seven years CCAMLR has developed into a vigorous working body consisting of 20 members and 4 acceding states, into an organisation which has made great headway from solving its own practical problems to mapping out a strategy for the conservation of marine living resources and in international ecosystem monitoring program:

- A fisheries and biological data bank has been established, making it possible to undertake realistic assessments of the status of resources and to take measures for their conservation and rational use;
- Measures have been taken to prevent pollution of Convention waters;
- This meeting makes the beginning of the work of the Committee on Observation and Inspection aimed at developing a system of fisheries inspection – an additional mechanism guaranteeing the effectiveness of measures adopted by CCAMLR.

The Scientific Committee of CCAMLR has gathered together leading scientists and experts in marine biology, and has become a competent body which accomplishes the tasks set by the Convention. The USSR believes that it is necessary to strengthen the role of this body in formulating measures within the framework of the developing Conservation Strategy for Antarctic marine living resources

The Soviet Union was instrumental in drawing up the Convention and establishing CCAMLR, and it continues to take an active part in the work of the Commission and its Scientific Committee.

The Soviet Union has been actively fishing in the Convention Area since 1970, although it is well-known that this region's share in the total Soviet catch of marine resources is only 4–5%. In comparative terms, a far greater proportion of the USSR's activities in Convention waters is taken up by scientific research. The first studies of the Antarctic during the International Geophysical Year were followed by the first research into its surrounding waters. The first integrated scientific expeditions at sea were undertaken as early as the beginning of the 1960s. Ten years of strenuous work has produced data on the stocks and distribution of key species in Antarctic waters, which has laid the basis for their rational use.

It should be noted that the first CCAMLR Conservation Measures adopted in 1984 fully took account of the USSR's national fisheries regulations existing at the time. The fishery is inextricably linked to the collection of extensive data necessary for the assessment of stocks of commercial species.

The CCAMLR Convention is unique in the sense that the rational use of the resources in its waters includes taking into account the interaction of key elements of the ecosystem. Such an approach has never before been taken in drawing up the numerous conventions that regulate harvesting activities in other parts of the World Ocean.

Under these conditions, the task of conservation and rational use of marine resources is extremely complicated. Science is only beginning the search for ways to accomplish it.

This is why the long-term ecosystem monitoring program adopted by CCAMLR requires the efforts of many scientists and large financial expenditure. Only an international organisation is capable of implementing such a program, individual countries are not. The Soviet Union favours constructive co-operation in addressing these issues on a strictly scientific, rational and non-discriminatory basis and strictly in accordance with the provisions of the Convention, and calls upon all Members of the Commission, including those not engaged in fishing activities, to take part in this co-operation.

CCAMLR already has examples of such co-operation. Joint scientific cruises by the USA and Poland, the USSR and Australia and the USSR and France are only some of the examples in recent years. We hope that they increase and produce tangible results.

CCAMLR's area of responsibility is Antarctic marine living resources. Through joint efforts with other international organisations – the International Whaling Commission, the Scientific Committee on Antarctic Research and Antarctic Treaty Consultative Meetings – the waters surrounding this icy continent must become an example of humankind's rational approach to nature.

Allow me to express my confidence that the Commission will continue to play the role of an effective international forum, taking decisions on the basis of consensus and serving the interests of all parties concerned. This will undoubtedly help to strengthen the entire Antarctic Treaty System.

The Seventh Meeting of CCAMLR is destined to take another step in this direction. I hope that this meeting is a success and that the decisions taken here are in keeping with the spirit of consensus and international co-operation.

The beautiful land of Tasmania and the hospitality and goodwill of its people will promote this.

I wish all participants in the Meeting success in their work and hope that they find effective forms of co-operation and mutual understanding, and that an atmosphere will be created within CCAMLR that is worthy of a civilised community of nations which will help to solve the urgent and acute problems facing humankind.

AGENDA FOR THE SEVENTH MEETING OF THE COMMISSION

AGENDA FOR THE SEVENTH MEETING OF THE COMMISSION

1. Opening of the Meeting
2. Organisation of the Meeting
 - (i) Adoption of the Agenda
 - (ii) Report by the Chairman
3. Finance and Administration
 - (i) Examination of Audited Financial Statements for 1987
 - (ii) Appointment of External Auditor
 - (iii) Review of Budget for 1988
 - (iv) Draft Budget for 1989 and Forecast Budget for 1990
 - (v) Secretariat Staffing
 - (vi) Executive Secretary's Study of Specific Expenditure Items
4. Assessment and Avoidance of Incidental Mortality of Antarctic Marine Living Resources
5. Co-operation with Other Elements of the Antarctic Treaty System
6. Report of the Scientific Committee
7. Consideration of Conservation Measures
 - (i) Review of Existing Measures
 - (ii) Scientific Research exemption Provision
 - (iii) Consideration of Additional Requirements
8. Establishment of a System of Observation and Inspection, Article XXIV of the Convention
9. Compliance with Conservation Measures in Force
10. Development of a Conservation Strategy for Antarctic Marine Living Resources
11. Co-operation with Other Elements of the Antarctic Treaty System

12. Election of the Chairman of the Commission
13. Next Meeting
14. Other Business
15. Report of the Seventh Meeting of the Commission
16. Close of the Meeting

LIST OF MEETING DOCUMENTS

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COMMISSION DOCUMENTS

- CCAMLR-VII/1 PROVISIONAL AGENDA FOR THE SEVENTH MEETING
OF THE COMMISSION FOR THE CONSERVATION OF
ANTARCTIC MARINE LIVING RESOURCES
- CCAMLR-VII/2 ANNOTATION TO THE PROVISIONAL AGENDA FOR
THE SEVENTH MEETING OF THE COMMISSION
Executive Secretary
- CCAMLR-VII/3 PROVISIONAL AGENDA FOR THE STANDING
COMMITTEE ON ADMINISTRATION AND FINANCE
- CCAMLR-VII/4 EXAMINATION OF THE AUDITED FINANCIAL
STATEMENTS AND APPOINTMENT OF AN EXTERNAL
AUDITOR
Executive Secretary
- CCAMLR-VII/5 REVIEW OF THE 1988 BUDGET, DRAFT 1989 BUDGET
AND FORECAST 1990 BUDGET
Executive Secretary
- CCAMLR-VII/6 REGISTRATION AND PROTECTION OF MONITORING
SITES
Convener of the Working Group for CEMP and the
Secretariat
- CCAMLR-VII/7 REVIEW OF EXPENDITURES
Executive Secretary
- CCAMLR-VII/8 SECRETARIAT STAFFING
Executive Secretary
- CCAMLR-VII/9 UNITED STATES ACTIVITIES RELATED TO ASSESSMENT
AND AVOIDANCE OF INCIDENTAL MORTALITY OF
ANTARCTIC MARINE LIVING RESOURCES
United States of America
- CCAMLR-VII/10 PROPOSAL TO ESTABLISH A STANDING COMMITTEE
ON CONSERVATION MEASURES
Delegate of the German Democratic Republic

- CCAMLR-VII/11 REPORT OF THE MEETING OF THE WORKING GROUP FOR THE DEVELOPMENT OF A CONSERVATION STRATEGY FOR ANTARCTIC MARINE LIVING RESOURCES
- CCAMLR-VII/11 Rev. 1 REPORT OF THE MEETING OF THE WORKING GROUP FOR THE DEVELOPMENT OF A CONSERVATION STRATEGY FOR ANTARCTIC MARINE LIVING RESOURCES
- CCAMLR-VII/12 TOWARDS THE FURTHER DEVELOPMENT OF THE CONSERVATION STRATEGY SET OUT IN ARTICLE II OF THE CONVENTION
Delegation of United Kingdom
- CCAMLR-VII/13 THE EXECUTIVE SECRETARY'S REPORT OF THE MEETING OF THE STANDING COMMITTEE ON ADMINISTRATION AND FINANCE
Executive Secretary
- CCAMLR-VII/14 INVITATION TO ASOC FROM THE CHAIRMAN OF THE COMMISSION
Chairman of the Commission
- CCAMLR-VII/15 THE REPORT OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION

- CCAMLR-VII/MA/1 REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88
France
- CCAMLR-VII/MA/2 REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88
Spain
- CCAMLR-VII/MA/3 REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88
United Kingdom
- CCAMLR-VII/MA/4 REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88
USSR
- CCAMLR-VII/MA/5 REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88
South Africa

CCAMLR-VII/MA/6	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Poland
CCAMLR-VII/MA/7	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Japan
CCAMLR-VII/MA/8	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Australia
CCAMLR-VII/MA/9	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Federal Republic of Germany
CCAMLR-VII/MA/10	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Brazil
CCAMLR-VII/MA/11	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 United States of America
CCAMLR-VII/MA/12	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Belgium
CCAMLR-VII/MA/13	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Chile
CCAMLR-VII/MA/14	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 New Zealand
CCAMLR-VII/MA/15	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Republic of Korea
CCAMLR-VII/MA/16	REPORT OF MEMBER'S ACTIVITIES IN THE CONVENTION AREA IN 1987/88 Argentina

CCAMLR-VII/MA/17 REPORT OF MEMBER'S ACTIVITIES
IN THE CONVENTION AREA IN 1987/88
Norway

CCAMLR-VII/MA/18 REPORT OF MEMBER'S ACTIVITIES
IN THE CONVENTION AREA IN 1987/88
German Democratic Republic

CCAMLR-VII/BG/1 LIST OF MEETING DOCUMENTS

CCAMLR-VII/BG/1 Rev 1 LIST OF MEETING DOCUMENTS

CCAMLR-VII/BG/2 LIST OF MEETING PARTICIPANTS

CCAMLR-VII/BG/2 Rev. 2 LIST OF MEETING PARTICIPANTS

CCAMLR-VII/BG/3 CONSERVATION MEASURES 8/VI, 9/VI AND 10/VI.
REPORTED CATCHES OF *CHAMPSOCEPHALUS*
GUNNARI FROM SUBAREA 48.3 IN 1987/88
Secretariat

