

On the Scientific Committee of the Commission for the Conservation of Antarctic Marine Living Resources CCAMLR

2002-2003

by
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Introduction

CCAMLR is a Convention for the conservation of living marine resources in the Antarctic that manages fisheries taking into account the marine ecosystem. Targets for fishery are krill, toothfish, icefish, squids and crabs. For that purpose, the Commission meets annually and decides upon Conservation measures. It receives scientific advice from its Scientific Committee.

The Scientific Committee receives advice and input from its working groups on Ecosystem Monitoring and Management (WG-EMM), on Fish Stock Assessment (WG-FSA), and on Incidental Mortality in Antarctic Fisheries (WG-IMAF). There are also subgroups such as for Protected Areas, Joint Assessment (JAG), Assessment Methods (WG-FSA-SAM), Fisheries Acoustics (WG-FSA-SFA), and others, that are temporarily established to concentrate on some specific problems, as well as workshops on themes that have to be discussed in more depths by specialists. It also runs the CCAMLR Ecosystem Monitoring Program (CEMP). There are also surveys from Member countries, or coordinated surveys such as the 2000 survey on krill.

For better managing the living resources, the convention area is sub divided in areas corresponding to the Atlantic, the Pacific and the Indian Ocean sectors, sub-areas and divisions.

In 2002 and 2003 the Scientific Committee was chaired by Dr. R. Holt (USA) and the Commission was chaired by Mr. N. Sassanelli (Italy) in 2002 and by Mr K. Yonezawa (Japan) in 2003. CCAMLR has 24 Members: Argentina, Australia, Belgium, Brazil, Chile, European Community, France, Germany, India, Italy, Japan, Republic of Korea, Namibia, New Zealand, Norway, Poland, Russian Federation, South Africa, Spain, Sweden, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America and Uruguay. There are also Contracting Parties: Bulgaria, Canada, Finland, Greece, Netherlands, Peru and Vanuatu. Several observers are usually present at the meetings, such as: The Antarctic and Southern Ocean Coalition (ASOC), the Commission for the Conservation of Southern Blue fin Tuna (CCSBT), the Committee for Environmental Protection (CEP), the Convention on International Trade in Endangered Species (CITES), the Permanent Commission on the South Pacific (CPPS), the Food and Agriculture Organisation of the United Nations (FAO), the Forum Fisheries Agency (FFA), the Inter-American Tropical Tuna Commission (IATTC), the International Commission for the Conservation of Atlantic Tunas (ICCAT), the Intergovernmental Oceanographic Commission (IOC), the World Conservation Union (IUCN), the International Whaling Commission (IWC), the Scientific Committee on Antarctic Research (SCAR), the Scientific Committee on Oceanic Research (SCOR), the Secretariat of the Pacific Community (SPC) and the United Nations Environment Programme (UNEP), and the Coalition of Legal Toothfish Operators (COLTO). Non-Contracting Parties that were known to have an interest in fishing for, or trade in, *Dissostichus* spp such as: Angola, Belize, People's Republic of China, Columbia, Indonesia, Kenya, Madagascar, Malaysia, Mauritius, Mexico, Mozambique, Panama, Philippines, Sao Tome and Principe, Seychelles, Singapore, St Vincent and Grenadines, Thailand, and Togo, were invited as observers.

CCAMLR Ecosystem Monitoring Program

CCAMLR has an Ecosystem Monitoring and Management Program (CEMP) that aims to:

(i) Detect and record significant changes in critical components of the ecosystem; and (ii) distinguish between changes due to the harvesting of marine resources and changes due to environmental variability.

A CEMP Review Workshop (2003) had examined whether the nature and use of the existing CEMP data are still appropriate for addressing the original objectives, and if these objectives remain appropriate and/or sufficient. The conclusion was that CEMP data were appropriate for detecting and recording significant change in some critical components of the ecosystem, but further critical evaluation of the nature, magnitude and statistical significance of changes indicated by the data were necessary. Work also remains to determine how representative the CEMP sites are of their local areas and regions. The original objectives of CEMP remained appropriate, but a third objective 'To develop management advice from CEMP and related data' should be added.

