CCAMLR

PERFORMANCE REVIEW PANEL

REPORT

1 September 2008

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Abbreviations

Acceding States	States that have acceded to the CAMLR Convention under Article XXIX but which are not Members of the Commission
Agreed Measures	1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora
CAMLR Convention	1980 Convention on the Conservation of Antarctic Marine Living Resources (the 'Convention')
CCAMLR Members	Contracting Parties that have become Members of the Commission (CCAMLR) subject to the provisions of Article VII of the CAMLR Convention
Chairman's Statement	Statement by the Chairman of the Conference on the Conservation of Antarctic Marine Living Resources (1980)
Code of Conduct	1995 FAO Code of Conduct for Responsible Fisheries
Compliance Agreement	1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas
Conference	Conference on the Conservation of Antarctic Marine Living Resources
Contracting Parties (CPs)	CAMLR Convention Parties – may include both Members and Acceding States
Madrid Protocol	1991 Protocol on Environmental Protection to the Antarctic Treaty
Reykjavik Declaration	2001 Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem

Acronyms

ACAP	2001 Agreement on the Conservation of Albatrosses and Petrels
ASMA	Antarctic Specially Managed Area
ASPA	Antarctic Specially Protected Area
ATCM	Antarctic Treaty Consultative Meeting
ATCP	Antarctic Treaty Consultative Party

ATS	Antarctic Treaty System (various agreements linked to the 1959 Antarctic Treaty including the CAMLR Convention, CCAS and the Madrid Protocol)
BIOMASS	Biological Investigations of Antarctic Marine Ecosystem and Stocks
CBD	1992 Convention on Biodiversity
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCAMLR-2000 Survey	CCAMLR 2000 Krill Synoptic Survey of Area 48
CCAS	1972 Convention for the Conservation on Antarctic Seals
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CDS	Catch Documentation Scheme for *Dissostichus* spp.
CEMP	CCAMLR Ecosystem Monitoring Program
CEP	Committee for Environmental Protection
CITES	1972 Convention on International Trade in Endangered Species
CM	Conservation Measure (adopted under Article IX of the CAMLR Convention)
CMS	Convention on Migratory Species
COFI	Committee on Fisheries, FAO
COMM CIRC	Commission Circular
CP	Contracting Party
CPMAS	2004 CCAMLR Performance Management and Appraisal Scheme
C-VMS	Centralised Vessel Monitoring System
CWP	Coordinating Working Party on Fisheries Statistics
DCD	*Dissostichus* Catch Document
EAF	Ecosystem Approach to Fisheries (see text description)
E-CDS	Electronic Catch Documentation Scheme
EEZ	Exclusive Economic Zone

FAO	United Nations Food and Agriculture Organisation
FIBEX	First International BIOMASS Experiment
GYM	General Yield Model
ICCAT	International Commission for the Conservation of Atlantic Tuna
ICJ	International Court of Justice
ICRW	1946 International Convention for the Regulation of Whaling
IGO	Intergovernmental Organisation
IMAF	Incidental Mortality Associated with Fishing
IMO	International Maritime Organization
IPOA	FAO International Plan of Action
ITLOS	International Tribunal for the Law of the Sea
IUU	Illegal, Unreported and Unregulated (fishing)
IWC	International Whaling Commission
JAG	Joint Assessment Group
KYM	Krill Yield Model
MCS	Monitoring, Control and Surveillance
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MSY	Maximum Sustainable Yield
NAFO	Northwest Atlantic Fisheries Organisation
NCP	Non-Contracting Party
NEAFC	North East Atlantic Fisheries Commission
NGO	Non-Governmental Organisation
REI	Regional Economic Integration Organisation (European Community)

RFB	Regional Fishery Body (similar to RFMO – no fisheries management mandate)
RFMO	Regional Fisheries Management Organisation
RP	Review Panel of CCAMLR
RSN	Regional Fishery Body Secretariats Network
SCAF	Standing Committee on Administration and Finance
SCAR	Scientific Committee on Antarctic Research
SC-CAMLR	Scientific Committee for the Conservation of Antarctic Marine Living Resources
SCIC	Standing Committee on Implementation and Compliance
SCOI	Standing Committee on Observation and Inspection
SEAFO	South East Atlantic Fisheries Organisation
SG-ASAM	Subgroup on Acoustic Survey and Analysis Methods
SSMU	Small-Scale Management Unit
SSRU	Small-Scale Research Unit
SSSI	Site of Special Scientific Interest
SWIOFC	Southwest Indian Ocean Fisheries Commission
TASO	Ad Hoc Technical Group for At-Sea Operations
UN	United Nations
UNCED	1992 United Nations Conference on Environment and Development (‘Rio Summit’)
UNCLOS	1982 United Nations Convention on the Law of the Sea
UNFSA	1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Fish Stocks Agreement)
UNGA	United Nations General Assembly
VME	Vulnerable Marine Ecosystem

VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Convention
WG-EMM	Working Group on Ecosystem Monitoring and Management
WG-IMAF	Ad Hoc Working Group on Incidental Mortality Associated with Fishing
WG-FSA	Working Group on Fish Stock Assessment
WG-SAM	Working Group on Statistics, Assessments and Modelling
WSSD	2002 World Summit on Sustainable Development (‘Johannesburg Summit’)
WTO	World Trade Organization

Executive Summary

1. At its Twenty-sixth Annual Meeting (2007), CCAMLR decided to undertake a Performance Review of the organisation during 2008 (CCAMLR-XXVI, Annex 7 (Appendix I)). That decision provided for the Review to be carried out by a Review Panel (RP) appointed by the Commission composed of nine persons, as follows: four internationally recognised experts with CCAMLR experience, the Chair of the ATCM's Committee for Environmental Protection, an expert nominated by CCAMLR NGO observers, and three external experts with experience in relevant areas of science, fisheries management and legal matters. The Review's primary purpose was to evaluate the Commission's performance against comprehensive criteria provided in Annex 7 and more generally against the objectives and principles set out in Article II of the Convention.

2. The RP was required to perform its work in a short period of time. It was appointed on 11 April 2008 and had to deliver its report before the Twenty-seventh Annual Meeting of CCAMLR in October 2008. In practice, the work of the RP was condensed into the period between late June (when it met for a week in Hobart) and the end of August when the final report was transmitted to the Secretariat in time for its circulation to CCAMLR Members before CCAMLR-XXVII. The RP made use of extensive information that the Secretariat kindly provided as well as the knowledge and expertise of its members. The RP carefully followed the criteria set out in CCAMLR-XXVI, Annex 7, and adopted its report by consensus.

3. CCAMLR is an integral part of the ATS as evidenced by Articles III, V and IV.1 of the Convention. This relationship between CCAMLR, the Antarctic Treaty and its Protocol on Environmental Protection, as well as the conservation principles embedded in the Convention itself, mark a significant distinction between CCAMLR and traditional RFMOs. Nevertheless, there are increasing numbers of CCAMLR Parties that have no traditional linkages to the Antarctic Treaty (or the ATS). As such, there may be virtue in reinforcing the obligations of Articles III, V (and IV.1), particularly in relation to Acceding States.

4. The regulation and management of Antarctic marine living resources is covered by a complexity of jurisdictions between various instruments, including not only CCAMLR, but also CCAS, ACAP and, where relevant, ATCM measures and the Environmental Protocol. In consequence, there is a need for closer integration, understanding and communication between the respective bodies responsible for those instruments.

5. The risks and impacts associated with the introduction of alien species through fishing-related activities have received only limited attention within CCAMLR. Given that non-native species are considered, in a general sense, a high-priority issue by the Antarctic Treaty's CEP, clarity is required as to where the matter of non-native species in relation to the Antarctic marine environment should be best dealt with institutionally.

6. With respect to MPAs, there appear to remain differing views within the ATCM and CCAMLR on the very principle of designating MPAs, even though that principle had been agreed by consensus through adoption of the Environmental Protocol. CCAMLR has an opportunity to take on a more proactive role with respect to the designation of MPAs, both with respect to Article 5 of Annex V to the Environmental Protocol, and Article 9.2(g) of the

Convention. To date, however, CCAMLR has taken very little direct action with respect to either of these provisions despite the fact that the primary responsibility and expertise within the ATS for designating marine areas would appear to lie with CCAMLR.

7. Whilst significant progress has been made by CCAMLR towards establishing a bioregionalisation of the Southern Ocean, the momentum of this work needs to be maintained, particularly with regard to the identification of areas for protection.

8. Whilst extensive areas of CCAMLR waters are currently subject to a range of measures and controls, none of the areas subject to such controls can be considered as being, or had been specifically designed as, an IUCN Category I MPA. Taking a proactive approach towards the design and establishment of new MPAs would be consistent with CCAMLR's 'unique' position as a conservation-based organisation and provide CCAMLR with the opportunity to provide leadership amongst RFMOs.