CCAMLR-VII/BG/4 ACCUMULATION OF STRANDED PLASTIC OBJECTS
AND OTHER ARTEFACTS AT INACCESSIBLE ISLAND,
CENTRAL SOUTH ATLANTIC OCEAN
P.G. Ryan (South Africa) and
B.P. Watkins (South Africa)

CCAMLR-VII/BG/5 REGISTER OF PERMANENT RESEARCH VESSELS
Secretariat

CCAMLR-VII/BG/6 REPORT OF THE 1988 MEETING TO REVIEW THE
OPERATION OF THE CONVENTION FOR THE
CONSERVATION OF ANTARCTIC SEALS
Delegation of United Kingdom

CCAMLR-VII/BG/7 MEMBER'S REPORT ON ACTIVITIES ON ASSESSMENT
AND AVOIDANCE OF INCIDENTAL MORTALITY OF
ANTARCTIC MARINE LIVING RESOURCES 1987/88
Argentina

CCAMLR-VII/BG/8 COMPLIANCE WITH CONSERVATION MEASURES IN
FORCE
Secretariat

CCAMLR-VII/BG/9 SCIENTIFIC RESEARCH EXEMPTION PROVISION
Secretariat

- CCAMLR-VII/BG/10 REPORT ON THE ASSESSMENT AND AVOIDANCE OF
INCIDENTAL MORTALITY IN THE CONVENTION AREA
IN 1987/88
United Kingdom
- CCAMLR-VII/BG/11 REPORT ON THE ASSESSMENT AND AVOIDANCE OF
INCIDENTAL MORTALITY IN THE CONVENTION AREA
IN 1987/88
Republic of Korea
- CCAMLR-VII/BG/12 REPORT ON ASSESSMENT AND AVOIDANCE OF
INCIDENTAL MORTALITY IN THE CONVENTION AREA
IN 1987/88
USSR
- CCAMLR-VII/BG/13 REPORT OF THE CCAMLR OBSERVER TO THE
INTERNATIONAL WHALING COMMISSION
Observer, New Zealand
- CCAMLR-VII/BG/14 REPORT ON THE ASSESSMENT AND AVOIDANCE OF
INCIDENTAL MORTALITY IN THE CONVENTION AREA
IN 1987/88
Australia
- CCAMLR-VII/BG/15 STATEMENT FROM IOC
Secretary IOC
- CCAMLR-VII/BG/16 INTERNATIONAL MEETINGS OF INTEREST TO CCAMLR
Secretariat
- CCAMLR-VII/BG/17 REPORT OF THE CCAMLR OBSERVER TO CCAS 1988
Observer, Belgium
- CCAMLR-VII/BG/18 OFFICIAL OPENING SPEECH TO THE SEVENTH
MEETING OF THE COMMISSION FOR THE
CONSERVATION OF ANTARCTIC MARINE LIVING
RESOURCES
E. Samoteikin (USSR Ambassador Extraordinary and
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SCIENTIFIC COMMITTEE DOCUMENTS

SC-CAMLR-VII/1	PROVISIONAL AGENDA FOR THE SEVENTH MEETING OF THE SCIENTIFIC COMMITTEE FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES
SC-CAMLR-VII/2	ANNOTATION TO THE PROVISIONAL AGENDA FOR THE SEVENTH MEETING OF THE SCIENTIFIC COMMITTEE Chairman of the Scientific Committee
SC-CAMLR-VII/3	REGISTRATION OF MONITORING SITES Convener of the Working Group for CEMP and the Secretariat
SC-CAMLR-VII/3 Rev. 1	REGISTRATION OF MONITORING SITES Convener of the Working Group for CEMP and the Secretariat
SC-CAMLR-VII/4	REPORT OF THE SEVENTH MEETING OF THE SCIENTIFIC COMMITTEE
SC-CAMLR-VII/5	CCAMLR ECOSYSTEM MONITORING PROGRAMME. MONITORING PREY I. Everson (UK)
SC-CAMLR-VII/6	REPORT ON THE KRILL CPUE SIMULATION STUDY Convener (J. Beddington)
SC-CAMLR-VII/7	WORKING GROUP FOR THE CCAMLR ECOSYSTEM MONITORING PROGRAM. REPORT ON INTERSESSIONAL ACTIVITIES IN 1987/88 Convener (K.R. Kerry)
SC-CAMLR-VII/7 Rev. 1	WORKING GROUP FOR THE CCAMLR ECOSYSTEM MONITORING PROGRAM. REPORT ON INTERSESSIONAL ACTIVITIES IN 1987/88 Convener (K.R. Kerry)
SC-CAMLR-VII/8	MATTERS ARISING FROM THE MEETING OF THE STEERING COMMITTEE FOR THE JOINT CCAMLR/IWC WORKSHOP ON THE FEEDING ECOLOGY OF SOUTHERN BALEEN WHALES D.G.M. Miller and Y. Shimadzu CCAMLR Representatives
SC-CAMLR-VII/9	STATUS OF POPULATIONS OF ANTARCTIC MARINE MAMMALS AND BIRDS Australia

- SC-CAMLR-VII/10 REPORT OF THE FISH STOCK ASSESSMENT WORKING
GROUP
(Hobart, Australia, 12–20 October, 1988)
- SC-CAMLR-VII/11 CCAMLR AD HOC WORKING GROUP ON KRILL.
SUMMARY OF ACTIVITIES DURING 1987/88 AND
SUGGESTIONS FOR FUTURE ACTION
Convener (D.G.M. Miller)
- SC-CAMLR-VII/12 REPORT OF CCAMLR OBSERVER TO SCAR 1988
Observer (J.P. Croxall)
- SC-CAMLR-VII/13 REPORT OF THE INFORMAL GROUP ON THE
LONG-TERM PROGRAM OF WORK FOR THE SCIENTIFIC
COMMITTEE
(DRAFT)
Convener (K. Sherman)
- *****
- SC-CAMLR-VII/BG/1 SUMMARY OF KRILL CATCHES
Secretariat
- SC-CAMLR-VII/BG/2 SUMMARY OF FISHERIES DATA
Secretariat
- SC-CAMLR-VII/BG/2
Rev. 1 SUMMARY OF FISHERIES DATA
Secretariat
- SC-CAMLR-VII/BG/3 BIRD ISLAND MONITORING PROGRAMME
J.P. Croxall et al. (UK)
- SC-CAMLR-VII/BG/4 BIRD ISLAND SOUTH GEORGIA
ENVIRONMENTAL ASSESSMENT
W.N. Bonner (UK) and J.P. Croxall (UK)
- SC-CAMLR-VII/BG/5 FISH PREY OF THE WANDERING ALBATROSS
DIOMEDEA EXULANS AT SOUTH GEORGIA
J.P. Croxall et al. (UK)
- SC-CAMLR-VII/BG/6 DESTRUCTION OF ANTARCTIC TERRESTRIAL
ECOSYSTEMS BY A RAPIDLY INCREASING FUR SEAL
POPULATION
R.I. Lewis Smith (UK)

- SC-CAMLR-VII/BG/8 CCAMLR ECOSYSTEM MONITORING PROGRAM.
PREDATOR MONITORING PARAMETERS. DATA
REPORTING SHEETS
DRAFT
Secretariat
- SC-CAMLR-VII/BG/9 REPORT TO THE SCIENTIFIC COMMITTEE OF CCAMLR
ON THE MEETING OF THE STEERING COMMITTEE FOR
THE JOINT CCAMLR/IWC WORKSHOP ON THE FEEDING
ECOLOGY OF SOUTHERN BALEEN WHALES
D.G.M. Miller and Y. Shimadzu
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- SC-CAMLR-VII/BG/10 INTERSESSIONAL ACTIVITIES OF THE CCAMLR AD
HOC WORKING GROUP ON KRILL
Convener (D.G.M. Miller)
- SC-CAMLR-VII/BG/11 SELECTIVITY OF STANDARD POLISH COMMERCIAL
TRAWL CODENDS ON ANTARCTIC FISHING GROUNDS
J. Zaucha (Poland)
- SC-CAMLR-VII/BG/12 ANALYSIS AND MODELLING OF THE SOVIET
SOUTHERN OCEAN KRILL FLEET
M. Mangel (Invited Expert)
- SC-CAMLR-VII/BG/13 KRILL AGGREGATION CHARACTERISTICS: SPATIAL
DISTRIBUTION PATTERNS FROM HYDROACOUSTIC
OBSERVATIONS
D.G.M. Miller and I. Hampton (South Africa)
- SC-CAMLR-VII/BG/14 SOME PECULIARITIES OF THE USSR KRILL FISHERY
AND POSSIBILITIES TO USE FISHERY STATISTICS IN
STUDIES OF KRILL BIOLOGY AND STOCKS
V.N. Dolzhenkov et al. (USSR)
- SC-CAMLR-VII/BG/15 PRELIMINARY RESULTS OF RESEARCH ACTIVITIES OF
RV *EVRIKA* IN THE SCOTIA SEA IN JANUARY–MARCH
1988
L.I. Maklygin et al. (USSR)
- SC-CAMLR-VII/BG/16 LARGE-SCALE PECULIARITIES OF PHYTOCENOSIS
SPECIES COMPOSITION IN THE SURFACE LAYER IN
THE ANTARCTIC ATLANTIC AND INDIAN OCEAN
SECTORS
R.R. Makarov and K.P. Fedorov (USSR)

