#### REPORT OF THE SCIENTIFIC COMMITTEE

4.1 The Chairman of the Scientific Committee, Mr O. Østvedt (Norway), introduced the report of the Scientific Committee. A large part of the work of the Scientific Committee and its Working Groups had been directed at answering specific questions directed to it by the Commission and assessing the status of finfish stocks in the Convention Area. The Commission noted that for the first time data and methods were available for an initial analysis of indicators of predator status by the Working Group for the CCAMLR Ecosystem Monitoring Program (WG-CEMP).

4.2 The Commission noted with concern that very few STATLANT returns of reported catches in the Convention Area had been received by the Secretariat by the deadline of 30 September. The work of the Scientific Committee has been hampered by poor data reporting for a number of years (CCAMLR-IX, paragraph 4.3; CCAMLR-X, paragraph 4.2) and the Commission endorsed the decision of the Scientific Committee to seek a solution to the problem (SC-CAMLR-XI, paragraph 3.12).

4.3 The Commission noted that data reporting from the *Dissostichus eleginoides* fishery in Subarea 48.3 (Conservation Measures 36/X and 37/X) had been prompt and comprehensive. In regard to reporting of monthly krill catches under Conservation Measure 32/X, Japan regretted that it had initially been lax in timely reporting but confirmed that there would be no such lapse in the forthcoming seasons. The Executive Secretary confirmed that although no biological data had been reported for the *Electrona carlsbergi* fishery under Conservation Measure 39/X, this fishery had not been operational after November 1991 and had therefore not been directly subject to the provisions of the Conservation Measure.

4.4 The Commission endorsed the Scientific Committee's comment on the Scientific Observers' Manual and noted that the Observer Scheme, when fully operational, would improve the quality and quantity of data from the fishery.

4.5 The Commission agreed with the Scientific Committee that the Scientific Observers' Manual, developed by the Scientific Committee's Working Groups and interested Members, should be tested in the field as soon as possible and reviewed or updated whenever necessary.

4.6 The Scientific Committee had reported discussions of it and the WG-FSA on the subject of effort controls as a means of managing fisheries (SC-CAMLR-XI, paragraphs 3.14 to 3.16). The Commission welcomed the introduction of discussions of effort limitations especially in connection with a precautionary approach to controlling the rate of expansion of fishing effort in new fisheries. Whilst it could give no specific guidance on the practical implications of such approaches (SC-CAMLR-XI, paragraph 3.16) it encouraged the Scientific Committee to pursue the subject further.

4.7 Decisions of the Commission relating to Conservation Measures are reported in Sections 8 and 9. The Commission endorsed the recommendations, advice and interim research plans of the Scientific Committee unless otherwise indicated here.

## Krill Resources

4.8 The Commission noted that the Scientific Committee had once again requested information on the number and catching capacities of vessels intending to harvest krill in the coming season. It was explained that the type of information required was different to that contained in the list of vessels intending to harvest, currently requested by the Secretariat in June of each year. The Scientific Committee was seeking information on numbers and catching capacity of vessels so as to have a more precise idea of likely developments in the fishery. Fishing Members indicated that they would have difficulty in providing this information because the fishing companies did not make decisions to fish until they had assessed the state of the market for particular species and would be disinclined to give an early indication of their intentions.

4.9 Japan, Chile, Russia, Poland and Ukraine said that they had no plans to increase their catch of krill in the 1992/93 season. Korea reported that it had no information on future fishing plans. Australia informed the Commission that a proposal to establish an Australian krill fishery, and a draft permit for this fishery, were under consideration by the Australian Government. It was not certain that the fishery would be able to start in the 1992/93 season. The proposal was for a maximum of four vessels and a maximum catch of 80 000 tonnes.

4.10 The Commission endorsed the recommendation of the Scientific Committee that fine-scale catch and effort data should be reported from the krill fishery for all statistical areas in the Convention Area. It also endorsed the request of the Scientific Committee that all available historical data be submitted to the Secretariat in fine-scale format.