Time series of non-CEMP data (e.g. derived seabird and pinniped monitoring programs) are of value in addressing the objectives of CEMP. Indices of krill availability to land-based krill predators could be derived from fishery-dependent data and, with indices derived from mackerel icefish data, may be of value in monitoring krill in certain regions. In a management context there is utility in the determination of functional responses linking predators to their prey, and in the elaboration of behavioural models based on interactions between the aspects of the environment, krill, krill predators and a krill fishery. Simulation studies indicated that accounting for the nature of the variability of estimates of krill availability and predator performance could result in improved ability to detect anomalies.

The most important tasks for further consideration are to: review sources and magnitudes of variability in predator-response parameters; investigate the utility of indices derived from haul-by-haul catch per unit effort (CPUE) data as a proxy for direct measures of krill availability; investigate alternative methods for determining anomalies and predicting krill abundance using predator response curves.

The most difficult is to unambiguously attribute causes of ecosystem change independently to either the actions of the krill fishery or to environmental change. That is why it is important to apply appropriate levels of precaution when taking decisions regarding the impacts of the krill fishery on the ecosystem.

The evaluation of the status and trends in the Krill-centric ecosystem show that further analyses are required to understand the relative contribution of flux and local retention of krill within different regions, and that these findings may be important to allocating precautionary catch limits to small scale management units (SSMU). It may also be important to produce a coherent overview of environmentally induced variability in the Southern Ocean and to consider potential scenarios that might influence ecological relationships and trophic interactions involving exploited fish stocks with implications for fisheries management.

Non-krill Centred Ecosystem

Some consideration has been given to ecosystem pathways that were centred on fish and there is a need for the development of methods to incorporate data on interactions between mackerel icefish and upper-trophic level predators into assessment procedures and into ecosystem models involving mackerel icefish. There were also produced time series of data on the diet of Antarctic shags that provide useful information on ecosystem dynamics.

Protected Areas

The Advisory Subgroup on Protected Areas review details of proposals for the designation and protection of CEMP monitoring sites, of CEMP management plans, of guidelines for the production of maps of protected areas relevant to CCAMLR, and of the methodology for assessment of proposals for marine protected areas forwarded in accordance with Article 6(2) of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty. It also provides advice on marine protected areas that seek designation as an Antarctic Specially Protected Area (ASPA) or an Antarctic Specially Managed Area (ASMA) under the Antarctic Treaty, and on the implementation of marine protected areas that may be proposed in accordance with the provisions of Article IX.2(g) of the Convention, including 'the designation of the opening and closing of areas, regions or sub regions for purposes of scientific study or conservation, including special areas for protection and scientific study'.

Harvested Species

CCAMLR Member countries (Australia, Chile, France, Japan, New Zealand, Poland, Republic of Korea, Russian Federation, South Africa, Spain, Ukraine, UK, USA and Uruguay) actively participated in fisheries under the conservation measures in force. In the 2002/03 season there was: trawl fishery for *Champscephalus gunnari* in Sub area 48.3 and in Division 58.5.2; trawl and longline fishery for *D. eleginoides* in Division 58.5.2; longline fishery for *Dissostichus eleginoides* in Sub area 48.3, Division 58.4.2, Sub areas 88.1 and 88.2, and trawl fishery for *Euphausia superba* in Area 48.

International Scientific Observation

CCAMLR has a Scheme of International Scientific Observation on longline vessels, on finfish trawlers and on krill vessels. The logbooks and reports are submitted electronically. This allows the management of the fisheries in all statistical Areas, Sub-Areas and Divisions, according to the Conservation Measures in force, and provides data for stock assessments and the establishment of the catches allowed for the following year. The content and structure of the *Scientific Observers Manual* is revised every year.

Krill Fishing

The krill fishery in the 2002/03 season has operated in Sub area 48.1, 48.2 and 48.3 and the catch reported to 3 October 2003 was 110 334 tonnes. The total catch for 2002/03 is expected to be similar to that reported in 2001/02 (125 987 tonnes).