SC-CAMLR-VII/BG/17	UNITED STATES SEABIRD RESEARCH UNDERTAKEN AS PART OF THE CCAMLR ECOSYSTEM MONITORING PROGRAM, 1987–1988 United States of America
SC-CAMLR-VII/BG/18	PRELIMINARY REPORT OF THE 1987–1988 NMFS ANTARCTIC MARINE LIVING RESOURCES PROGRAM MARINE MAMMAL AND BIRD FIELD RESEARCH United States of America
SC-CAMLR-VII/BG/19	PHYSICAL OCEANOGRAPHIC SETTING OF THE <i>SIEDLECKI</i> JANUARY 1987, SOUTH SHETLAND ISLAND DATA SET United States of America
SC-CAMLR-VII/BG/20	PATTERNS AND PROCESSES IN THE DISTRIBUTION AND DYNAMICS OF ANTARCTIC KRILL United States of America
SC-CAMLR-VII/BG/21	JOINT POLISH/AMERICAN HYDROACOUSTIC SURVEY OF ELEPHANT ISLAND IN THE VICINITY OF KING GEORGE ISLAND, 1988 United States of America
SC-CAMLR-VII/BG/22	STATISTICAL PROBLEMS IN KRILL STOCK HYDROACOUSTIC ASSESSMENTS United States of America
SC-CAMLR-VII/BG/23	RESULTS OF FISH STOCK ASSESSMENT SURVEY, SOUTH GEORGIA, DECEMBER 1987 – JANUARY 1988 United States of America
SC-CAMLR-VII/BG/24	SHIFTS IN THE DEMERSAL FISH COMMUNITY OF SOUTH GEORGIA United States of America
SC-CAMLR-VII/BG/25	ACOUSTIC DATA ANALYSIS AND MODELS OF KRILL SPATIAL DISTRIBUTION United States of America
SC-CAMLR-VII/BG/26	DISTRIBUTION OF PHYTOPLANKTON IN THE MIXED LAYER: IMPLICATION OF KRILL ABUNDANCE United States of America
SC-CAMLR-VII/BG/27	INTRODUCTION TO THE BIOMASS DATABASE SCAR

- SC-CAMLR-VII/BG/28 RESULTS OF AN EXPLORATORY FISHING CRUISE IN THE AREA 58.6
G. Duhamel (France)
EEC Representative
- SC-CAMLR-VII/BG/29 THE EUROPEAN *POLARSTERN* STUDY (EPOS)
J.-C. Hureau, European Science Foundation,
Member of the EPOS Management Group
- SC-CAMLR-VII/BG/30 TARGET STRENGTHS OF ANTARCTIC KRILL
(*EUPHAUSIA SUPERBA*)
I. Everson et al. (UK, Norway)
- SC-CAMLR-VII/BG/31 FORAGING ENERGETICS OF GREY HEADED
ALBATROSSES *DIOMEDEA CHRYSOSTOMA* AT BIRD
ISLAND, SOUTH GEORGIA
D.P. Costa (USA) and P.A. Prince (UK)
- SC-CAMLR-VII/BG/32 AUSTRALIAN RESEARCH ON ANTARCTIC BIRD AND
SEAL DIETS
Delegation of Australia
- SC-CAMLR-VII/BG/33 THE POPULATION OF *MIROUNGA LEONINA* AT
STRANGER POINT (25 DE MAYO – KING GEORGE I.)
Delegation of Argentina
- SC-CAMLR-VII/BG/34 ELEPHANT SEAL, *MIROUNGA LEONINA*, STOCK
IDENTIFICATION USING DNA FINGERPRINTS
Delegation of Argentina
- SC-CAMLR-VII/BG/35 IS THE UNUSUAL PRESENCE OF *CALIDRIS FUSCICOLLIS*
IN ANTARCTICA AN INDICATOR OF ENVIRONMENTAL
CHANGE?
Delegation of Argentina
- SC-CAMLR-VII/BG/36 BIBLIOGRAPHY ON ANTARCTIC SQUID
Secretariat
- SC-CAMLR-VII/BG/37 A SIMULATION STUDY OF KRILL FISHING BY AN
INDIVIDUAL JAPANESE TRAWLER
D.S. Butterworth (Invited Expert)
- SC-CAMLR-VII/BG/38 WORKSHOP ON ULTRAVIOLET RADIATION AND
BIOLOGICAL RESEARCH IN ANTARCTICA
Delegation of USA
- SC-CAMLR-VII/BG/39 BIOMASS/CCAMLR KRILL REVIEW
D.G.M. Miller and I. Hampton (South Africa)

- SC-CAMLR-VII/BG/40 HYDROACOUSTIC SURVEYS OF THE DISTRIBUTION AND ABUNDANCE OF KRILL: PRYDZ BAY REGION – FIBEX, ADBEX II AND SIBEX II
Delegation of Australia
- SC-CAMLR-VII/BG/41 REPORT OF THE WORKSHOP ON ANTARCTIC FISH AGE DETERMINATION
(Moscow, USSR, 14–19 JULY, 1986)
- SC-CAMLR-VII/BG/42 OBSERVER’S REPORT FROM THE 1988 MEETING OF THE SCIENTIFIC COMMITTEE OF THE INTERNATIONAL WHALING COMMISSION
Observer (W.K. de la Mare)
- SC-CAMLR-VII/BG/43 SELECTIVITY PARAMETERS FOR *NOTOTHENIA GIBBERIFRONS* LÖNNBERG, 1905 AND *CHAMPSOCEPHALUS GUNNARI* LÖNNBERG, 1905 OBTAINED DURING ‘8611 ANTARCTICA’ EXPEDITION
Delegation of Spain
- SC-CAMLR-VII/BG/44 BRIEF REPORT OF THE FIFTH ANTARCTIC SURVEY CRUISE OF JFA R/V *KAIYO MARU*
Delegation of Japan
- SC-CAMLR-VII/BG/45 REPORT OF THE 76TH STATUTORY MEETING OF THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES)
O.J. Østvedt (ICES)
- SC-CAMLR-VII/BG/46 ASSESSMENT OF GREEN NOTOTHENIA (*NOTOTHENIA GIBBERIFRONS*, LONNBERG 1905) STOCKS IN THE ANTARCTIC PENINSULA SUBAREA
V.A. Boronin (USSR)
- SC-CAMLR-VII/BG/47 DEVELOPMENT AND IMPLEMENTATION OF A LONG-TERM PROGRAM OF WORK
Delegation of USA
- SC-CAMLR-VII/BG/48 RESEARCH PROGRAMS OF CCAMLR MEMBERS FOR 1988/89, 1989/90 AND 1990/91 SEASONS
Secretariat

**THE EXECUTIVE SECRETARY'S REPORT OF
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**

The Committee met on 25, 28 and 31 October 1988 under the Chairmanship of Mr C.M. Bhandari (India) and considered the following items:

1. Examination of Audited Financial Statements for 1987
2. Appointment of External Auditor
3. Review of Budget for 1988
4. Draft Budget for 1989 and Forecast Budget for 1990
5. Secretariat Staffing
6. Executive Secretary's Study of Specific Expenditure Items
7. Election of Chairman and Vice-Chairman of SCAF

EXAMINATION OF AUDITED FINANCIAL STATEMENTS FOR 1987

2. The Committee had before it document CCAMLR-VII/4 'Examination of the Audited Financial Statements and Appointment of an External Auditor'.

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 1987 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.

APPOINTMENT OF AN EXTERNAL AUDITOR

6. Financial Regulation 11.1 requires that the external auditor shall be the Auditor-General or equivalent statutory authority from a Member of the Commission and shall serve for a term of two years with the possibility of re-appointment.

7. The Auditor-General for Australia has served the Commission for the past six years and has indicated that he is available for re-appointment. The Committee supported his re-appointment.

REVIEW OF BUDGET FOR 1988

8. The Administration and Finance Officer introduced document CCAMLR-VII/5, explained the likely outcome of the 1988 budget and informed the Committee that no expenditures were expected to exceed the approved appropriations. The Committee commended the Secretariat for its management of the appropriations, noting that significant savings had been achieved in some items.

9. The Secretariat informed the Committee that since the budget papers had been prepared Spain had paid outstanding contributions and that Chile had paid a small amount owing which had arisen from an error in currency conversion. The Chilean contribution is now paid in full. The Argentine representative stated that his financial authorities were taking appropriate action to pay the small amount outstanding from Argentina which was also due to currency conversion.

10. As requested at the last Meeting the Executive Secretary had provided a statement of the financial consequences of late payment of Members' contributions. It was noted that '... contributions shall be due for payment on the first day of the financial year (i.e. the due date) and shall be paid not later than 150 days after that date ...' (Financial Regulation 5.6). It was explained that the notification of the exact amount of contributions could not be sent until 1 February because of the need to receive and pay final accounts so that any surplus could be credited to members in the calculations. Although the due date for payment is 1 January this practical consideration prevents payments from being made earlier than mid-February. It was agreed that all Members should make their contributions as early as possible, and in any case before the expiry of the deadline for payment, i.e. 31 May of each year.

THE DRAFT BUDGET FOR 1989 AND THE FORECAST BUDGET FOR 1990

11. 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.

12. It was pointed out that in the amount allocated for 'Meetings', although some detailed items had increased by more than the inflation rate others had increased by less so that the overall amount was within zero real growth.

13. In response to a question concerning an allocation of A\$2 200 for publication of the Basic Documents, the Executive Secretary explained that the funds were included to meet the cost of amendments to the Conservation Measures in Force. It was agreed that in future the Conservation Measures in Force should be published in a separate document which could be revised as necessary without reprinting the Basic Documents volume.

14. The Chairman of the Scientific Committee attended the Meeting to present the proposed budget of his Committee. The expenditure proposals for the Scientific program were accepted. It was pointed out that although the Krill CPUE Workshop and the Meeting of the ad hoc Working Group on Krill were scheduled, one to follow the other, the meetings have separate objectives and the failure, for any reason, of one of them taking place should not prevent the other from going ahead.