4.11 The above decision means that catches of all species caught commercially in the Convention Area must now be reported to the Secretariat in fine-scale format, unless more specific reporting requirements have been defined by the Commission.

4.12 The Commission noted that the Scientific Committee had used a relatively simple model to arrive at a suggested management procedure for the krill fishery. The Commission's guidance had been sought on policy matters such as by how much and how often the fishery can change, which may be important as management procedures are developed (SC-CAMLR-XI, paragraph 2.81). The Commission encouraged the development of alternative management procedures as well as a feedback mechanism between the Scientific Committee and itself resolving to provide answers to the Scientific Committee's specific questions on policy matters as they arose following the consideration of these procedures.

4.13 The Commission noted that following a call for the submission of haul-by-haul data from the krill fishery at its last meeting (CCAMLR-X, paragraph 4.10), Japan said that like many other countries it had difficulties with submission of this type of data because of domestic legal restrictions, but that it had complied with all other data submission requirements of the Scientific Committee. In addition it stated it had offered to submit data on a scale of 10 x 10 n miles (SC-CAMLR-XI, paragraph 2.85). Members expressed their concern that data submission requirements of the Scientific Committee were being avoided because of domestic legal requirements. Some Members stated that the obligations of Parties to the Convention took precedence over domestic law. Nevertheless, the Commission commended Japan on what is an improvement in the detail of catch and effort data submitted to the Commission.

4.14 The United Kingdom noted that studies on catch-per-unit-effort (CPUE) from the krill fishery by Drs Mangel and Butterworth<sup>\*</sup>, endorsed by the Scientific Committee,

<sup>\*</sup> BUTTERWORTH, D.S. 1989. A simulation study of krill fishing by an individual Japanese trawler. In: Selected Scientific Papers. 1989 (sc-cAMLR-SSP/5). CCAMLR, Hobart, Australia: 1-108. BUTTERWORTH, D.S. 1989. Some aspects of the relation between Antarctic krill abundance and CPUE measures in the Japanese krill fishery. In:

indicated that haul-by-haul data are essential for the detection of changes in CPUE and hence the estimation of abundance. In the absence of haul-by-haul data from the commercial fishery the only method of estimating krill abundance is by the institution of a near-synoptic krill survey. However, Japan was of the view that haul-by-haul data are ineffective as a measure of krill abundance since it is known that the CPUEs of commercial krill fishing are insensitive to changes in the abundance of krill. Japan further stated that synoptic surveys by research vessels are essential for obtaining such information on krill abundance.

4.15 In the light of these comments, Norway, Japan and Australia believed that the question of a synoptic survey needed further examination and suggested that the Scientific Committee and its appropriate Working Groups consider the design for such a survey. Accordingly, the Commission requests the Scientific Committee to provide the design for a near-synoptic survey of Statistical Area 48, taking into account the area coverage, duration, all aspects of appropriate survey design, logistics and financial implications. The Scientific Committee should also consider what additional information, of value to CCAMLR, could be collected during such a survey, and the frequency of subsequent surveys that may be necessary in the continued absence of data from the fishery to enable alternative methods of assessment (paragraph 4.12 above) to be used.

## Fish

4.16 The Commission endorsed the requests for data on finfish made by the Scientific Committee (SC-CAMLR-XI, Annex 5, Appendix D).

4.17 The Commission noted the remarks of the Scientific Committee with regard to the consideration of measures that would reduce the by-catch of fish in krill trawls (SC-CAMLR-XI, paragraphs 3.17 and 3.18).

Selected Scientific Papers. 1989 (SC-CAMLR-SSP/5). CCAMLR, Hobart, Australia: 109-126. MANGEL, M. 1989. Analysis and modelling of the Soviet Southern Ocean krill fleet. In: Selected Scientific Papers. 1989 (SC-CAMLR-SSP/5). CCAMLR, Hobart, Australia: 127-236.