Fish Resources

Toothfish

A total of 15 931 tonnes of *Dissostichus* spp. was taken in the Convention Area during the 2002/03 season (to 3 October 2003), compared with 15 302 tonnes in the previous season. Data reported in the CDS indicated that 18 919 tonnes of *Dissostichus* spp. was taken outside the Convention Area in 2002/03 (to 3 October 2003) compared with 35 484 tonnes in the previous season.

Regarding the stock of *D. eleginoides* in Division 58.5.1, the Commission noted the dramatic increase in total removals from 2000 onwards due to increased IUU catches (Illegal, or Unreported).

Icefish

A total of 4 498 tonnes of *C. gunnari* was taken in the Convention Area during the 2002/03 season (to 3 October 2003), compared with 3 532 tonnes in the previous season.

It was agreed to incorporate the results from an acoustic survey in the current assessment of *C. gunnari* in Sub area 48.3. The acoustic survey was conducted in 2002 and provided an estimate of a component of the pelagic biomass of *C. gunnari* in the depth range 8–58 m above the bottom.

Other Finfish Species

The fishery for *Electrona carlsbergi* in Sub area 48.3 should be closed until sufficient information is obtained to revise the assessment.

By-catch Species

Progress towards assessing the long-term status of by-catch species associated with longline and trawl fisheries was made. However, insufficient biological information was available for rajids (skates and rays) and no assessments could be currently undertaken for these taxa. For macrourids (rattails or grenadiers), there were sufficient biological data available, indicating that these species have relatively low productivity and may be vulnerable to overexploitation. The development of avoidance and mitigation measures for by-catch species should be given high priority. There were initial studies to estimate the survivorship of skates and rays in the catch-release process, but further studies on skate survivorship are needed.

Crab Resources

The fishery for crab in Sub area 48.3 was not carried out in the 2002/03 season and no proposal to harvest crab was received for the 2003/04 season.

Squid Resources

The fishery for *Martialia hyadesi* in Sub area 48.3 was not carried out in the 2002/03 season and no notification to harvest this species was received for the 2003/04 season.

New and exploratory fisheries

There were several New and Exploratory Fisheries in 2002/03: in Sub area 88.1, 1 792 tonnes of *Dissostichus* spp. were taken against a catch limit of 3 760 tonnes and fishing occurred north of 65°S and south of 65°S; in Sub area 88.2, 106 tonnes of *Dissostichus* spp. were taken against a catch limit of 375 tonnes; in Division 58.4.2, 117 tonnes of *Dissostichus* spp. were taken against a catch limit of 500 tonnes. In Sub area 88.1, fishing had been restricted by icebergs and sea-ice and vessels had not fished south of 72°30'S because of safety concerns.

A total of 31 notifications for exploratory fisheries in 2003/04 were made by 14 Members, for 29 vessels, and covering most statistical sub areas and divisions in the Convention Area, targeting *D. eleginoides* and a trawl fishery targeting *Chaenodraco wilsoni*, *Trematomus eulepidotus*, *Lepidonotothen kempfi* and *Pleuragramma antarcticum* in Division 58.4.2. The Sub areas 48.1, 48.2, 58.6 and 58.7 and

Division 58.4.4 (outside EEZs) would remain closed to fishing on *Dissostichus* spp. until a survey had been completed, the results analysed, and the fishery was reopened.

Assessment and Avoidance of Incidental Mortality of Antarctic Marine Living Resources during Fishing Operations

The levels of seabird by-catch in the Convention Area (15 seabirds) had been the lowest ever recorded. This marks a very significant achievement by all concerned and compares very favourably with the situation in 1997 when 6 589 seabirds were reported killed, and when CCAMLR started to implement conservation measures to address the problem.

However, in the EEZs in Sub area 58.6 and Division 58.5.1, the seabird by-catch levels in 2002 and 2003 (totalling 25 841 seabirds, mainly white-chinned petrels) were the highest ever recorded in the Convention Area and the by-catch rates, although reduced in 2003, were still amongst the highest ever reported for the Convention Area.