9. Given the extreme and hostile environment in which some CCAMLR fisheries operate, it is appropriate for CCAMLR to give due attention to the broader issues of vessel safety standards and marine pollution management. This includes the need to be alert to discussions within the ATCM and the IMO on such issues as the control of ballast water discharge and the Polar Shipping Code, with a possible view to extending such provisions to fishing vessels.

10. On the broader issue of the relationship between CCAMLR and the ATCM on environmental protection issues related to marine living resources, it is evident that more active engagement between these two bodies is needed.

11. With regard to the status of the species and resources in the Convention Area, the RP ascertained that the stock status and trends for the current target species and the retained by-catch species in both established and developing fisheries are broadly consistent with Article II of the Convention and international best practice. To ensure that these trends continue in future, there are issues with IUU fishing, and with the adequacy of information for managing both established and developing fisheries, that require further and ongoing attention. The status of many by-catch species is unknown or poorly known, the broader ecosystem monitoring of biodiversity and dependent predators is not well connected to management decision-making, and the present monitoring and management approaches will require further development to address successfully the dual challenges of climate change and fishery development. There is need for particular attention to be directed toward the adequacy of monitoring and management of the krill fishery to ensure that its expected development is consistent with Article II, both in relation to the target species and dependent and related species.

12. CCAMLR is a world leader in developing and implementing the Ecosystem Approach to Fisheries and the Precautionary Approach. CCAMLR is particularly advanced in its development and use of methods to manage prey species so as to protect dependent predators, in assessing and limiting fishery impacts on by-catch species, and in providing a structured and precautionary process for the orderly development of new or exploratory fisheries. The quality of the scientific input is very high and scientific advice is almost always followed. Challenges remain, however, in the effective control of fishing and fishing capacity, establishing compatible CMs throughout the Convention Area (and as necessary outside the Convention Area), anticipating the effects of increased fishing pressure and climate change

and developing monitoring and/or precautionary management responses before undesirable effects occur. In addition, there needs to be the development of an overall strategy for protection of biodiversity, and the recovery of depleted species. There is also the need to identify the fishing capacity needed to harvest the resources sustainably and to develop management measures to prevent or eliminate excess capacity.

13. Overall, the RP considered that the compliance and enforcement arrangements that have been developed and implemented by CCAMLR over the years have been relatively effective. The RP noted that CCAMLR operates in a dynamic environment. This inevitably requires constant adjustment and fine-tuning of regulatory arrangements and the development and implementation of new measures, as and when circumstances dictate. In order to improve current arrangements and to ensure that CCAMLR stays at the forefront of best practice, the RP has recommended some important enhancements to existing MCS measures.

14. In particular, it sees the need to further enhance the CDS through mandating the immediate use of E-CDS; linking and real-time reconciliation of catch data and DCDs by the Secretariat, and the need for a clear definition of 'transhipment' and where and under what conditions this can occur. In addition, it believes the current VMS CM 10-04 could potentially detract from effective delivery of MCS information. It should be further strengthened by mandating C-VMS reporting directly to the Secretariat and ensuring that these data must be made available in real time for surveillance and enforcement purposes, including planning.

15. The MCS provisions of CCAMLR would also be improved by enhancing the transparency of issues such as inspections, infringements, sanctions and domestic legislation. Harmonising and clarifying reporting arrangements for catch, CDS, C-VMS and port inspection would facilitate and improve the timely exchange of information between CPs and the Secretariat. The RP also recommended that a clear definition of 'fishing vessel' be developed. This should also address fishing support vessels and reefers.

16. The RP also considered there is an urgent need to review the operation of CMs 10-06 and 10-07 to ensure not only the seamless and timely updating of IUU vessel lists, but also that such information is then circulated as widely as possible. Finally, given the significant workload and increasing challenges facing SCIC, the RP recommended that the terms of reference, the *modus operandi* and resources available to this Committee be reviewed.

17. Consensus decision-making has worked for CCAMLR over a long period of time. This is very positive but, as for any decision-making mechanism, there may have been costs associated with it. Whilst decisions possessing normative and regulatory effects must continue to be addressed on the basis of consensus, determining how such decisions were implemented could be submitted to a different procedure. This could be effected either by a majority rule within the Commission or alternatively by submission of the matter to a specially constituted independent subsidiary organ, e.g. an expert RP, which should function through majority rule.

18. CCAMLR dispute settlement mechanisms appear to be unsatisfactory. There is a pressing need to take substantive action to address this situation. In this regard, the binding procedures for dispute settlement set out in Part XV of UNCLOS can be considered by CPs in a two-fold manner, either as a benchmark that should be followed for an eventual amendment

of Article XXV of the Convention, or as a mechanism to be used between CPs that are also parties to UNCLOS and by those CPs with regard to NCPs whose vessels are engaged in illegal fishing in CCAMLR waters, and which are also parties to UNCLOS.

19. CCAMLR has a sizeable number of Observers (including Acceding States, NCPs, IGOs and NGOs) that are invited routinely to attend meetings of the Commission and its Scientific Committee; though attendance at CCAMLR meetings varies.

20. Managing the participation of a significant (and potentially growing) number of Observers remains a challenge, and opportunities to improve that engagement need to be explored. This might include a review of the Commission's and Scientific Committee's Rules of Procedure, as they relate to Observers.

21. CCAMLR, and in particular its Secretariat, puts considerable effort into ensuring CCAMLR material is made publicly available in a timely fashion. However, if this standard is to be maintained, it will be essential for greater attention to be given to ensuring that meeting reports are delivered in a more synthesised fashion. Unless greater brevity can be achieved, or more resources made available to the Secretariat, the timely production and distribution of such material may well be jeopardised.

22. Given the increasing importance of websites as a communication tool, re-development of the CCAMLR website will also be required, to ensure that it adequately supports the internal workings of CCAMLR as well as providing an important educational and outreach tool.

23. CCAMLR has demonstrated a commendably proactive approach to engaging with non-Contracting Parties, as demonstrated through its Policy to Enhance Cooperation between CCAMLR and Non-Contracting Parties, and its efforts to ensure participation in the CDS. Such action is encouraged on an ongoing basis.

24. CCAMLR has in place a number of measures directed at, or affecting vessels of NCPs as well as measures, including those addressing the CDS that are implemented voluntarily by cooperating non-Members. Action has also been taken by CAMLR Convention Parties (CPs), individually and collectively, as well as by the Secretariat, with third-party States whose vessels or nationals are acting contrary to the provisions of the Convention.

25. CCAMLR has shown determination and innovation to engage with NCPs in an attempt to achieve greater regulation of the vessels of those Parties. Nevertheless, further effort should be made to examine the feasibility and likely success of a range of actions that might be taken against non-cooperating NCPs.

26. Although in ecosystem terms CCAMLR is largely self-sufficient, there are clear examples where regular and constructive dialogue with other bodies outside the Convention Area, including RFMOs and IGOs, might add value. Opportunities to ensure effective engagement with such States and organisations both at annual CCAMLR meetings and through more formal agreements in accordance with Article XXIII.4 of the Convention should be explored.

27. Through its Secretariat and Member States individually, CCAMLR has put commendable effort into engaging with Developing States. Such initiatives include providing

training in, e.g. the CCAMLR CDS and MCS. However, CCAMLR has few provisions in place targeted specifically at supporting Developing States in areas addressed by Article 5 of the FAO Code of Conduct. As such, CCAMLR may wish to give consideration to new means for providing support to Developing States.

28. The RP examined the extent to which financial and other resources are made available to the Secretariat to achieve the objectives set by the Commission and how efficiently these resources are used.

29. The RP reviewed the regulations that govern the financial administration of the Commission and the Scientific Committee. The review includes consideration of Members' contributions and the different sources of funding available to CCAMLR.

30. The principles of zero real growth budget and cost recovery for new and exploratory fisheries were examined. The RP recognised that although it is obviously necessary to maintain tight fiscal control over expenditures, the objective of a nominal zero growth of the budget seems unrealistic, particularly when viewed against the ever-increasing demands being placed on the Commission. The RP believed there may well be instances which require additional Members' contributions to meet such priorities.

31. Recommendations stemming from this review will require an increase in funding if they are to be implemented. In this context, the RP discussed the merits of expanding the use of cost recovery to reflect more fully the costs incurred in providing fishing operators with access to CCAMLR marine resources.

32. The RP was of the view that the Commission should consider how it might provide enhanced support to the work undertaken by SC-CAMLR. At present there is an over-reliance on relatively few Members who undertake the relevant scientific research needed to support the work of CCAMLR. This situation may mean that CCAMLR's capacity to meet future research requirements will be limited.

33. The RP examined the extent to which CCAMLR is efficiently and effectively managing its human and financial resources, against, *inter alia*, the implications of the 1997 Management Review of the Secretariat, the 2002 Secretariat Strategic Plan and the 2004 CPMAS.

34. The RP noted that a number of senior and long-serving Secretariat staff members were approaching retirement age. The Commission should consider how it might address the issue of succession planning to ensure the continuity of function and the transfer of essential institutional knowledge when senior and long-serving Secretariat staff members leave the organisation.