4.18 The Commission endorsed the advice of the Scientific Committee concerning Division 58.5.1 (SC-CAMLR-XI, paragraphs 3.88 to 3.93). The catch of *D. eleginoides* for the western trawling grounds should not exceed 1 100 tonnes and catches for the northern trawling grounds should be established at a level substantially below those taken in the 1991/92 season. The prohibition of directed fishing on *Notothenia rossii* should continue. The fishery for *Notothenia squamifrons* should remain closed. No substantial fishery for *Champsocephalus gunnari* is expected since the next strong cohort will not be recruited to the fishery in 1992/93.

4.19 Noting that there was currently no fishery for *Pleuragramma antarcticum* in Division 58.4.2, the Commission endorsed the Scientific Committee's recommendation that no fishery on *P. antarcticum* should be undertaken in the Integrated Study Regions (ISRs).

### CEMP

4.20 The Commission noted the very effective work by the Secretariat in investigating the acquisition of sea-ice data for Members involved in CEMP and in evaluating the most cost-effective way of providing Members with future editions of the booklet *Standard Methods for Monitoring*.

4.21 The Commission endorsed the comments of the Scientific Committee regarding the importance of the first comprehensive review by WG-CEMP of the predator monitoring data in relation to biological and physical environmental information and the importance of refining and extending these assessments in future years.

4.22 The Scientific Committee had extensive discussions about the potential impact of localised krill catches in Subareas 48.1 and 48.2 (SC-CAMLR-XI, paragraphs 5.24 to 5.58). The Commission noted that two different views had been expressed about the necessity of implementing management measures (such as closed areas and seasons) at scales smaller than subareas, with the object of providing adequate protection for predators at these local scales. Notwithstanding divergent views on this issue, the Commission endorsed the Scientific Committee's decision to initiate studies to assess the need for additional precautionary measures, such as closed areas and seasons (SC-CAMLR-XI, paragraphs 5.41 to 5.44).

4.23 The Commission noted that WG-CEMP had made considerable progress in estimating krill consumption by selected predators in the ISRs and urged it to complete this task as far as possible, and especially for Subareas 48.1 and 48.2. An essential complement to this work is the investigation of functional relationships between krilleating predators and their prey and the Commission welcomed the new initiatives proposed in SC-CAMLR-XI, paragraphs 5.59 and 5.60 and Annex 8, paragraph 2 and Appendix 1.

4.24 The Commission endorsed the recommendations of the Scientific Committee given in paragraphs 5.72 to 5.75. In particular, it extended encouragement to SCAR in its research initiative on Antarctic ice-breeding seals and endorsed the Scientific Committee's support of this initiative.

### Joint Meeting of WG-Krill and WG-CEMP

4.25 The Commission noted the success of this meeting and the important conclusions and initiatives summarised in its report (SC-CAMLR-XI, Annex 8). It encouraged the two groups to meet together at the next convenient opportunity.

#### Marine Mammals and Birds

4.26 The Scientific Committee had undertaken the second comprehensive review of the status and trends of marine mammal and bird populations in the CCAMLR Convention Area. (The previous review had been undertaken in 1987). The current review is a valuable summary and the SCAR Group of Specialists on Seals and Subcommittee on Bird Biology were especially thanked for providing the specialist advice on which it is based.

### **Exploratory Fisheries**

4.27 The Commission noted that in the past some Antarctic fisheries had been initiated and subsequently expanded in the Convention Area before sufficient information was available upon which to base management advice. In recent years, these "exploratory fisheries" have often started without adequate information being available to evaluate the fishery potential or the possible adverse impacts on the target, dependent or related populations. 4.28 It was noted that an effective evaluation of a fishery in its exploratory phase should include consideration of the target stock, by-catch species, dependent species, and the ecosystem of which they are a part. Exploratory fishing should not be allowed to expand faster than the acquisition of information necessary to ensure that the fishery can and will be conducted in accordance with the principles set forth in Article II of the Convention.

4.29 It was recalled that Conservation Measure 31/X on new fisheries had succeeded in providing a useful mechanism for evaluating new fisheries as they begin. The Commission agreed that it would be desirable to extend some of these requirements for new fisheries so that the provision of information would continue during a fishery's exploratory phase.