15. Some delegations expressed concern at the large proportion of the Scientific Committee budget providing for translation of reports of working group meetings. The possibility was raised again of having reports that are not required urgently, translated in French, Spanish or Russian speaking countries. The Executive Secretary's Study of Specific Expenditure Items discusses this matter in some detail pointing to the practical difficulties involved. Several delegations agreed with these views and in particular identified the task of coordination in each country as likely to present significant problems. Recent initiatives taken by the Secretariat, aimed at improving the economy and accuracy of translation work, were explained and the Committee agreed that some time should be allowed to see if these were successful before the introduction of any further changes was contemplated. In the meantime the Secretariat was asked to continue to gather information on translation services provided from other countries. For future meetings of SCAF, the Secretariat was requested to separate the costs of translation from publication and postage costs in the presentation of the Scientific Committee's budget.

16. The Executive Secretary drew attention to the increasing workload in data handling for the various activities of the Scientific Committee and the consequent need to strengthen the Secretariat's capability in this area (see paragraph 25 below). The Committee agreed to include an amount of A\$5 000 for the Science Officer to attend two training courses in the data base software used by the Secretariat.

17. The Committee also agreed that, should the Data Manager resign before the next meeting (see paragraph 22 below), the Executive Secretary could use funds appropriated for the Data Manager's salary to engage a suitably qualified person on a temporary basis as necessary.

BUDGET RATE OF GROWTH

18. The proposed 1989 expenditure of A\$1 215 300 represents a nominal increase of 5.2% over that of the approved 1988 budget. The rate of inflation for Australia in 1989 is expected to be around 5.5%, thus the 1989 expenditure will decrease by 0.3% in real terms. If the expenditure is divided into recurrent and non-recurrent expenditure, according to the Commission's practice, recurrent expenditure in 1989 decreases in real terms by 4.5%.

MEMBERS' CONTRIBUTIONS

19. The revised draft budget for 1989 indicates that the total Member's Contribution, after deducting estimated credits, will be A\$960 258 or A\$46 414 per Member after allowing for additional contributions of A\$31 967 by harvesting nations.

FORECAST 1990 BUDGET

20. Most items in the forecast 1990 budget are calculated on the basis of the 1989 figures, allowing 5.5% for inflation in 1990. The Committee was informed that the arrangement to use the Australian Antarctic Division's central computer system had worked well during 1988 and Members again expressed their appreciation to Australia for making these facilities available. It was noted that an amount of A\$60 000 is included in the 1990 estimates as a contingency in case the increase in computer usage by the Secretariat necessitates a change to this arrangement.

SECRETARIAT STAFFING

21. The Commission in 1986 decided, '... before seeking applications for future vacancies in the professional staff, the Executive Secretary, in consultation with the Chairman of SCAF, should carefully review and, if necessary, revise the job description of the position in question and the level at which the position had originally been graded.' At the last meeting the Executive Secretary was asked to continue to consult with comparable international organisations and with the Australian Government Service with the purpose of ascertaining how best to conduct a review of the levels of the professional positions in the CCAMLR Secretariat and to report to this meeting of the Commission. The Report was distributed as CCAMLR-VII/8.

22. The intention of the present Data Manager to seek a research position resulting in the possibility that he may resign sometime in 1989 had arisen in the Budget discussions. It was agreed that in view of this new development, the review may need to be completed within the next six months in order to avoid disruption to the Scientific Committee's work through having this important position vacant for an extended period.

23. The Committee noted the possibility of assistance from the International Civil Service Commission. It agreed that the Executive Secretary should continue his consultations with his counterpart in the ICSC and, if it proved practical, use the ICSC System to review the professional positions. If there is any cost involved he should consult the Chairman of SCAF and the Chairman of the Commission before proceeding.

24. One representative reported the high level of satisfaction expressed by the Fish Stock Assessment Working Group with the work of the Secretariat, particularly the Data Manager, in preparing the data and analyses for its meeting this year. He asked whether, as a consequence of the existing incumbent's efforts, data management in the Secretariat could in future be as successfully undertaken by a person less highly qualified. If so, then the post might be down-graded.

25. The Executive Secretary thought not. He drew attention to discussions during recent sessions of the Scientific Committee meeting which clearly demonstrated that the workload in data management would continue to increase both in quantity and complexity. Up to this time the work of the Data Manager had been associated mainly with fin fish, reflecting the emphasis of the Commission and the Scientific Committee. The Committee is now extending its attention into consideration of krill and squid stocks and is moving into the data handling phase in its development of the ecosystem monitoring program. It is more likely that there will be a need to strengthen the data handling capability of the Secretariat rather than weaken it.

EXECUTIVE SECRETARY

26. At its last meeting the Commission agreed on a procedure to be followed to select a new Executive Secretary should the position become vacant. The Executive Secretary was asked to prepare a draft advertisement for consideration at this meeting. A draft was circulated for the consideration of Members. The following draft advertisement was adopted for approval by the Commission:

‘ EXECUTIVE SECRETARY OF CCAMLR

The Commission for the Conservation of Antarctic Marine Living Resources invites applications for the position of Executive Secretary (CCAMLR).

CCAMLR is an international organisation with headquarters in Hobart, Australia, responsible for giving effect to the objectives and principles of a convention which provides for the conservation, including rational use, of marine living resources in waters adjacent to Antarctica.

The Executive Secretary, assisted by a small secretariat, is responsible for providing scientific and administrative support to the Commission and Scientific Committee.

Applicants must be citizens of Member States of CCAMLR [list].

The Commission, in its selection process, shall be guided by the following criteria:

- (a) familiarity with Antarctic affairs;
- (b) experience or detailed knowledge of the operations of international, intergovernmental organisations;
- (c) demonstration of a high level of managerial experience and proven competence, in such areas as:
 - the selection and supervision of administrative, technical and scientific staff;
 - the preparation of financial budgets and the management of expenditures;
 - the organisation of meetings and provision of secretariat support for high level committees;

(d) tertiary qualifications;

(e) language qualifications.

The appointment shall be for a term of four years with the possibility of renewal. The post is graded at D1 on the UN scale. (Present salary is in the range of US\$00000 to US\$00000 pa net). Allowances are based on the UN system and include removal costs, installation grant, repatriation allowances, home leave allowance every two years, social security and children education benefits.

Applications, marked personal and confidential, should be sent to reach the following address by [date]:

The Chairman of the Commission
CCAMLR
25 Old Wharf
Hobart
Tasmania 7000 Australia

A copy of the staff regulations and further particulars can be obtained by writing to the ccamlr Secretariat at the above address.'

The SCAF noted the fact that the current term of the incumbent Executive Secretary will expire on 30 June, 1990. It was therefore felt necessary that this matter be brought to the notice of the Commission.

EXECUTIVE SECRETARY'S STUDY OF SPECIFIC EXPENDITURE ITEMS

27. At the Commission's Sixth Meeting, the Delegation of the USSR raised a number of points for examination with a view to achieving reductions in expenditure. The Executive Secretary's report on these points was circulated to members for comment in February. Four Members responded: Argentina, EEC, South Africa and the UK. A paper containing the Report and the response was distributed as (CCAMLR-VII/7).

28. Several delegations expressed their satisfaction with the analysis and the conclusions presented in the Report. The broad agreement in the responses was noted and the Chairman invited further comments on each of the points. The discussions are summarised below.

- (i) Distribution of documents – it was noted that considerable economy was being observed in new procedures for the distribution of documents. It was emphasised that greater use should be made of executive summaries and procedures should be kept under review.
- (ii) Broad application of Rule 34(b) – it was agreed that the steps taken in response to point (i) were likely to achieve the desired reduction in document handling and that it was not necessary to pursue this point any further.
- (iii) Number and duration of working group meetings – such meetings are needed to prepare advice on specific subjects. Their frequency and duration should be judged case by case, but sufficient time should always be allowed to enable the meeting to adequately deal with its subject.
- (iv) Timing and location of meetings of the Commission – the Committee agreed that it was essential for the Commission to meet annually. The need to increase international awareness of the principles of the Convention and the work of CCAMLR was recognised and it was agreed that, to hold meetings of the Commission away from Hobart periodically, could contribute to meeting this need. The convention already provides for such a possibility, if a definite proposal is received. However, it was recognised that there are practical difficulties, especially with regard to the preparatory meetings held immediately before the Commission Meeting. It was agreed to continue to hold the Commission’s meeting in Hobart for the time being.
- (v) Contracting of translation services in French, Spanish and Russian speaking countries – the Executive Secretary is to continue to gather information on this matter, but in the meantime is to proceed with plans already under way to improve the efficiency by developing a translation capability in the Secretariat (see paragraph 15 above).

29. In discussing the provision of translation services some delegations also raised questions concerning interpreting. The Executive Secretary outlined the tendering procedures followed by the Secretariat in obtaining these services and gave details of the tenders received in 1988. The Australian representative stated that he had been involved in discussions with the organisations involved and was aware of the thorough investigation that the Executive Secretary had carried out before deciding which organisation should be awarded the contract.

30. The New Zealand Delegate explained to Members that he had investigated the translation and interpreting services available in the South Pacific region for meetings of the Antarctic minerals

negotiations that New Zealand had hosted this year. He was satisfied that the contractor employed by the Commission provided the most competent and financially competitive service.

31. The Committee requested that the Executive Secretary monitor the results of actions initiated by SCAF with the object of improving efficiency, and provide regular reports to the meetings.

ELECTION OF CHAIRMAN AND VICE-CHAIRMAN OF SCAF

32. During the opening session of the Commission's Meeting when the Agenda item on Finance and Administration was passed to SCAF for discussion, the Commission had drawn attention to the need for scaf to have a position of Vice-Chairman. This would require an addition to the Committee's Terms of Reference.