35. The RP discussed practical measures to improve the administrative mechanisms of CCAMLR meetings, to avoid duplication of work carried out by the Standing Committees and the Plenary of the Commission and to upgrade the work of the Standing Committees and the discussions in the Commission's Plenary.

Introduction

1. The Review Panel

1. At its Twenty-sixth Annual Meeting (22 October to 2 November 2007), the Commission adopted a proposal to undertake a Performance Review of CCAMLR during 2008. In accordance with Article IX, paragraph 1 of the Convention (CCAMLR-XXVI, paragraph 17.20), the proposal was adopted as a decision of the Commission in Annex 7 to the CCAMLR-XXVI Report (Appendix I).

2. Annex 7 of CCAMLR-XXVI provides for the Review to be carried out by a Review Panel (RP) appointed by the Commission following procedures outlined in paragraphs 4 and 5 of the annex. The selection of the RP was finalised on 11 April 2008 (COMM CIRC 08/47) and comprised the following:

- four internationally recognised experts with CCAMLR experience and a thorough understanding of the Convention, and who also reflect the composition of the CCAMLR Members: **Amb. Jorge Berguño, Dr Inigo Everson, Dr Enrique Marschoff and Dr Mike Richardson;**
- the Chair of the CEP: **Dr Neil Gilbert**;
- an expert from a CCAMLR NGO observer: **Mr Frank Meere**;
- three external experts, among whom there is experience in relevant areas of science, fisheries management and legal matters (including compliance and enforcement issues): respectively **Dr Keith Sainsbury, Dr Ramiro Sanchez and Prof. Marcelo Kohen**.

2. Terms of Reference for CCAMLR Performance Review

3. In keeping with Article IX.1 of the Convention, the Review's primary purpose was to evaluate the Commission's performance in giving effect to the objectives and principles set out in Article II of the Convention. In undertaking the Review, the Commission acknowledged[1] that:

- Article II of the Convention sets out the objective of the Convention as 'the conservation of the Antarctic marine living resources' and that, for the Convention's purpose, the term 'conservation' includes rational use;
- Article V of the Convention highlights the special obligations and responsibilities of Antarctic Treaty Consultative Parties for the protection and preservation of the environment of the Antarctic Treaty Area;

[1] Preamble to Annex 7 of CCAMLR-XXVI.

- any harvesting and associated activities in the Convention Area are to be conducted in accordance with the provisions of the Convention and with the principles of conservation set out therein;

- discussions at the CCAMLR Symposium in Valdivia, Chile, from 5 to 8 April 2005 (e.g. Anon., 2005a, 2005b) were relevant to the Review;

- recent calls by the international community for those organisations with management and conservation responsibilities for fisheries and marine living resources to strengthen their efforts to attain their objectives and to implement adequate approaches to fisheries management;

- the 2006 UNGA Resolution 61/105 called for RFMOs and arrangements with management and conservation responsibilities for fisheries and marine living resources, to undertake urgently performance reviews.

4. It was further decided that the Review would be undertaken using the various criteria tabulated in Annex 7 of CCAMLR-XXVI and any other criteria that the RP should see fit to include. The Review should not only indicate CCAMLR's achievements as an institution, but also areas where improvements can be made.

3. Approach and Report Structure

5. A wide range of information, including international instruments, guidelines and standards were used by the RP as the basis for what constitutes effective fisheries management and what qualities best reflect CCAMLR's functions and purpose. The former included instruments such as the UNCLOS, UNFSA, FAO Compliance Agreement, FAO Code of Conduct and various FAO IPOAs. UNGA Resolution 61/105 was also deemed important, as were various initiatives aimed at evaluating RFMO or RFB performance and other fisheries arrangements (see Item 2.2 for further information). With respect to the latter, various ATS instruments (Antarctic Treaty, Madrid Protocol and CCAS) were considered along with related agreements such as ACAP.

6. The RP acknowledged that determining 'best practice' for any arrangement as complex as CCAMLR is likely to be an extremely complicated exercise at both a national and multilateral level. In effect, CCAMLR's management of Antarctic marine living resources as defined by Article I of the Convention is likely to be a function of a wide range of biological, legal, political and socio-economic considerations specific to the Convention Area.

7. The RP's work was undertaken with the expectation that CCAMLR's management, conservation and governance systems would collectively provide an indication of the organisation's ability to attain its overall objectives in executing its necessary functions. Implementation of the CAMLR Convention and its attached governance framework should

not only support effective prosecution of fisheries processes and management systems[2], but should also address the precautionary and ecosystem elements of Article II of the Convention[3].

8. The RP reviewed available information under each of the criteria set out in Appendix I. The outcomes were then used to define the RP's understanding of relevant facts before making any statement about performance. To facilitate the process, the CCAMLR Secretariat provided general background material and responded to factual requests from the RP when specific information was sought.

9. As set out in paragraph 6 of Annex 7, the RP met at the CCAMLR Headquarters in Hobart, Australia, from 23 to 27 June 2008 and elected Prof. Marcelo Kohen as its Chair. The RP also worked extensively on its report electronically. Previous to its meeting in Hobart, the RP requested CCAMLR Members to provide their views on the different criteria to be covered by the Performance Review. Only Australia submitted its views to the RP.

10. The report is structured into seven chapters; the first delineating the general context, and the others covering the six criteria areas defined by CCAMLR to be reviewed by the RP. In relation to the latter, the RP has reported on its views for each of the criteria determined in Annex 7 and has provided concrete recommendations. A summary of those recommendations is given above immediately following the Executive Summary.

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[2] Section 1.2 of the FAO *Technical Guidelines for Responsible Fisheries No. 4* provides a working definition of 'fisheries management' (www.fao.org/docrep/003/w4230e/w4230e00.htm). This is further developed in Figure 1 of Supplement 2 *The Ecosystem Approach to Fisheries*: (www.fao.org/docrep/005/Y4470E/y4470e09.htm#TopOfPage).

[3] These are essentially outlined in paragraphs 3(b) and (c) of Article II of the CAMLR Convention (as attached).

Chapter 1

The General Setting

1.1 Introduction

1. The Convention on the Conservation of Antarctic Marine Living Resources (CAMLR Convention) has its origins in the Antarctic Treaty System (ATS), and remains an integral part of that system.

2. The Antarctic Treaty, done in Washington on 1 December 1959, entered into force on 23 June 1961. It was a remarkably succinct international instrument which managed to solve complex legal and political issues. While it was not intended to establish rules for environmental protection, some of its provisions contribute incidentally to Antarctic environmental protection, including the restriction of activities for peaceful uses only, the prohibition of nuclear explosions and the disposal of radioactive waste. Article IX also allows Parties having consultative status to take additional measures regarding, *inter alia*, the preservation and conservation of living resources in Antarctica.

3. Regular Consultative Meetings of the Parties led to the adoption of the Agreed Measures for the Conservation of Antarctic Fauna and Flora in 1964 whose application, restricted to the continent and ice shelves, and without prejudice to high-seas rights under Article VI of the Treaty, prohibits interference with native mammals or birds without prior authorisation. In that same year, a pilot sealing expedition to Antarctica assessed the possibility of commercial exploitation of crabeater seals which inhabit the floating pack-ice. Recognising a potential threat to all Antarctic seal species, the Antarctic Treaty Consultative Parties (ATCPs) considered appropriate means of regulation and adopted a free-standing instrument at an international conference: the London Convention for the Conservation of Antarctic Seals (CCAS) on 11 February 1972.

4. The conclusion of CCAS, dealing with a high-seas resource, opened the way to address broader concerns over the unregulated nature of fisheries in Antarctic and Southern Ocean waters. Even by that stage, considerable inroads had been made into some stocks, most notably those of marbled rockcod (*Notothenia rossii*) in South Georgia waters which had experienced a take of over 400 000 tonnes of this species in the space of two seasons alone. At ATCM VIII (Oslo, Norway, 1975) the ATCPs stressed the objectives of 'protection, scientific study and rational use' of marine living resources. In 1976 SCAR developed a research program on the Biological Investigation of Marine Antarctic Systems and Stocks (BIOMASS) which, together with FAO reports, highlighted the crucial role of krill and the impact that potential overexploitation would have on the recovery of depleted seal and whale populations. The negotiations on what was to become CCAMLR began in Canberra, Australia, in February 1978 and concluded there in May 1980. The Convention was signed on 20 May 1980 and entered into force on 7 April 1982.

5. The adoption of CCAMLR was a major step-change in the development of the ATS. The primary objective of the Convention was the conservation of marine living resources, but with the understanding that conservation includes rational use. This emphasis on

conservation, but with harvesting seen as integral to that principle, remains a fundamental provision of CCAMLR, and one that continues to set it apart from the more traditional RFMOs with their focus on the management of target fish stocks.

6. Two provisions of CCAMLR, which were highly innovative at the time of its adoption, remain key to its current approach and have been adopted more recently by RFMOs – namely:

- the precautionary principle
- the ecosystem approach.

7. These are embodied in Article II of the Convention through the following principles of conservation:

(a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment;

(b) maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in subparagraph (a) above;

(c) prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.