It is also important to take into consideration data on incidental mortality of seabirds during longline fisheries outside the Convention Area. The Agreement on the Conservation of Albatrosses and Petrels (ACAP) shall come into force as soon as ratified by all Members and Parties for ACAP were asked to ensure that CCAMLR's work in this area receives due support and recognition. Many Members are finalising their National Plans of Action (NPOA-Seabirds) in conformity with the International Plan of Action (IPOA).

There is also some actual or potential mortality of fur seals during krill trawling operations, and Members with experience in avoiding capturing seals in trawl gear or in releasing them from such gear were invited to make this widely available.

Marine Debris

Marine debris and its impact on marine mammals and seabirds are monitored in the Convention Area. Members have conducted marine debris programs in accordance with CCAMLR standard methods at 11 sites, all within Area 48. These data entered into the marine debris database. Marine mammal entanglements and presence of debris in seabird colonies showed recent increases.

Chile has proposed to develop a research and education plan to address issues of marine debris in the Magallanes region following the protocols developed by CCAMLR.

Illegal Unreported and Unregulated (IUU) fishing in the Convention Area

Current Level of IUU Fishing

The estimated total IUU catch of 10 070 tonnes indicates that there may have been a slight reduction in the total IUU catch in the Convention Area in the 2002/03 fishing season. However, this remained much higher than was sustainable given the current knowledge of toothfish populations in the Convention Area. The high-seas catches reported from Area 47 have increased for the past three years (76 tonnes in 2000/01, 655 tonnes in 2001/02 and 2 852 tonnes so far in 2002/03); catches in Areas 51 and 57 were lower in the 2002/03 fishing season than in the 2001/02 fishing season (3 643 tonnes in 2002/03 compared to 10 620 tonnes in 2001/02 in Area 51 and 858 tonnes in 2002/03 compared to 3 803 tonnes in 2001/02 in Area 57), but this might be because of incomplete data reporting.

Some of the catches reported via the CDS may represent IUU catches from the Convention Area, misreported as coming from high seas outside the Convention Area.

CCAMLR recognizes that the current levels of IUU fishing are unsustainable and that Members should continue to take stringent measures to combat IUU fishing in the Convention Area. The levels of mortality arising from IUU fishing in the Convention Area remain high, and continue to compromise the sustainability of albatross, giant petrel and white-chinned petrel populations breeding in the Convention Area. Many of these populations are at extremely low levels and some are close to extinction. Continuous action to prevent further seabird mortality by unregulated vessels is necessary.

Many Members have implemented the Catch Documentation Scheme (CDS) during the 2003 intersessional period. There is also the development of an Electronic Web-based CDS.

Information submitted by non-Contracting Parties show that CDS and some requirements of CCAMLR Conservation Measures have been implemented (e.g. China, Seychelles).

A Proposed List of Vessels of Contracting Parties and a Proposed List of Vessels of non-Contracting Parties were discussed.

Publications

In addition to annual reports of CCAMLR, the Commission noted that the following documents were also published in 2003:

- (i) *CCAMLR Scientific Abstracts*, covering abstracts of papers presented in 2002
- (ii) *CCAMLR Science*, Volume 10
- (iii) *Statistical Bulletin*, Volume 15
- (iv) Revisions to *Inspectors Manual* and *Scientific Observers Manual*.

Final remarks

Biologists of National Antarctic Programs, represented at the SCAR Life Sciences Standing Scientific Committee (LSSSG) on one hand, and the biologists that are inserted in Governmental programs that aim to provide the best available scientific information to CCAMLR on the other, are both doing research on Antarctic marine organisms. Even taking into consideration that the aims of both are different, both would gain if a greater integration would happen between the Scientific Committee of CCAMLR and the SCAR-LSSSG. This could be concretely initiated on the occasion of the activities related to the International Polar Year, when coordinated marine surveys and harmonised data collection could be developed.