**PROJECTED INCOME AND EXPENDITURE 1988,
BUDGET 1989 AND FORECAST BUDGET 1990**

**PROJECTED INCOME AND EXPENDITURE 1988, BUDGET 1989 AND FORECAST
BUDGET 1990 (Australian Dollars)**

1988 BUDGET			DRAFT BUDGET 1989 & FORECAST BUDGET 1990			
(1)	(2)	(3)			(4)	(5)
Budget Adopted 1988	Estimates Projected to 31.12.88	Variance with Budget	Item	Sub Item	1989	1990
INCOME						
877999	814757	-63242		Members' Contributions	960258	1173700
				Items from Previous Year		
48367	48367	0		• Arrears of Contributions	0	0
60000	74105	14105		• Interest	60000	60000
27834	27834	0		• Members' Contributions	0	0
0	0	0		• New Members' Contributions	27342	0
110100	108926	-1174		• Staff Assessment Levy	76200	76300
<u>30500</u>	<u>80811</u>	<u>50311</u>		• Surplus	<u>91500</u>	<u>0</u>
1154800	1154800	0		Total Income	1215300	1310000

EXPENDITURE						
DATA MANAGEMENT						
26100	26100	0		Capital Equipment	6000	60000
2100	2100	0		Consumables	4400	4600
48000	17000	31000		Contract Labour	22900	24100
10900	6500	4400		Maintenance	16400	17300
<u>3500</u>	<u>3500</u>	<u>0</u>		Time Share Usage	<u>4400</u>	<u>4600</u>
90600	55200	35400	Total Data Management		54100	110600
—	—	—	MEETINGS		—	—
288000	288000	0	Total Meetings		304100	320800
PUBLICATIONS						
—	—	—			—	—
92900	92900	0	Total Publications		87700	92300
SCIENTIFIC COMMITTEE						
—	—	—			—	—
84800	84800	0	Total Scientific Committee		109700*	63200
SECRETARIAT COSTS						
13500	13500	0		Administration	23400	24600
84700	75000	9700		Allowances	155100	185900
4000	4000	0		Automobile	4000	4200
22000	22000	0		Communication	23100	24400
3000	3000	0		Incidentals	3100	3200
3000	3000	0		Library	3100	3200
19400	19400	0		Office Requisites	21900	23000
6300	6300	0		Premises	7200	7500
422600	376200	46400		Salaries	397600	424800
<u>20000</u>	<u>20000</u>	<u>0</u>		Travel	<u>21200</u>	<u>22300</u>
598500	542400	56100	Total Secretariat Costs		659700	723100
1154800	1063300	91500	Total Expenditure		1215300	1310000

* In addition to this amount a sum of \$A25100 has been authorised to be drawn from the Norwegian Contribution Special Fund to meet the total Scientific Committee Program of \$A134800.

REGISTRATION OF LAND-BASED CEMP SITES

REGISTRATION OF LAND-BASED CEMP SITES*

All land-based sites where CEMP studies are under way or planned should be described and registered as CEMP sites. The following procedure should be used to propose, register and manage activities in sites:

- (i) Proposals for the registration of CEMP sites together with draft management plans for those sites shall be submitted to the Working Group for CEMP for initial consideration by the Contracting Party(ies) whose nationals are conducting or planning to conduct CEMP studies at the site;
- (ii) The Working Group will review the proposals and draft management plans with respect to the goals and objectives of the CEMP and provide its recommendations for adoption, revision, deferral, or refusal to the Scientific Committee for consideration;
- (iii) The Scientific Committee shall review the proposals, taking into account the recommendations of the Working Group for CEMP, and advise the Commission as to the proposals and management plans that should be adopted, revised, deferred, or refused;
- (iv) The Commission shall designate CEMP monitoring sites and adopt management plans for such sites, taking into account advice provided by the Scientific Committee and the results of consultations with other components of the Antarctic Treaty system as described in sub-paragraph (v) below:
- (v) Before acting to register proposed CEMP sites, the Commission shall consult and cooperate with the Antarctic Treaty Consultative Parties and, when appropriate, the Contracting Parties to the Convention for the Conservation of Antarctic Seals, and the Convention on the Regulation of Antarctic Mineral Resource Activities. The purpose of such consultation and cooperation shall be to ensure the achievement of the objective for which the site has been proposed and avoiding interference with the achievement of the objectives and principles of the Antarctic Treaty, the Convention on the Conservation of Antarctic Seals, and the Convention on the Regulation of Antarctic Mineral Resource Activities, or inconsistency between the relevant measures in effect pursuant to those instruments and the objectives for which the site has been proposed;

- (vi) Pending conclusion of the process of consultation and cooperation provided for in the previous sub-paragraph, the Commission may, by Resolution, adopt proposed management plans and designate proposed sites on a provisional basis;
- (vii) All CEMP sites and their approved management plans shall be listed in the annex to the Conservation Measure (to be adopted) regarding registration of the CEMP sites;
- (viii) Each Contracting Party shall develop a system for issuing permits authorising its nationals to carry out CEMP studies and other activities consistent with the provisions of the approved management plan in registered sites and shall take such other measures as may be necessary to insure that its nationals comply with approved management plans for such sites; and
- (ix) Copies of such permits shall be sent to the Executive Secretary as soon as practicable after they are issued. Each year the Executive Secretary shall provide the Commission and Scientific Committee a brief description of the permits that have been issued by the Parties. In cases where permits are issued for purposes not directly related to the conduct of the CEMP Study that the site registration is intended to protect, the Executive Secretary shall forward a copy of the permit to the Member(s) of the Scientific Committee that originally proposed registration of the site.

Following listing, Antarctic Treaty Consultative Parties, SCAR, the International Whaling Commission, and other international bodies responsible for activities in the Antarctic should be advised of the listing. Management plans and the results of monitoring studies carried out in registered sites should be reviewed periodically (e.g., at five year intervals) by the Working Group for CEMP and the Scientific Committee to determine whether the study objectives have been or are being met. The Commission should be notified and should act to terminate site registration when the monitoring program is terminated or when special regulation of activities in or near the site no longer is necessary to avoid impacting ongoing or planned research. Management Plans for listed sites should be updated as necessary.

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

THE REPORT OF THE STANDING COMMITTEE ON OBSERVATION AND INSPECTION

In accordance with the recommendation of the Sixth Meeting of the Commission (paragraph 99), the Commission established a Standing Committee on Observation and Inspection. It met under the Chairmanship of the United States (Mr R. Arnaudo).

Observation and Inspection

2. The Committee, taking into account paragraphs 94 to 98 of the Report of the Sixth Meeting of the Commission, elaborated on these paragraphs and recommended that the Commission adopt the following provisions pursuant to Article XXIV of the Convention to verify compliance with measures in effect under the Convention:

3. Observation and Inspection System

I. Each Member of the Commission may designate observers and inspectors referred to in Article XXIV of the Convention.

- (a) Designated observers and inspectors shall be familiar with the fishing and scientific research activities to be observed and inspected and the provisions of the Convention and measures adopted under it.
- (b) Members shall certify the qualifications of each observer and inspector they designate.
- (c) Observers and inspectors shall be nationals of the Contracting Party which designates them and, while carrying out observation and inspection activities, shall be subject solely to the jurisdiction of that Contracting Party.
- (d) Observers and inspectors shall be able to communicate in the language of the Flag State of the vessels on which they carry out their activities.
- (e) Observers and inspectors shall be accorded the status of ship's officer while on board such vessels.

- (f) Names of designated observers and inspectors shall be communicated to the Commission by 1 May each year. Designations shall remain valid until July 1 of the following year.
- II. The Commission shall maintain a register of certified observers and inspectors designated by Members.
- (a) The Commission shall communicate the register of observers and inspectors to each Contracting Party by 31 May each year.
- III. In order to verify compliance with measures adopted under the Convention, observers and inspectors designated by Members shall be entitled to carry out observation and inspection activities on board vessels engaged in scientific research or harvesting of marine living resources in the area to which the Convention applies.
- (a) Observation and inspection may be carried out by designated observers and inspectors from vessels of the designating states.
- (b) Ships carrying observers or inspectors shall carry a special flag or pennant approved by the Commission to indicate that the observers or inspectors on board are carrying out observation and inspection duties in accordance with this system.
- (c) Such observers and inspectors may also be placed on board vessels, with the schedule of embarkation and disembarkation of observers and inspectors subject to arrangements to be concluded between the designating State and the Flag State.
- IV. Each Contracting Party shall provide to the Commission by 1 May each year a list of all of its flag vessels intending to harvest marine living resources in the Convention Area during the year beginning 1 July. Such list shall include:
- name of vessel;
 - call sign of the vessel registered by appropriate authorities of the flag state;
 - home port and nationality of vessel;

- owner or charterer of vessel;
 - notification that the master of the vessel has been informed of the measures in force for the area or areas where the vessel will be harvesting marine living resources in the Convention Area.
- (a) The Commission shall communicate to all Parties by 31 May each year a consolidated list of all such vessels. The list shall also include the names of research vessels contained in the Register of Permanent Research Vessels compiled in accordance with paragraph 60 of the Report of the Fifth Meeting of the Commission.
 - (b) Each Contracting Party shall also notify the Commission as soon as possible of any of its flag vessels added to or deleted from the list during an ongoing fishing season. The Commission shall promptly communicate this information to the other Contracting Parties.

V.

- (a) Any vessel present in the Convention Area for the purpose of harvesting or conducting scientific research on marine living resources shall, when given the appropriate signal in the International Code of Signals by a ship carrying an observer or inspector (as signified by flying the flag or pennant referred above), stop or take such other actions as necessary to facilitate the safe and prompt transfer of the observer or inspector to the vessel, unless the vessel is actively engaged in harvesting operations, in which case it shall do so as soon as practicable.
- (b) The master of the vessel shall permit the observer or inspector, who may be accompanied by appropriate assistants, to board the vessel.

VI. Observers and inspectors shall have the authority to observe and inspect catch, nets and other fishing gear as well as harvesting and scientific research activities, and shall have access to records and reports of catch and location data insofar as necessary to carry out their functions.