8. Furthermore, the Convention's Article IX specifies that decisions relating to the management of marine living resources must be based on the best scientific evidence available.

9. The CCAMLR approach encompasses precaution, sustainability and restoration, and anticipates in its field the objectives of subsequent agreements addressing other global environmental concerns, such as ozone depletion, climate change, biological diversity and non-native species' introduction.

10. Consistent with the ecosystem approach was the decision that it would not be appropriate for the area of application of the Convention to mirror the spatial scope of the Antarctic Treaty (60°S). Rather, the Convention Area was extended northwards to approximate the oceanographic feature of the Antarctic Polar Front (Antarctic Convergence). This is regarded as the biogeographical boundary of many Antarctic marine species' assemblages.

11. The Convention applies to the Antarctic marine living resources of the area south of 60°S latitude and to the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence which forms part of the Antarctic ecosystem. Accordingly, the

Convention Area extends northward to include within its circum-Antarctic biogeographical boundary krill as the dominant figure of the food web and many Antarctic marine species' assemblages.

12. The CAMLR Convention Area encompasses approximately 10% of the global ocean area. However, the extended area of application of the CAMLR Convention included the territories of various sub-Antarctic island groups as well as their maritime jurisdictions. To address this particular issue, the Conference decided to include in its Final Act the text of the statement made by the Chairman on 19 May 1980 regarding the application of the Convention to the waters adjacent to Kerguelen and Crozet over which France has jurisdiction, and to waters adjacent to other islands within the area to which this Convention applies over which the existence of State sovereignty is recognised by all CPs.

13. This Statement provided the necessary political accommodation to enable the area of application of CCAMLR to be extended northwards to mirror (approximately) the bioregionalisation created by the Antarctic Polar Front (Antarctic Convergence). On the whole, the Chairman's Statement has served CCAMLR well.

14. However, there has been a tendency amongst some States to invoke the Chairman's Statement with increasing frequency to the point that any CM adopted by the Commission which might have implications for the maritime jurisdictions controlled by such States invariably attracts a formal reservation.

15. Whilst placing formal reservations on CMs is allowed under the Chairman's Statement, this continuing practice detracts from a range of important initiatives being pursued by CCAMLR and limits the ability of the Commission to achieve consistency in relation to the objectives set out in the Convention. Further, it reduces CCAMLR's ability to implement, across the area of application of the Convention, best-practice arrangements which manage stocks and ecosystems throughout their range.

16. The RP has cited a number of examples in Chapter 3 where use of the Chairman's Statement has a direct impact on the ability of the Commission successfully to pursue best practice ecosystem outcomes. This is a matter that CPs, individually and collectively, may wish to reflect on further.

1.2 The Contracting Parties

17. The negotiators of CCAMLR comprised the then ATCPs, and the inaugural Members of CCAMLR were those ATCPs that had signed and ratified the Convention, so bringing it into force. The original membership of eight States was extended by the addition of the other seven original signatory States that subsequently ratified the Convention and became Members of the Commission.

18. Since then, other States have acceded to the Convention, with a number of those States also gaining membership of the Commission. Article XXIX of the Convention also provides for regional economic integration organisations to accede. The European Community did so in 1982, and subsequently became a Member of the Commission alongside a number of EU Member States which were original signatories.

19. The Convention CPs fall into two categories. There are now a total of 25 Members of the Commission. Nine other States have acceded to the Convention but are not Members of the Commission (see list on final page of this report). In effect, the Members have responsibility for the executive functions of CCAMLR (including the adoption of CMs), as well as contributing to the budget of the organisation (principally for the running of the Secretariat). Acceding States (i.e. CPs which are not Members of the Commission), in contrast, are not party to decision-making, nor are they liable for subscription costs. Such States are invited as Observers to the annual meetings of CCAMLR. All CPs (both Members and Acceding States) are nevertheless bound by the obligations of relevant CMs.

1.3 The 'uniqueness' of CCAMLR

20. CCAMLR has often been referred to as 'something more than an RFMO'. Underpinning this statement has been CCAMLR's integral position within the ATS and strong legal linkages to the Antarctic Treaty. Furthermore, the overarching objective of the Convention has been the conservation of marine living resources. These two aspects have set CCAMLR apart from the more traditional RFMOs with their emphasis on the harvesting of commercial target species.

21. The strong conservation credentials of CCAMLR, along with the precautionary principle and ecosystem approach embodied within the Convention, have enabled CCAMLR, at times, to take the lead in developing management tools with a strong emphasis on conservation and sustainability – the trade-related CDS, and the mitigating measures for seabirds being but two examples of where CCAMLR has developed best practice in international fisheries management terms.

22. The distinction between CCAMLR and RFMOs has, however, lessened in recent years. The reasons for this are varied, but include:

(a) the changing emphasis within CCAMLR of the ratio of fishing to non-fishing Members of the Commission;

(b) the increasing numbers of CPs that have no traditional linkage with the ATS;

(c) the increasing trend for CCAMLR Members to be represented at Commission meetings by officials from Fisheries Ministries rather than from Ministries of Foreign Affairs (where responsibility for the ATS usually resides);

(d) that the ecosystem approach and/or the precautionary principle have also been adopted by some RFMOs.

23. At the time of the entry into force of CCAMLR, less than 40% of the Members were fishing States. That proportion has increased over time with, by 2005, almost 70% of Members fishing (see Table 1 below).

Table 1: The changing proportion of fishing to non-fishing Member States of CCAMLR.

Year	Total Members	No. of fishing Members	% Fishing States
1985	16	6	37
1995	22	9	41
2005	24	16	67

24. If CCAMLR is to maintain its 'uniqueness', then more pro-active measures would need to be taken by CCAMLR Members, both individually and collectively. There are, however, a number of issues (MPAs being but one), where CCAMLR could, if it so decided, once again demonstrate its international leadership in ocean management with a strong emphasis on conservation.

Chapter 2

Role of CCAMLR within the Antarctic Treaty System

2.1 Relationship with the Antarctic Treaty System

2.1.1 Extent to which CCAMLR effectively implements its obligations under Articles III and V of the Convention

1. The Convention includes several references to the Antarctic Treaty and the ATCM. Articles III and V of the Convention, as well as Article IV.1, provide the strongest legal linkages between the Convention and the Antarctic Treaty and give clear indication of the overarching primacy of the latter.

2. Two additional references within the text of the CAMLR Convention to the Antarctic Treaty/ATCM should also be highlighted. These are Articles IX.5 and XXIII.1. The former requires the Commission to '*take full account of any relevant measures or regulations established or recommended by the Consultative Meetings pursuant to Article IX of the Antarctic Treaty……in order that there shall be no inconsistency between the rights and obligations of a Contracting Party under such regulations or measures and conservation measures which may be adopted by the Commission*'. The latter states that '*The Commission and the Scientific Commission shall cooperate with the Antarctic Treaty Consultative Parties on matters falling within the competence of the latter*'.

3. These additional formal linkages between CCAMLR and the Antarctic Treaty are significant in respect of both the broader importance of cooperation between component parts of the ATS, but also with regard to the need to avoid real or potential inconsistencies of approach in relation to issues that span the terrestrial/marine boundary, including for example, spatial management and non-native species (e.g. through the use of imported bait, see paragraph 11 below).

4. The RP was of the view, however, that the obligations referred to in this particular criterion related not to CCAMLR *per se*, but rather to the CPs to the Convention and in particular to those Parties that were not CPs to the Treaty. In that respect it was not possible, in the RP's view, to assess in any quantifiable way, the extent of compliance by those Parties with Articles III, V (and IV.1) of the Convention.

Review Panel recommendations:

1. Given the increasing number of CPs, including States that have no traditional linkages to the Antarctic Treaty (or the ATS), the RP sees virtue in reinforcing the obligations of Articles III, V (and IV.1). This might be achieved by:

(a) requesting the Depositary to bring to the attention of an Acceding State, or a State seeking accession, these particular Articles;

(b) urging Acceding States also to consider acceding to the Antarctic Treaty;

(c) having available for Acceding States, and other States indicating an interest in CCAMLR, a Secretariat-prepared information pack on CCAMLR and its links to the Antarctic Treaty.

2. Such actions would likely reduce any disparity between the implementation of the provisions of the Antarctic Treaty and CCAMLR.

3. Furthermore, the RP saw virtue in reminding all CPs to CCAMLR of their obligations under the Antarctic Treaty.

2.2 Environmental protection

2.2.1 Extent to which CCAMLR has effectively observed measures, resolutions and decisions of the Antarctic Treaty Consultative Meetings related to the protection of Antarctic marine living resources

5. In the view of the RP, the relationship of CCAMLR to the Antarctic Treaty and its Protocol on Environmental Protection (the Environmental Protocol), as well as the conservation principles embedded in the Convention itself, marked a clear and significant distinction between CCAMLR and traditional RFMOs. This situation is perhaps embodied in Resolution 1 (2006) adopted at the 29th ATCM[4].