4.30 The Commission's attention was drawn to the steps that had been taken in relation to the recent new fisheries for crabs and *D. eleginoides*. In both cases, advance notice of the fisheries' inception had allowed fruitful discussions and agreement on actions and information that would be desirable during the early phase of each fishery. It would be helpful to have a formal mechanism ensuring that future fisheries received similar attention during their exploratory phase.

4.31 The Commission took note of the Scientific Committee's discussion of this topic (SC-CAMLR-XI, paragraphs 3.46 to 3.53). WG-FSA had also discussed new and exploratory fisheries, and had recommended that when insufficient data were available with which to calculate a TAC, consideration should be given to imposing precautionary limits on fishing effort (SC-CAMLR-XI, Annex 5, paragraphs 6.237 to 6.245).

4.32 The Commission agreed that it would be desirable to develop a formal procedure pertaining to new fisheries during their exploratory phase. In particular, there was agreement that consideration should be given to including at least the following elements in such a procedure:

- (i) advance notice that a Member is considering entering a new fishery during its exploratory phase;
- (ii) information on Members' fishing plans and operations;

- (iii) development of a data collection plan by the Scientific Committee that describes that type of data needed for assessments related to the exploratory fishery;
- (iv) limits on fishing effort during the exploratory phase; and
- (v) scientific observers working aboard vessels operating in an exploratory fishery.

4.33 The Commission requested the Scientific Committee and its Working Groups to consider this matter further during 1993 and to include in its advice, a definition of exploratory fishing.

# Scientific Publications

4.34 The Commission approved the proposal of the Scientific Committee to publish a collected volume *CCAMLR Scientific Abstracts* which will consist of abstracts of all scientific papers submitted to CCAMLR. It also approved the initiatives taken by the Scientific Committee (SC-CAMLR-XI, paragraph 11.2) to raise the standard of publication of the *Selected Scientific Papers* to that of an internationally recognised scientific journal.

# Access to CCAMLR Data

4.35 The Commission endorsed the changes proposed by the Scientific Committee to the rules of access to CCAMLR data (CCAMLR-VIII, paragraph 64). Accordingly, the following rules were adopted by the Commission for access to data held in the CCAMLR Data Centre:

- (a) All data submitted to the CCAMLR Data Centre should be freely available to Members for analysis and preparation of papers for use within the Commission, the Scientific Committee and their subsidiary bodies.
- (b) The originators/owners of the data should retain control over any use of their unpublished data outside of CCAMLR.

(c) Requests to the Secretariat by individual scientists of a Member for access to data in the CCAMLR Data Centre will only be considered if the request has been approved in writing by the Representative to the Scientific Committee (or his nominated deputy) of that Member.

The Representative is responsible for informing the individual scientist requesting the data, of the rules governing access to CCAMLR data and for obtaining the requester's agreement to comply with these rules.

- (d) When Members request access to data for the purpose of undertaking analyses or preparing papers to be considered by future meetings of CCAMLR bodies, they should indicate the reason for the request and the nature of envisaged data analysis. The Secretariat should supply the data and inform the originators/owners of the data of this action, together with the details of the original request. When data are requested for purposes other than consideration by future meetings of CCAMLR bodies, the Secretariat will, in response to a detailed request, supply the data only after permission has been given by the originators/owners of the data.
- (e) Data contained in papers prepared for meetings of the Commission, the Scientific Committee, and their subsidiary bodies should not be cited or used in the preparation of papers to be published outside of CCAMLR without the permission of the originators/owners of the data. Furthermore, because inclusion of papers in the *Selected Scientific Papers* series or any other of the Commission's or Scientific Committee's publications, constitutes formal publication, written permission to publish papers prepared for meetings of the Commission, Scientific Committee and Working Groups should be obtained from the originators/owners of the data and authors of papers.
- (f) The following statements should be placed on the cover page of all unpublished working papers and background documents tabled:

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