- (a) Each observer and inspector shall carry an identity document issued by the designating State in a form approved or provided by the Commission stating that the observer or inspector has been designated to carry out observation and inspection in accordance with this system.

- (b) On boarding a vessel, an observer or inspector shall present the document described in VI (a) above.
- (c) The observation and inspection shall be carried out so that the vessel is subject to the minimum interference and inconvenience. Inquiries shall be limited to the ascertainment of facts in relation to compliance with the Commission measures in effect for the Flag State concerned.
- (d) Observers and inspectors may take photographs as necessary to document any alleged violation of Commission measures in effect. Duplicate photographs shall be taken, one of which shall be attached to the notice of alleged violations provided to the vessel master in accordance with paragraph VIII below.
- (e) Observers and inspectors shall affix an identification mark approved by the Commission to any net or other fishing gear which appears to have been used in contravention to conservation measures in effect and shall record this fact in the reports and notification referenced in paragraph VIII below.
- (f) Observers and inspectors shall be provided appropriate assistance by the master of the vessel in carrying out their duties, including access as necessary to communications equipment.

VII. If a vessel refuses to stop or otherwise facilitate transfer of an observer or inspector, or if the master or crew of a vessel interferes with the authorised activities of an observer or inspector, the observer or inspector involved shall prepare a detailed report, including a full description of all the circumstances and provide the report to the designating State to be transmitted in accordance with the relevant provisions of paragraphs VIII and IX.

- (a) Interference with an observer or inspector or failure to comply with reasonable requests made by an observer or inspector in the performance of his duties shall be treated by the Flag State as if the observer or inspector were an observer or inspector of that State.
- (b) The Flag State shall report on actions taken under this paragraph in accordance with paragraph X below.

VIII. Observers and inspectors shall prepare detailed reports on their observation and inspection activities. These reports shall be provided to the designating Member which shall in turn report to the Commission.

(a) Before leaving vessels that have been observed and inspected, the observer or inspector shall give the master of the vessel a Certification of Inspection and a written notification of any alleged violations of Commission measures in effect and shall afford the master opportunity to comment in writing on any such notification;

(b) The ship's master shall sign the notification to acknowledge receipt and the opportunity to comment on it.

IX. Reports referred to in paragraph VIII shall be provided to the Flag State and the Flag State shall be afforded the opportunity to comment on them prior to their consideration by the Commission.

X. If, as a result of observation and inspection activities carried out in accordance with these provisions, there is evidence of violation of measures adopted under the Convention, the Flag State shall take steps to prosecute and, if necessary, impose sanctions. The Flag State shall report any such prosecutions and sanctions to the Commission.

4. The Committee noted that failure to comply with conservation measures adopted under the Convention might also be observed by scientists, fishermen and others who have not been designated observers or inspectors in accordance with the system of observation and inspection described above. Such observations could raise matters pertaining to Article X as well as Article XXIV of the Convention. It was therefore agreed that Contracting Parties should be requested to transmit information concerning such observations to the Commission for consideration.

5. The Committee recalled, as had been pointed out in paragraph 98 of the Report of the Sixth Meeting of the Commission, that the terms 'inspector' and 'observer' are used interchangeably in Article XXIV of the Convention. In this context, the Committee also recalled, as has been noted earlier, that the purpose of the system of observation and inspection elaborated in paragraph 3 above is to verify compliance with measures adopted under the Convention. In future discussions, it was agreed that the distinction, if any, between the terms 'observer' and 'inspector' should be clarified.

6. Several delegations noted that steps should be taken at the next meeting of this Committee to begin elaborating a system of scientific observation to facilitate acquisition of information needed to better understand and to more effectively model and manage harvesting of marine living resources in the Convention Area.

7. With regard to the previous point, the Japanese delegation expressed the view that inspectors designated for the purpose of compliance monitoring should be suitably qualified fishery control or law enforcement agents of the designating party and that scientific observation should be carried out by scientific personnel on board research vessels. Other delegations took the view that it would be inappropriate both to require that compliance monitoring be done exclusively by fishery control or law enforcement agents and that scientific observation should be carried out only on board scientific research vessels. These delegations expressed the view that it should be the right of the designating party to designate any person familiar with the harvesting or scientific research activities to be observed and inspected, in accordance with paragraph I (b) of the system, and that effective implementation of the Convention may well require placement of scientific observers on harvesting as well as research vessels.

8. The delegation from Japan also noted that the term ‘assistant’ in paragraph V (b) of the system presumably refers to interpreters and witnesses which accompany designated observers and inspectors and that the size of such ‘inspection teams’ could pose a burden to the boarded vessel. It was agreed that the need to define this term should be reviewed at a future meeting of this Committee.

9. Lastly, the delegation from Japan expressed the need for the observer or inspector, when requesting access to communications equipment as necessary to carry out observation and inspection duties as provided under paragraph VI (f) of the system, to appreciate the need for sensitivity with regard to the location of the vessel and the proprietary nature of this information.

10. The delegation from Poland noted that it might be difficult for Contracting Parties to provide a complete and accurate list of all of its flag vessels intending to harvest marine living resources in the Convention Area during the year by 1 May, as required by paragraph 4 of the system, although information could be provided on the number of vessels and the statistical area(s) where they intend to fish. The Committee agreed that under the provisions of paragraph IV of the system, Contracting Parties could notify the Commission of additions or deletions to the list during an ongoing fishing season.

11. In further discussion of paragraph IV of the system, the delegation of the Federal Republic of Germany noted that it would be desirable for vessels intending to engage in harvesting of marine

living resources in the Convention Area to notify the Commission of their dates of arrival in and departure from the Convention Area, and to specify the statistical area(s) in which they plan to conduct and have conducted these harvesting activities.

12. It was agreed that with regard to paragraph VII (a) of the system, it would be useful if Contracting Parties would provide the Commission with applicable domestic laws and regulations governing the performance and requirements of their observers and inspectors.

Costs

13. The Committee discussed the question of costs in carrying out observation and inspection activities, drawing upon paragraphs 100 to 103 of the Report of the Sixth Meeting. Several delegations re-emphasised that the full cost of carrying out the resulting observation and inspection activities should be covered by the designating states, in accordance with certain existing international fisheries agreements. There was general agreement that in the initial stages of implementing this system of observation and inspection, costs of providing for observers and inspectors were likely to be borne by designating states. However, several delegations noted the possible need to consider alternative means of cost-sharing in the future to ensure adequate and representative coverage of all harvesting in the Convention Area as the system evolves. It was noted that the question of costs needed further study.

14. There was a brief discussion of liability for injury, death and compensation for unanticipated economic loss in connection with observation and inspection. Due to lack of time, the Committee did not enter into an in-depth consideration of the matter. It was noted, however, that in the absence of specific arrangements, the matter would need to be dealt with in accordance with existing international practice. It was further noted that in the case of observers and inspectors placed on board vessels for longer periods of time, this matter could be arranged between the designating state and the Flag State of the vessel.

Future Steps

15. Since the provisions of the system of observation and inspection elaborated in paragraph 3 above could be implemented as early as the 1989/90 fishing season, the Committee recommends that the Executive Secretary be asked to review existing international systems of observation and inspection and, based upon this review, prepare and distribute the following to Contracting Parties in advance of the Eighth Meeting of the Commission:

- a proposed design for a flag or pennant to be flown by vessels to indicate that they are carrying observers or inspectors designated by Contracting Parties pursuant to paragraph III (b) above;
- a draft of the Certificate of Inspection and identity documents, and a proposed mark for identifying fishing gear, as provided for in paragraph VI of the system;
- a list of the Commission measures currently in effect;
- a list of observers and inspectors that have been designated by Parties pursuant to paragraph I (f) of the system;
- a list of the vessels which Contracting Parties, in respect to paragraph IV of the system, have advised the Commission are intending to harvest marine living resources in the Convention Area during the 1989/90 season; and
- a description of costs and funding of other international fishery inspection schemes.

16. Recognising that it would be desirable to work towards the standardisation of reporting by observers and inspectors, the Committee also recommends that the Executive Secretary be asked to prepare and distribute in advance of the next Commission meeting, taking into account existing international practice, drafts of:

- (i) a check list that could be used by observers and inspectors to facilitate compliance monitoring;
- (ii) a format for reporting the results of observation and inspection for compliance monitoring;
- (iii) a dictionary of questions and terms, in the languages of Contracting Parties conducting harvesting activities, to assist observers and inspectors in carrying out their duties; and
- (iv) such other information as may be deemed necessary or useful.

Compliance With Conservation Measures in Force Under Article X

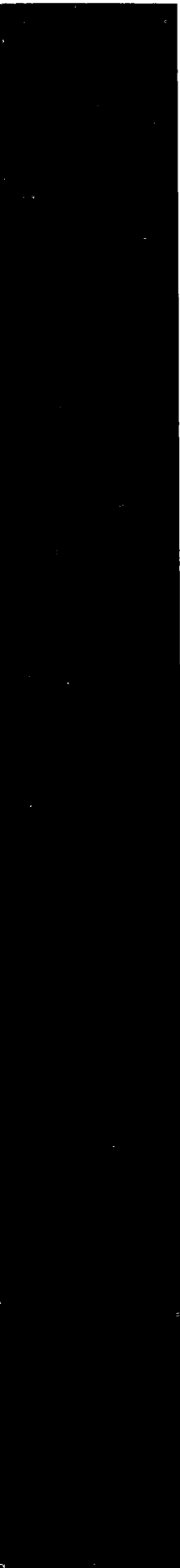
17. The delegation of the United Kingdom pointed out that in so far as paragraph 104 of the Report of the Sixth Meeting of the Commission referred to Article X (2) of the Convention, the provisions of that paragraph of the Report ought to be included in the System of Observation and Inspection. Since there was not time to consider this question in detail, it was agreed to defer it for consideration at the next meeting of the Commission. The Committee confirmed its understanding that, pending the outcome of such consideration, the provisions of paragraph 104 will continue to apply.