6. Here also, the RP regarded the observing of measures, decisions and resolutions of the ATCM as a matter that related to CPs rather than to CCAMLR as a collective institution. It was also noted that there had been no ATCM measures (recommendations prior to 1995) related specifically to the protection of Antarctic marine living resources adopted since 1977. That said, Article V.2 of the Convention, with its reference to the 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora, infers that elements of the Environmental Protocol, along with certain measures adopted by the ATCM, should indeed be observed by CPs.

7. In relation to the regulation and management of Antarctic marine living resources, the RP also noted that there remains a complexity of jurisdictions between various instruments, including not only CCAMLR, but also CCAS, ACAP and, where relevant, ATCM measures and the Environmental Protocol. In consequence, there remains a need for closer integration and understanding between these respective bodies so as to ensure a mutual understanding of their objectives, the appropriate application of management mechanisms, as well as adequate (and more efficient) data and information sharing.

8. These relationships might also be emphasised in the information pack recommended under Criterion 2.1.1.

[4] Final Report of ATCM XXIX (www.ats.aq/devAS/ats_meetings_meeting.aspx?lang=e).

Review Panel recommendations:

1. Although CCAMLR has actively sought to bring its CMs to the attention of the fishing industry operating within CCAMLR waters, it has not to date perceived the need to also provide information to fishers and operators on decisions adopted by the ATCM. Yet it is CPs, rather than the ATCM, that is best placed to effect that dialogue.

2. It is recommended, therefore, that CCAMLR should now take steps to fill that gap by ensuring that relevant ATCM measures and resolutions that have a bearing on, for example, seabirds or seals, are transmitted to the fishing industry, via its Members.

2.3 Conservation

2.3.1 Extent to which CCAMLR has taken into account the effects of harvesting, research, conservation and associated activities on the marine ecosystem, the known or potential effects of environmental changes in its management of Antarctic marine living resources, and the risks and effects of the introduction of alien species

9. The RP agreed that this criterion would largely be dealt with in Chapter 3 'Conservation and Management'.

10. However, with respect to the risks and impacts associated with the introduction of alien species, the RP noted that the matter has received only limited attention from CCAMLR or its Scientific Committee (notably through CM 26-01, and its provisions on poultry products). This, despite the fact that it is seen as a high priority within the ATCM's CEP, and is moreover referred to specifically in Article II.3(c) of the Convention.

11. The RP noted that certain fishing-related activities may represent a significant risk of introducing alien species through, for example, hull fouling, ballast water discharge and the use of substantial quantities of imported bait associated with the longline fisheries in CCAMLR waters.

Review Panel recommendations:

1. The RP recommended that clarity was required as to where the issue of non-native species in relation to the Antarctic marine environment should be best dealt with institutionally, and that the forthcoming workshop between the CEP and SC-CAMLR represented an opportunity to determine this.

2. Furthermore, there was a need to ensure that there was alignment of policies in respect of non-native species between CCAMLR and the CEP/ATCM. Otherwise, there remained the risk that the actions of one body within the ATS could be undermined by the other.

2.4 Protected areas

2.4.1 Effectiveness of CCAMLR's relationship with the ATCM in considering proposals for ASPAs and ASMAs with marine components and providing advice to the ATCM

12. The RP recalled ATCM Decision 9 (2005)[5] which set out the criteria for determining when management plans for protected and managed areas with a marine component needed to be sent to CCAMLR for its approval in accordance with the provisions of Article 6(2) of Annex V to the Environmental Protocol. It was noted by the RP that the administrative arrangements between the ATCM and CCAMLR now appeared to be working well to allow such management plans to be processed in a timely manner.

13. Nevertheless, noting the discussions that took place in SC-CAMLR-XXVI[6], the RP noted that different views and understanding of this process in the ATCM and in CCAMLR appear to remain, and that these should be clarified.

14. The RP also noted with some concern, that differing views on the very principle of designating MPAs (in the form of ASPAs and ASMAs) continue to be expressed by some Parties that are both Members of CCAMLR as well as ATCPs, even though that principle of designating marine areas had been agreed by consensus through adoption of the Environmental Protocol (and its subsequent Annex V[7]). That Annex has now 'been effective' for a number of years, having been approved by all ATCPs under the procedures of Article IX of the Antarctic Treaty.

2.4.2 What management and administrative tools are available to build up a system of protected areas?

15. While the improvements in the practical interaction between the ATCM and CCAMLR were to be welcomed, the RP noted that CCAMLR has an opportunity to take on a more proactive role with respect to the designation of MPAs. Under Article 5 of Annex V to the Environmental Protocol, CCAMLR is able to propose an area (including a marine area) for designation as either an ASPA or an ASMA. Furthermore, Article 9.2(g) of the Convention also provides for areas to be closed to fishing for, *inter alia*, conservation purposes. Whilst CCAMLR has taken, and continues to take, a proactive approach to regulating the impact of fishing activity (see paragraph 19 below), it has taken very little direct action with respect to the formal establishment of long-term protected or managed areas either in their own right or pursuant to considerations under the Environmental Protocol. Instead, it has simply reacted to protected area proposals coming to it from the ATCM.

16. Yet the primary responsibility and expertise within the ATS for designating marine areas would appear to lie with CCAMLR.

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5 Final Report of ATCM XXVIII (www.ats.aq/devAS/ats_meetings_meeting.aspx?lang=e).

6 SC-CAMLR-XXVI, paragraphs 3.61 to 3.66.

7 Annex V to the Protocol on Environmental Protection to the Antarctic Treaty: Area Protection and Management. Adopted by means of ATCM Recommendation XVI-10 (1991): (www.ats.aq/devAS/ats_meetings_meeting.aspx?lang=e).

2.4.3 Extent to which CCAMLR has made progress to respond to the WSSD target to establish a representative network of marine protected areas by 2012

17. The RP recognised the significant progress that CCAMLR has made towards an established bioregionalisation of the Southern Ocean, and the urgency with which the Commission had previously encouraged this work to be undertaken[8]. The RP noted the Commission's endorsement of the Scientific Committee's proposed future work on bioregionalisation[9]. However, the RP considered that further development of this initiative, particularly with regard to the application of the bioregionalisation tool for the establishment of new MPAs, appeared to have lost a degree of momentum. In consequence, the timetable for conducting the planned work was now unclear.

18. The RP also concurred with the views expressed in paragraph 7.17 of the Report of CCAMLR-XXVI, that the final element of the terms of reference for the Bioregionalisation Workshop, namely the identification of areas for protection, has yet to be addressed.

19. The RP recognised, however, that there are already extensive areas in CCAMLR waters that are currently subject to a range of measures and controls[10]. Whilst not specifically designed as such, certain of these areas could be regarded as having an equivalency to a Category VI MPA under the IUCN protected area categories. It was also noted that CCAMLR has adopted at least 16 CMs that prohibit fishing in some way and that CM 22-06 places certain restrictions on bottom fishing in order to minimise impacts on VMEs. In this regard, the RP noted that within the CCAMLR waters, significant areas are already subject to controls and limitations on finfish fishing, including outright prohibition on all finfish fishing in Subareas 48.1 and 48.2 (Antarctic Peninsula and South Orkney Islands respectively); a situation that is probably unique in a global context for such extensive areas.

20. Whilst this situation was welcomed by the RP, it was noted that none of the areas subject to such regulation and controls could be considered as being, or had been specifically designed as, an IUCN Category I MPA.

21. With respect to the WSSD target[11], the RP considered that significant and urgent action would be required by CCAMLR for this objective to be met. Taking a proactive approach towards this objective would be consistent with CCAMLR's 'unique' position as a conservation-based organisation with a broader remit than an RFMO. Notwithstanding the challenges related to surveillance and enforcement that might accompany the designation of MPAs, the RP was of the view that CCAMLR has the opportunity to provide leadership amongst RFMOs in the design and establishment of new MPAs.

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8 CCAMLR-XXIV, paragraph 4.18.

9 CCAMLR-XXVI, paragraph 7.18.

10 See, for example, SC-CAMLR-XXV/BG/19.

11 The 2002 WSSD Plan of Implementation highlights the need to 'develop and facilitate … the establishment of marine protected areas consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use and watershed planning and the integration of marine and coastal areas management into key sectors' (www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf).

Review Panel recommendations:

1. The RP recommended that CCAMLR takes steps towards the designation of MPAs, including high-seas areas within CCAMLR waters, as a matter of urgency.

2. To that end, CCAMLR should:

(a) consider how best to utilise the provisions of Annex V to the Protocol to propose marine areas as either ASMAs or ASPAs, as well as examining the option of using the provisions of Article 9.2(g) of the Convention more widely;

(b) develop a clear, prioritised program (based on the future work identified in the Commission's 2007 Report (CCAMLR-XXVI, paragraph 7.18)) for the timely development of a network of MPAs, and indicating as such to the Scientific Committee and its WG-EMM; this to ensure their active input to such a program.

2.5 Marine pollution

2.5.1 Effectiveness of CCAMLR to implement measures to provide for protection of the Southern Ocean and Antarctic environment from the impacts of vessels engaged in harvesting, research, conservation and associated activities, including measures relating to marine pollution and vessel safety

22. Given the extreme and hostile environment in which some CCAMLR fisheries operate (e.g. at night and in winter conditions) and that a number of vessels have suffered significant damage or foundered whilst operating in CCAMLR waters, it is wholly appropriate for CCAMLR to give due attention to the broader issues of vessel safety standards and marine pollution management.

23. The RP noted the existing provisions in place under CCAMLR, including, for example, CCAMLR's Resolution 20/XXII on ice strengthening of fishing vessels and CMs 10-03 and 26-01. These are ahead of any such similar decisions yet to be taken by the ATCM. It was also noted that data on marine debris continued to be collected by some Parties, through beach litter surveys. These had been instrumental in leading to the prohibition of the use of packaging bands under CM 26-01.

24. Nevertheless, it was recognised that CCAMLR needs to be alert to discussions within the ATCM (e.g. in relation to prevention of marine pollution provisions of Annex IV) and the IMO on such issues as the control of ballast water discharge and the Polar Shipping Code, with a possible view to extending such provisions to fishing vessels. Further dialogue and cooperation between the ATCM and CPs and the IMO was required, as well as input from the fishing industry.

25. CCAMLR has in place requirements for observers to report information on fishing gear loss as well as garbage disposal by fishing vessels at sea[12], but in recent years there appears to have been a lapse in reporting under these requirements.

Review Panel recommendations:

1. The RP encouraged data on discarded and lost fishing gear to be collected and reported on more routinely.

2. Allied to this there was the need for CCAMLR to consider providing to the fishing industry details of the prevention of marine pollution provisions of Annex IV to the Environmental Protocol.

General comments

26. On the broader issue of the relationship between CCAMLR and the ATCM on environmental protection issues related to marine living resources, it was evident that more active engagement was needed. For example, the formal dialogue between the two institutions, delivered by their respective Observers, is usually relegated to low-priority agenda items. It was noted that they rarely generate substantive dialogue or discussion.

Review Panel recommendations:

3. The RP identified opportunities whereby the linkages between the ATCM and CCAMLR might be strengthened. These included:

(a) The forthcoming Joint SC-CAMLR–CEP Workshop[13] planned for 2009. This will provide an ideal opportunity to examine ways of engaging in practical cooperation in areas of overlapping interests and competencies.

(b) At CEP XI in 2008 the CCAMLR Observer gave a presentation on the work of CCAMLR. This was regarded as highly valuable. A reciprocal CEP presentation to SC-CAMLR was encouraged, with a view to institutionalising reciprocal presentations at periodic intervals. Such presentations would contribute towards a clearer understanding of the respective objectives and work programs between ATCM and CCAMLR representatives.

[12] Paragraph 2(xii) of the Functions and Tasks of International Scientific Observers on Board Vessels Engaged in Scientific Research or Harvesting of Marine Living Resources; Annex 1 to the CCAMLR Scheme of International Scientific Observation (www.ccamlr.org/pu/e/e_pubs/bd/toc.htm).

[13] SC-CAMLR-XXVI, paragraphs 10.8 and 10.9. See also CEP XI, paragraph 339: (www.ats.aq/documents/ATCM31/rp/atcm31_rp003_rev4_e.pdf).

Chapter 3

Conservation and Management

3.1 Status of living resources

3.1.1 Status of Antarctic marine living resources under the purview of CCAMLR

Background

1. Under this criterion and the next (i.e. 3.1.1 and 3.1.2), the RP considered only those species for which a CM, such as a targeted catch or retained by-catch limit, is specified to manage fishery resources. A distinction is made between retained by-catch, which is of economic value and may become the target of directed fishing in the future, and non-retained by-catch which is of no current economic value. Retained by-catch is addressed through Criteria 3.1.1 and 3.1.2 while non-retained by-catch is addressed through Criteria 3.1.3 and 3.1.4. The species or species groups addressed through Criteria 3.1.1 and 3.1.2 are the Antarctic krill (*Euphausia superba*), the mackerel icefish (*Champsocephalus gunnari*), other species of icefish (*Channichthys rhinoceratus, Chaenocephalus aceratus* and *Pseudochaenichthys georgianus)*, two species of toothfish (*Dissostichus eleginoides* and *D. mawsoni*), various rockfish (*Notothenia rossii*, *Gobionotothen gibberifrons, Lepidonotothen squamifrons* and *Patagonotothen guntheri*), whiptails (*Macrourus* spp.), crabs and squid.

2. The RP used Article II of the CAMLR Convention as the standard for assessing the status of resources. In summary, this is a requirement to:

(a) maintain fished resources at population sizes that provide stable recruitment and, for this purpose, also high productivity;

(b) allow the recovery of depleted stocks;

(c) maintain ecological relationships between harvested, dependent and related species;

(d) prevent or minimise the risk of changes that are not potentially reversible in 2–3 decades.

These CCAMLR requirements are complemented by more recent guidance on the conduct of responsible and sustainably managed fisheries; specifically the FAO Code of Conduct for Responsible Fisheries (United Nations, 1998), the FAO Ecosystem Approach to Fisheries (FAO, 2003) and best practices for RFMOs (Lodge et al., 2007).

3. The history of fishing in the Convention Area and the CCAMLR approach to fishery management are summarised in Constable et al. (2000), Kock et al. (2007) and Miller (2007).

The various rockfish and icefish in Subareas 48.1 and 48.2 and some species within Subarea 48.3 and Division 58.5.1 (Kerguelen) provided large catches and were heavily

overfished prior to the establishment of CCAMLR (Everson, 1978). Under CCAMLR these are regarded as 'lapsed fisheries'. Some limited assessments of stock status for those species have been undertaken. The assessments confirmed that the stocks are severely depleted and supported the identification of CMs, including that no directed fishing is permitted and a retained by-catch may be taken only to a specified limit. There is some monitoring of these stocks through commercial catch rates and occasional scientific surveys but very little ongoing stock assessment or modelling. There are no indications of substantial recovery and the stocks remain extremely depleted, although some aggregations have been detected in some of the areas previously heavily targeted and fished.

Directed fisheries

4. There are currently directed fisheries permitted for krill, mackerel icefish, toothfish, squid and crabs. These fishery resources have been subject to assessments at the spatial scale of the species or stock at one of two levels of detail.

Each directed fishery, depending on its status, is assigned to one of a number of categories listed below.

New, exploratory and developing fisheries

Background

5. For new, exploratory or developing fisheries there is an assessment based on preliminary information and/or information from similar stocks that is sufficient to establish a precautionary catch limit but that is not necessarily sufficient to estimate stock size and stock status directly. So while there is not necessarily a direct estimate of stock status, there is a basis to infer that the stock would be at very low risk of depletion from fishing. This is the situation for squid and crabs for all areas in which they are permitted to be fished, for krill in all areas in which they are fished, and for toothfish in some of the areas in which they are fished. The crab fishery is developmental in that it operates under an experimental harvest regime and is supported by a preliminary assessment of the resource (rather than a formal and quantitative stock assessment), but it is treated as an established fishery in the wording of the relevant CMs.

Summary consideration of fisheries in this category

Toothfish

6. Some toothfish fisheries are still classified as new or exploratory. Although they have been operating for many years, they are subject to sophisticated stock assessments, and stocks have been fished significantly and are approaching the target level of depletion (e.g. in Subareas 88.1 and 88.2).

7. Arbitrary but low catch limits of 250 and 300 tonnes were set from 2003 onwards for toothfish in Divisions 58.4.3a and 58.4.3b, in line with advice from the Scientific Committee. However, due to very high IUU catches, the conservative catch limit was exceeded by almost an order of magnitude in Division 58.4.3b (e.g. Table 2 below).

Table 2: Toothfish *(Dissostichus* spp.) catch history in Division 58.4.3b (BANZARE Bank).

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2003/04	6	1	300	1	6	7	246	253
2004/05	5	4	300	1	296	297	1015	1312
2005/06	5	4	300	44	317	361	1903	2264
2006/07	6	4	300	75	178	253	2293	2546

8. This example highlights several problems associated with the development of new fisheries and the general problem of IUU fishing. As new fishery resources are identified, that knowledge is usually communicated through the industry quickly, which in turn can result in significant catches before adequate information is available to develop and implement a reasoned management plan for sustainable exploitation. The rapid expansion of IUU fishing can quickly exceed the precautionary catch limits that are intended to provide an opportunity for sustainable fishery development, undermine the conservation efforts of CCAMLR, limit or eliminate the scope for a sustainable fishery, and economically damage the legal fisheries.

Krill

9. In the case of krill, estimates of the unfished stock size have been determined from acoustic surveys and fishery information. These estimates have been used to determine a precautionary catch limit. Calculation of this limit takes account of the importance of krill as a prey species by requiring a relatively high level of krill escapement from the fishery (i.e. 75% of the krill that would be available in the absence of a fishery) that is then available for dependent predators. The catch limit and annual catch of krill is small relative to the estimated population size and sustainable yield. So again, while there is not a formal stock assessment of stock status or a formal management strategy to vary catches and their spatial distribution, there are good grounds for expecting that the fishery to date has not caused significant depletion of the krill stock.