18. The delegation of the United Kingdom also brought to the attention of the Standing Committee, its report on activities covered by Article X, distributed to Contracting Parties as CCAMLR-VII/BG/8.

ADDENDUM TO THE
REPORT OF THE SEVENTH MEETING OF THE COMMISSION
(CCAMLR-VII)

REPORT OF THE MEETING OF THE WORKING GROUP
FOR THE DEVELOPMENT OF A CONSERVATION STRATEGY
FOR ANTARCTIC MARINE LIVING RESOURCES

Hobart, Australia
23 and 28 October 1988



REPORT OF THE MEETING OF THE WORKING GROUP
FOR THE DEVELOPMENT OF A CONSERVATION STRATEGY
FOR ANTARCTIC MARINE LIVING RESOURCES

The Working Group for the Development of a Conservation Strategy for Antarctic Marine Living Resources (WGDCS), chaired by Australia, met on 23 and 28 October. The Report of the Sixth Annual Meeting of the Commission lists the following terms of reference for the Working Group (paragraph 107) :

1. To develop a common understanding as to the management implications of Article II of the Convention;
2. To develop possible conservation approaches for achieving the objectives of Article II by means contained in Article IX;
3. To select and apply performance criteria for assessing each approach;
4. To identify, for preferred approaches, specific short and long term goals consistent with the objectives of the Convention;
5. To formulate the framework of a strategy for managing activities in order to achieve these goals;
6. To report to the Commission recommending appropriate action.

These are working terms of reference and may be altered as the Group progresses."

2. The Group considered the report submitted by a Sub-Group of Technical Experts which met on 20-22 October to formulate advice to the Group on the specification of performance criteria for the evaluation of

conservation strategies and related matters (third term of reference). The Convener of the Technical Sub-Group, Dr G. Kirkwood (Australia) presented the Sub-Group's Report. The Working Group welcomed the report as a useful contribution to its work.

3. In discussion of the Technical Sub-Group's Report and last year's consideration of this item, it was noted that the Commission may wish to accord status to paragraphs 114 and 115 of the 1987 Report, subject to refinement as approaches to conservation are developed. In this regard, the Working Group noted the Technical Sub-Group's view that the primary objective of rational use entails harvesting in a manner which ensures that the potential for achieving the highest possible long term yield is preserved, subject to the agreed general principles of conservation.

4. The Working Group agreed, with regard to paragraph 13 of the Technical Sub-Group's Report that :

(a) The implementation of Article II 3(b) would be assisted by an operational definition for depletion and for target levels of recovery of depleted populations. In this regard, the Working Group believed that advice from the Scientific Committee on these matters, which would include consideration of the likely range for the level of greatest net annual increment for various major groups of species, would be useful.

(b) It would be useful to have the advice of the Scientific Committee on the ability of the ecosystem monitoring program to detect changes in relationships and also to recognise the effects of simple dependencies between species, including distinguishing between natural fluctuations and those induced by fisheries.

5. The Working Group agreed that it was not practical to assess alternative conservation approaches by using field trials because of the risk of failure to meet the objectives of the Convention, and that

modelling will be the most effective way to proceed. It was understood that during the process of evaluating approaches, the development of objectives and performance criteria would continue to evolve.

6. It was recognised that conservation approaches had to consider both short and long time scales. It was noted that, in the short term, the Commission has begun to develop conservation approaches for the management of finfish stocks, with emphasis on those already subject to heavy exploitation; that the framework for assessing the effectiveness of these single species strategies is relatively straightforward; and that such matters are already being addressed by the Fish Stock Assessment Working Group.

7. In an ecosystem context, any approach to conservation needs to take into account the effects of fishing on not only the target species, but also dependent and related species. This makes the development and assessment of its effectiveness more complex. The Group agreed that while there is a need to begin development of appropriate approaches to the conservation of ecosystems, the priority for completing this task is lower than that for the finfish stocks.

8. In this context it was agreed that the Antarctic should not be thought of as a single ecosystem, rather it comprises a number of different subsystems. These are subject to widely differing levels of exploitation. This means that while the effects of fisheries have to be considered within the local subsystem in which they take place, there is a need to consider their potential effects within related sub-systems.

9. The Working Group discussed the value of obtaining an understanding of the fishing plans of member nations, as outlined in paragraph 28 of the Technical Sub-group's report. Representatives of Japan and the USSR expressed their difficulty in this regard due to some factors which affect long-term plans for harvesting activities. For example, the rate of expansion of Japanese fisheries can be governed by market conditions and the activities of individual fishing companies. In the case of the USSR fishery, even within a season, decisions are made to switch between finfish

and krill depending on the fishing conditions within the area. Despite these uncertainties, information of the kind provided is of considerable value in developing, inter alia, predictive rather than reactive approaches to the conservation of krill.

10. The Working Group felt that any additional information concerning plans for fishery development, however uncertain, would be valuable. Furthermore, descriptions of the operational tactics applied to fishing activities would be important in the development and evaluation of conservation approaches. For example, detailed information on the day to day operations of krill trawlers has been found useful in modelling work to evaluate the potential role of catch and effort data in monitoring changes in abundance of krill.

11. There was agreement that work should continue to develop models for the evaluation of conservation approaches (both single and multi-species). This needs to be carried out by Members and by the various working groups of the Scientific Committee. At the same time, it was noted that the priority for this kind of work should be determined in relation to other important tasks such as determining the stock abundance and stock structures for key species in the ecosystem.

12. In reviewing the direction of its work, the Working Group emphasised that full account should be taken of, and duplication avoided with, other work being carried out in the Scientific Committee. It was agreed that the Working Group had an important and continuing role in the development of practical conservation approaches, in accordance with its terms of reference.

13. The Report of the Technical Sub-Group is attached.

REPORT OF THE MEETING OF THE TECHNICAL SUB-GROUP
OF THE CCAMLR WORKING GROUP FOR THE DEVELOPMENT
OF A CONSERVATION STRATEGY

(Hobart, Australia, 20-22 October 1988)

The Meeting was held in the CCAMLR Secretariat on 20-22 October, 1988. A list of participants is attached at Appendix 1.

2. Dr Geoff Kirkwood was elected Convener of the Sub-group, and it was agreed that the rapporteurs duties would be assumed by members of the Australian delegation at the meeting.

3. The Convener expressed his understanding that the development of performance criteria involved developing a methodological framework for evaluation of potential conservation approaches. The Group accepted this definition of their task and adopted the agenda attached at Appendix 2.

4. Papers were submitted by technical experts from several CCAMLR Members for the Group's consideration (see list of documents at Appendix 3). It was agreed that these should be used to assist the Group through reference to them where they were relevant to the issues raised rather than considering them individually.

THE DEVELOPMENT OF A METHODOLOGICAL FRAMEWORK FOR EVALUATION
OF POTENTIAL CONSERVATION APPROACHES

5. The Group accepted, as a working definition, that a conservation strategy incorporates procedures under which conservation measures (for example, catch limits, open and closed seasons) are established, removed or varied. It involves using the information available to assess the state of the resources, from which decisions are made as to what changes in conservation measures are necessary.

6. It was pointed out that the Antarctic should not be thought of as a single ecosystem; rather it comprises a number of different sub-systems. These are subject to widely differing levels of exploitation. This means that the potential effects of fisheries have to be considered in both local and broad geographical scales.

7. It was recognised that a methodological framework had to consider both short and long time-scales. In the short term, the Commission has begun to develop conservation strategies for the management of finfish stocks, with emphasis on those already subject to heavy exploitation. The framework for assessing the effectiveness of these single species strategies is relatively straightforward. Such matters are already being addressed by the Fish Stock Assessment Working Group.

8. In an ecosystem context, a strategy has to take into account the effects of fishing on not only the target species, but also dependent and related species. This makes its assessment more complex. The Group agreed that while there is a need to begin development of appropriate strategies for conserving ecosystems, the priority for completing this task is lower than that for the finfish stocks.

Information Requirements for Specification of Conservation Strategies, Including Data Inputs and Monitoring

9. The specification of a conservation strategy involves the identification of operational objectives, data inputs and monitoring, assessment procedures and decision rules. For evaluation of a strategy, the decision rules need to be specified in terms of the information inputs and the range of decisions that are possible.

Preliminary Objectives

10. At its 1987 Meeting, the Working Group for the Development of a Conservation Strategy for Antarctic Marine Living Resources had developed a

set of principles of conservation based on Article II of the Convention, and an interpretation of the term "rational use" (CCAMLR-VI, paragraphs 114-115). These were :

"114. The Group noted that, under Article II, the term "conservation" includes rational use. Harvesting and associated activities are to be conducted in accordance with the following principles of conservation :

- (i) maintenance of ecological relationships;
- (ii) maintenance of populations at levels close to those which ensure the greatest net annual increment;
- (iii) restoration of depleted populations;
- (iv) minimisation of the risk of irreversibile change in the marine ecosystem.

115. With these principles in mind, the Working Group felt that rational use involved inter alia the following elements :

- (i) that the harvesting of resources is on a sustainable basis;
- (ii) that harvesting on a sustainable basis means that harvesting activities are so conducted as to ensure that the highest possible long-term yield can be taken from a resource, subject to the general principles of conservation above;
- (iii) that the cost effectiveness of harvesting activities and their management is given due weight."

11. The Group agreed to adopt as a set of preliminary objectives these general principles of conservation and elements of "rational use". It

agreed that they were sufficient for the purpose of evaluating potential conservation strategies.

12. The Group noted that it was not possible to simultaneously satisfy each of the preliminary objectives. Conservation strategies must inevitably involve compromises between the objectives, and an important part of any examination of differing strategies would be a comparison of the extent to which they met the different objectives.

13. The Group then addressed the interpretation of these preliminary objectives in terms which admit assessment of the degree to which they are able to be met.