Squid and crabs

10. The new or exploratory fisheries for squid and crabs operate under a precautionary catch limit but fishing activity and catches have been low.

Established fisheries

11. This category relates to fisheries that have been in progress for a number of years and for which assessments are available that are sufficient to directly estimate stock size, stock status and the catches consistent with achieving management objectives. Mackerel icefish and some of the toothfish fisheries are treated this way and for these fisheries, stock conditions and assessments are typically reviewed and revised annually. Assessments take account of all sources of fishing mortality, including estimated IUU catches. The status of

stocks varies. Some are approaching the intended level of stock reduction (e.g. several of the toothfish stocks, including in Area 88). Some are fluctuating as intended under current management procedures (e.g. mackerel icefish stocks).

Lapsed and closed fisheries

12. This category relates to two types of fishery. The first is fisheries in which the target species were severely depleted before the advent of CCAMLR and which have been closed to directed fishing to allow recovery. An example is marbled rockcod in all subareas where it was found and icefish in Subareas 48.1 and 48.2. The second is fisheries that have either been closed for economic reasons or because of some form of overfishing. Examples are the lack of commercial interest in fishing for lantern fish (*Electrona carlsbergi*) and the overfishing of toothfish in, for example, in Subareas 58.6 and 58.7 and Division 58.5.1.

By-catch

13. In regions where retained by-catch is considered likely to be important, relevant catch limits are set at levels that are thought to pose a low risk of over-depletion. These limits are determined on either a general basis (e.g. preliminary or literature-based information on stock size and productivity) or on more specific information and analysis of the stock.

14. Specifically derived by-catch limits are in place in those areas where significant by-catch is expected. Directed fishing is required to stop in an area if the by-catch limit for any species or species group is reached, and vessels are required to move their fishing location by at least 5 n miles if by-catch rates exceed set limits. These by-catch conditions apply to all new or exploratory fisheries, to established icefish fisheries and to demersal fisheries. In addition, the catch limits for some species are further subdivided spatially. While for most by-catch species there is no formal assessment of the status of the resource populations, the combination of the assessments that are available, the low levels of by-catch, and the management measures that are in place provide a good basis to expect that the by-catch species are not significantly depleted by fishing.

15. Seabirds and seals potentially are affected directly by fishing operations through being caught in trawls or longlines. Specific CMs have been adopted to take account of such situations with the result that in the regulated fisheries by-catch of seabirds and mammals is now very low. Ecosystem effects related to seabirds and seals are considered under Criterion 3.1.3.

Review Panel conclusions:

16. The status of the target species under CCAMLR fishery management control (i.e. krill, toothfish and icefish), as well as the retained by-catch species for the currently active fisheries, is consistent with Article II of the Convention and current good practice for responsible and sustainable fisheries. CCAMLR has actively developed and applied management measures to achieve this outcome, with considerable investment of scientific and management effort. CCAMLR is particularly advanced in its development and use of methods to manage prey species so as to protect dependent predators, in assessing and limiting fishery impacts on by-catch species, and in providing a structured and precautionary process for the orderly development of new or exploratory fisheries.

17. Notwithstanding this success, there are several challenges and weaknesses apparent:

(a) Recovery of depleted species. There are several severely depleted stocks, some of which have been depleted for a considerable period of time, without recovery, without a specifically articulated recovery strategy and without regular assessment and performance reporting.

(b) Adequacy of the management of new or exploratory fisheries. Some target species have become depleted recently despite the existing methods and measures for assessing and managing new or exploratory fisheries. IUU has been implicated in this failure in some occasions, but also there may be some weakness in the methods for assessing and managing new or exploratory fisheries. In particular, the adequacy and consistency of the methods to set and incrementally change catch levels as a fishery develops may be a contributing factor, and this includes the adequacy of the information required as a fishery develops.

(c) Consistent categorisation of fisheries and their assessment/management. CCAMLR has a categorisation of fisheries, including new or exploratory fisheries and 'established' directed fisheries, but these categories and approaches are not applied consistently. Some new or exploratory fisheries are quite well established in terms of the information and analysis available. Some developing fisheries, and in particular the krill fishery, are not subject to the same information and management requirements as are applied to developing finfish fisheries although the underlying management principles relating to orderly development of fisheries are the same.

(d) Systematic monitoring and assessment of resources, including retained by-catch. The status of many species and groups are not assessed and others are only occasionally assessed. Some species are considered and managed as an aggregate group, such as skates, rays or whiptails, despite it being likely that some species are more vulnerable than others and the risk of sequential depletion of species within the group. Much about the status of resources is inferred from precaution in the management measures and 'in principle argument' rather than from measurement. While this may be adequate when exploitation is relatively light and limited through the Convention Area and ecosystem, it is likely to either overly constrain fishery development or result in unrecognised risks and impacts as interest in fishing in the Convention Area grows. A recommendation to address this is provided under Criterion 3.1.2.

Review Panel recommendations:

1. An explicit recovery plan should be established for stocks that are depleted relative to the requirements of Article II. This should include recovery targets and time frames, management actions, and a program to monitor, assess and regularly report on progress.

2. The experience with new or exploratory finfish fisheries should be reviewed. This should examine the adequacy of the information available when the fishery

is recognised and initial catch limits are established, the monitoring requirements for each stage in development, assessment methods for each stage in development, and expected management measures for each stage in development. Changes should be made to the procedures related to new or exploratory fisheries to address any weaknesses that are found by this Review.

3. The categories of fisheries in CCAMLR (e.g. lapsed fisheries, new or exploratory fisheries, established fisheries) should be more fully defined and consistently applied. This includes the criteria, the information and monitoring requirements, and the elements of the policy, the default management regime that applies to each category, and the triggers by which a fishery would be considered to have moved from one category to another. Elements of the current management requirements for new or exploratory fisheries should be considered for application to established fisheries, and in particular, gear and the use of general and default limits on by-catch. These categories and requirements should be applied to all fisheries, including the krill fishery and by-catch stocks in an established fishery that are being developed to become new target species.

3.1.2 Trends in the status of marine living resources under the purview of CCAMLR

18. As described for Criterion 3.1.1, information on the status and trends for finfish species that are the current targets of directed fisheries, that is toothfish and mackerel icefish, are regularly assessed and reported. These fisheries for different target species are at different stages of development, therefore their trends in stock status are different.

Finfish

Toothfish

- Most toothfish stocks are in the process of decreasing to the planned long-term biomass, or have recently reached approximately that level. Some stocks appear to have been depleted further than the intended target (i.e. in Divisions 58.4.3b and 58.4.4) and catch restrictions are in place. Some stocks are subject to new or exploratory fisheries and therefore are expected to be at the early stages of the stock decrease. Stock trends in some of the new or exploratory fisheries cannot yet be quantitatively assessed, but the precautionary catch limits in place are expected to ensure that stock reduction will not be excessive at the time when sufficient information is available to support quantitative stock assessment.

- IUU fishing has been recorded in most of the fishing areas, and in some areas the IUU catch has been much greater than the reported catch.

- The challenge now is to ensure that the intended future biomass trajectories are achieved, and specifically to prevent excessive depletion either by ‘over-shooting’ the target in the developing fisheries or failing to maintain stocks at the target in the more developed fisheries.

Mackerel icefish

- The mackerel icefish stocks supporting directed fisheries are fully exploited. Recent trends are dominated by fluctuations in year-class strength.

- No IUU fishing has been thought to have taken place in these fisheries.

- The challenge now is to maintain the stocks. Some stocks have been depleted further than intended (i.e. icefish in Subareas 48.1 and 48.2) and in consequence these are closed to directed fishing.

19. The overfished finfish stocks (i.e. the various rockfish, mackerel icefish in Subareas 48.1 and 48.2, and the other two species of icefish in Area 48) are not closely monitored or assessed. There is information from by-catch catch rates to monitor trends but these can be difficult to interpret uniquely because of the operational changes in the fishery, such as targeting behaviour. There are occasional scientific surveys using similar methods (e.g. the trawl surveys conducted by some CCAMLR Members) in some areas or subareas, and these provide more direct observations on stock status. From this information the overfished stocks do not appear to be recovering despite being protected from directed fishing for long periods of time (e.g. 18 years of protection for icefish in Subareas 48.1 and 48.2 and 20 years of protection for marbled rockcod wherever it occurs in the Convention Area).

20. Success in meeting current and future challenges in relation to stock trends for targeted finfish will primarily depend on:

(a) the adequacy of the information available to assess accurately the stocks (for both established fisheries and exploratory fisheries);

(b) the adequacy of control of catches (IUU and non-IUU) in the Convention Area;

(c) the extent to which there is adequate overall management of fisheries on stocks that are shared with fisheries beyond the Convention Area.

Squid and crabs

21. The new or exploratory fisheries for squid and crabs operate under a precautionary catch limit but fishing activity and catches have been low. While there are no formal assessments of stock trends, there is no reason to expect that there has been anything more than minor effects on these stocks.