(i) Maintenance of ecological relationships

The Group agreed that it was difficult to see how to evaluate the extent to which this objective could be met because of the sheer number of species and interrelationships which might be monitored. It is only practical to monitor a small number of these. This matter has been considered by the Working Group for the CCAMLR Ecosystem Monitoring Program and they have drawn up a program for monitoring selected predators which, at this stage, is as comprehensive as practicable. There are plans for the monitoring of prey species and environmental parameters. There remains a need to examine the power of this monitoring program to detect changes in relationships and to recognise the effects of even simple inter-specific dependencies.

The question was raised as to the number of species which would need to be monitored to be reasonably certain that important ecological relationships were being maintained. While it was felt that this required further investigation it was suggested that the largest and smallest species in major groups should be considered.

- (ii) Maintenance of populations at levels close to those which ensure greatest net annual increment (GNAI)

There is a paradox in this objective in that the level of GNAI for a dependent species changes with the level of exploitation of prey species. This has been resolved by interpreting the predator population levels referred to as those which would exist if there were no exploitation of prey. In practical terms these levels can be best assessed from historical levels of abundance.

It was generally accepted that if this objective is achieved then objective (i) would also probably be achieved as a consequence.

The Group agreed that, in general, it is not possible to accurately predict the population level at which GNAI would be obtained, therefore arbitrary working values will need to be chosen for various types of species.

The Group agreed that there was a problem in separating what may be natural fluctuations in dependent populations from changes induced by fishing on their prey. This needs to be addressed.

- (iii) Restoration of depleted populations

The Group identified a number of considerations to be examined in relation to this objective. These were :

- (a) the need for an operational definition of depletion and of a target level for recovery;
- (b) the likely time-scale of the recovery;
- (c) the compromise between the rate of recovery of a stock and the effects of any fishing activities permitted during the recovery period;

- (d) the possibility that reducing the abundance of competitors or predators might assist in the recovery of depleted populations.

Assessing the achievement of this objective depends upon some form of monitoring of trends in the abundance of depleted species. It was suggested that in certain instances some level of fishery could assist in monitoring the recovery of a depleted stock.

- (iv) Minimisation of risk of irreversible change in the marine ecosystem

In the Convention, this principle is stated as "the prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades". This suggests that the minimum levels of abundance for various species need to be tied to their dynamics. For example, slow growing populations will take the specified time to recover from levels which are not far below the target levels, while fast growing populations may recover from levels well below target levels over that time. However, in many circumstances, it will be difficult to predict that a population could recover from a given level in the required time.

Elements of "Rational Use"

14. The primary objective involving rational use is that of harvesting to ensure that the potential for achieving the highest possible long-term yield is preserved, subject to the above principles of conservation. The Group agreed that assessing the extent to which this objective was met by a proposed conservation strategy was straightforward.

15. With respect to the issue of cost-effectiveness, it was agreed that it was not appropriate to consider the economics of individual fishing

operations. However, the costs of management and monitoring, including those related to observation and inspection, must be taken into account in any evaluation of a conservation strategy.

Evaluating Performance of Conservation
Strategies in Meeting Objectives

16. The Group considered that it was not practical to evaluate conservation strategies by applying them in the field because of the risk of failure to meet the objective should they prove inadequate. The time-scale involved could be long and the cost prohibitive. It was therefore agreed that a modelling approach to evaluation will be the most effective.

17. Models appropriate for evaluating conservation strategies for single species fisheries not involving substantial levels of ecological interactions (as currently being applied to finfish fisheries in the CCAMLR Area) are already in wide use in fisheries science.

18. The types of model required to evaluate conservation strategies for the management of fisheries involving substantial levels of interactions (e.g. krill) are more complex, because of the need to consider dependent and related species from an ecosystem perspective.

19. In any evaluation sub-models are needed to describe :

- the dynamics of the ecosystem or the species;
- the management procedure;
- the fishery; and
- the monitoring process and its results.

20. Most of the discussion focussed on the sub-model dealing with the dynamics of the ecosystem or the species. It was agreed that initial testing on simple models would define the range of potential strategies suitable for further development. These models can then be made more

complex to give more rigorous evaluation. The aim would be to use a diverse range of models to try to develop conservation strategies which are robust, in the sense that they would still meet their objectives when applied to model ecosystems that are radically different. As it will not be known which model best captures the dynamic features of real ecosystems or populations, potential strategies should be tested in as many hypothetical situations as possible.

21. The Group therefore decided that it is now appropriate to continue to develop specific models for use in the evaluation of potential conservation strategies.

22. For performance criteria, two papers presented to the meeting (WG-CSD-88/6 and 8) contained suggestions suitable for application to evaluations aimed at refining the range of potential conservation strategies. The Group recognised that performance criteria would need to evolve in step with both the conservation strategies and the complexity of the hypothetical ecosystems to be managed.

Protocols for Conducting Evaluations

23. A protocol is a uniform set of evaluation procedures which allow the performance of different potential conservation strategies to be compared. It was agreed that protocols which might be employed in this process should now be developed. Further work by individual members is required in order to develop protocols for consideration by a technical group at a further meeting.

EXAMPLES OF PERFORMANCE CRITERIA AND EVALUATIONS

24. Paper WG-CSD-88/8 included examples in which a simple predator-prey system is simulated, with exploitation occurring only on the prey. Catch limits are set according to two different conservation strategies. One strategy uses a standard Schaeffer model to obtain annual estimates of MSY

from CPUE data and harvested at 90% of the estimated MSY. The second strategy uses a simple feedback procedure to adjust catches up or down depending on whether the prey abundance is estimated to be above or below a target level (55% of unexploited). On face value, any differences in the results of applying the two strategies should be slight.

25. In WG-CSD-88/8, a number of performance criteria were defined which relate to the objectives of management identified by the Working Group. Three examples of these objectives and the corresponding performance criteria are :

(a) Maintenance of ecological relationships :

Probability of the predator population being reduced to less than 30% of its initial abundance.

(b) Maintaining highest long-term yield :

Cumulative catch over 70 years.

(c) Risk of irreversible change :

Probability of the prey population being reduced to levels from which recovery to the target level takes more than 30 years.

26. Applying the conservation strategy to the simulated predatory-prey system led to the following estimates of performance criteria under the two strategies :

Performance criterion	Strategy 1	Strategy 2
(a)	0.94	0.33
(b)	1.14	4.51
(c)	0.93	0.08

27. Despite expectations, the two strategies differ considerably in their ability to achieve the three objectives illustrated. Strategy 1 is markedly inferior in all three criteria, and would be rejected as a conservation strategy in this example.

OTHER MATTERS

28. The Group recognised the importance of obtaining an understanding of the plans of member nations for the development of krill fisheries, and similar information on squid and finfish fisheries would be useful. This information would help identify types of conservation strategy that are broadly consistent with the planned exploitation of the resource. Also, slight differences in the way in which development plans are implemented can sometimes provide substantially different opportunities to learn about the resource dynamics (e.g. the interactions between prey and dependent species and the separation of natural from fishery-induced fluctuations in abundance). Early notification of fishery development plans would allow examination of these opportunities.

CONCLUDING REMARKS

29. The Group recognised that further work is needed to develop models and protocols for the evaluation of potential conservation strategies. It noted that some related work useful for the examination of methodology and elements of conservation strategies has been and will be carried out under the auspices of the Scientific Committee.

30. The Group noted that some of the papers that it had received were pertinent to the development of conservation strategies. These might be considered by the Working Group.

LIST OF PARTICIPANTS

Technical Sub-Group of the CCAMLR Working Group
for the Development of a Conservation Strategy
(Hobart, Australia, 20-22 October, 1988)

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Dr E. SABOURENKOV (Secretariat)

AGENDA

Technical Sub-Group of the CCAMLR Working Group
for the Development of a Conservation Strategy
(Hobart, Australia, 20-22 October, 1988)

1. Discussion of Methodological Framework for Evaluation of Potential Conservation Approaches
 - 1.1 Preliminary Objectives
 - 1.2 Performance Criteria
 - 1.3 Data Inputs - Harvesting
 - Scientific Monitoring
2. Examples of Performance Criteria and Evaluations
3. Report to the Working Group

LIST OF DOCUMENTS

Technical Sub-Group of the CCAMLR Working Group
for the Development of a Conservation Strategy
(Hobart, Australia, 20-22 October, 1988)

Meeting Documents

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| WG-CSD-88/1 | Provisional Agenda for the Meeting of the Conservation Strategy Working Group |
| WG-CSD-88/2 | Provisional Agenda for the Meeting of the Technical Sub-Group
(Convener) |
| WG-CSD-88/3 | List of Participants
(Secretariat) |
| WG-CSD-88/4 | List of Documents
(Secretariat) |
| WG-CSD-88/5 | The Selection of Performance Criteria in the Evaluation of Conservation Strategies
(Convener) |
| WG-CSD-88/6 | Performance Criteria for the Evaluation of Conservation Strategies
(Delegation of Argentina) |
| WG-CSD-88/7 | EEC Background Paper on Conservation Strategy
(Delegation of the EEC) |
| WG-CSD-88/8 | Preliminary Consideration of Performance Criteria for the Evaluation of Conservation Strategies
(Australia) |
| WG-CSD-88/9 | Towards a Conservation Strategy for Antarctic Marine Living Resources
(Delegation of USSR) |
| WG-CSD-88/10 | Modelling and Decision Making as Part of the CCAMLR Management Regime |
| WG-CSD-88/11 | Objectives of Ecosystem Monitoring |

WG-CSD-88/12

Report of the Meeting of the Technical Sub-Group of the
CCAMLR Working Group for the Development of a
Conservation Strategy (Hobart, Australia, 20-22 October,
1988)

Other Papers Referred to at the Meeting :

CEMP Standard Methods for Monitoring Parameters of
Predatory Species, 1988