Krill

22. There have been four large-scale acoustic surveys to measure krill abundance. The first survey, FIBEX, predated CCAMLR and the survey results were used to estimate potential yield and precautionary catch limits in Area 48 (Hampton, 1983; Anon., 1986; Trathan et al., 1992, 1995). The second survey, the CCAMLR-2000 Survey, was designed specifically to estimate krill abundance leading to revision of the precautionary catch limit in Subareas 48.1, 48.2 and 48.3 (Hewitt et al., 2002; Watkins et al., 2004). The third and fourth

surveys provided the basis for estimating precautionary catch limits in Divisions 58.4.1 and 58.4.2 (WG-EMM-96/28, WG-EMM-06/16). The results from these surveys have been used by CCAMLR to develop CMs for krill.

23. In addition to these large-scale surveys, there are several programs in place to investigate the small-scale seasonal distribution and abundance of krill in Subareas 48.1 and 48.3, and also Division 58.4.2. These surveys show considerable year-to-year variability in the abundance of krill as well as variability in the seasonal abundance and spatial distribution. Annual variability in localised areas can be strongly affected by oceanographic conditions and the movement/advection of krill into and out of the local area. There are indications of fluctuations in recruitment strength, related to oceanographic conditions, which are sufficient to cause multi-year fluctuations in the overall stock size and size/sex composition. These surveys are an important component of CEMP, a program discussed under Criterion 3.1.3.

24. The overall catch of krill to date has been very low in comparison to the estimated abundance and productivity, therefore changes seen through time are not regarded as having been caused by fishing, although local depletion in restricted areas remains a possibility (see Criterion 3.1.3). Consequently, the surveys are mainly used to refine estimates of the unexploited biomass of krill in relatively large areas and to set precautionary catch limits.

25. For economic reasons the krill fishery has been relatively small in recent years (about 100 000 tonnes catch per year), but following several technological and market developments, particularly in aquaculture feed, it is expected to increase significantly in the near future. The current catch limit is 1.512 million tonnes across all areas. Agreement within CCAMLR on how to define and allocate catches to SSMUs is planned, and when agreement is reached this catch limit can be increased to 6.555 million tonnes. This more than four-fold increase in the precautionary catch limit provides a major incentive to reach agreement on the application of SSMUs in the krill fishery.

26. Arising from recent developments in the use of krill as feed in aquaculture, there is a clear prospect of quite rapid increases in fishing activity and catch of krill, and consequently for a change in the krill stock status. The fishery can be expected to focus on particular areas, therefore, this change in krill stock status may not be spatially uniform – it may include the possibility of local depletions. Future trends in the status of the krill stocks will depend on:

(a) the adequacy of the information to identify appropriate catch limits at appropriate space scales;

(b) the ability to ensure the intended catch limits are not exceeded;

(c) the ability to monitor the krill stocks;

(d) the ability to monitor relevant dependent or related species and determine whether the trends in the status of these species are occurring as intended and/or acceptably.

These tasks are likely to be made more difficult by the confounding effects of fishing, natural variability and climate change. Monitoring information from periods of low krill catch will be particularly important and helpful in this context.

By-catch

27. For many of the retained by-catch species there is very little or no trend information available from any of the fisheries. Most of the trend information that is available comes from fishery catch rates which are difficult to interpret uniquely for by-catch species.

28. For several retained by-catch groups recording is difficult at the species level, particularly for commercial catch reporting but in some cases even for scientific observers, because of unresolved taxonomic definitions and/or the similarity of species. For most retained by-catch species in those fisheries for which international scientific observation is mandatory, it is reasonable to assume that whatever trends are occurring are mostly not due to fishing. This is because the catch limits and controls on by-catch result in low catches compared to the probable biomass and productivity of the species. However, in many cases this is essentially an assumption.

29. The information from research surveys is mostly sporadic, is collected with varying sampling equipment, is not broadly available or summarised to provide trends, and in many instances is not adequate to determine trends quantitatively.

30. Arising from these considerations, there is very limited ability to determine trends objectively in stock status and consequently whether the precautionary catch levels are protecting the by-catch species as intended. Furthermore, there is very limited ability to identify the causes of any trends, and to separate the effects of fishing from those of other human activities (e.g. climate change) and natural variability. This limits the ability to determine the kind and scale of appropriate management actions, including precautionary actions.

Review Panel conclusions:

31. Trends in the status of marine living resources under the purview of CCAMLR, and the availability of information to determine these trends, varies among the different living resource stocks and species.

32. The stock status trends for the current target species in directed fisheries, both established and developing fisheries, are broadly consistent with Article II of the Convention and international best practice. To ensure that these trends continue in future, there are issues with IUU fishing and with the adequacy of information for managing both established and developing fisheries that require further and ongoing attention. There is need for particular attention to be directed toward the adequacy of monitoring and management of the krill fishery to ensure that its expected development is consistent with Article II, both in relation to the target species and dependent and related species.

33. The stock status trends for depleted stocks are not adequate. These stocks have not recovered under CCAMLR management; there is not a clear strategy for achieving rebuilding or for monitoring and reporting on progress. A recommendation to address this is provided under Criterion 3.1.1.

34. Monitoring of the status of the by-catch species is highly variable and for many species status is not adequately monitored and reported. This is arguably acceptable in situations where the quantity of by-catch is clearly very low in relation to likely stock size and

productivity. But there are many by-catch species for which this is not necessarily the case currently, and development of the krill fishery and climate change are expected to result in changes to productivity and ecosystem interactions in coming years. There is currently very limited ability to detect departures from management intent in relation to by-catch species.

Review Panel recommendations:

1. In order to increase the control of IUU fishing, CCAMLR should (i) introduce mechanisms to ensure that all CPs comply with the provisions of all CCAMLR CMs (ii) use all avenues, consistent with international law, to ensure that NCPs also comply with such measures, and (iii) consider developing further mechanisms for enhanced surveillance and enforcement.

2. Design and agree a strategy for krill fishery development (e.g. timing, spatial scale and location, catch limits) and fishery monitoring that explicitly (i) ensures that adequate information is available to support orderly development of the fishery while addressing Article II, and (ii) allows separation of the effects of fishing from climate change and natural variability. Further, and in an integrated manner, the monitoring of key dependent predators should be explicitly designed to (i) aid separation of the effects of fishing from climate change and natural variability, and (ii) explicitly link to the ongoing management decisions for krill fishery development. Consideration should be given to the use of indicators of predator status in the strategy for krill fishery development.

3. Options should be examined to develop and implement a more comprehensive and consistent monitoring program for harvested marine living resources under the purview of CCAMLR. This should aim to allow for the effective monitoring of the status of the resources, and the status should be centrally compiled and available for CCAMLR decision-making. It may be differentially targeted on species/areas of perceived highest risk, but it should endeavour to provide wide ecosystem coverage and relate to management actions that CCAMLR could take. The monitoring program should consider the need to differentiate the effects of fishing from the effects of other human activities and from natural variability (see also recommendation 6 under Criterion 3.1.3).

3.1.3 Status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted Antarctic marine living resources

35. The RP considered that this and the next criterion referred to non-retained by-catch species (i.e. species that are caught or directly impacted by fishing operations, but that are not part of the retained commercial fishery catch) and dependent species that are not necessarily caught but that could be affected by fishing through ecosystem or other indirect interactions. In this context the non-retained by-catch includes seabirds, seals, skates, rays, sharks, a large number of other fish species and a large number of invertebrate species (ranging from sessile and habitat-forming species attached to the seabed through to pelagic species). Dependent

species include marine mammals, such as various whales and seals. However many of the by-catch species of seabirds and fish may also be dependent species if they are affected by fishing through ecosystem interactions (e.g. if they are dependent for food on species that are reduced in abundance by fishing).

3.1.3.1 Direct effects of fishing

36. Limits to by-catch of fish, including skates and rays and other species such as crabs, are set for directed fishing in the established fisheries in Subarea 48.3 and Division 58.5.2. By-catch limits are also set for all new or exploratory fisheries, wherever they may occur. The limits for by-catch are set at levels that are thought to pose a low risk of over-depletion. In Division 58.5.2 there is a by-catch limit for skates and rays as a combined category, and there is a default limit of 50 tonnes per year for any species not subject to other CMs. Although the aims of the by-catch components of CMs are essentially the same for all established fisheries, their presentation in the CMs is not consistent.

37. For new or exploratory fisheries there is a by-catch limit in each of the management areas for skates and rays, and a by-catch limit of 20 tonnes for all other species combined that are not subject to other CMs. Directed fishing in Division 58.5.2, in the toothfish fishery in Subarea 48.3 and in all new or exploratory fisheries, is required to stop in the area if the overall by-catch limit for any species or species group is reached, and vessels are required to move their fishing location by at least 5 n miles if specified catch rates of by-catch species are exceeded at a given location. These catch limits are further subdivided spatially, to SSRUs, for some species and areas.

38. For most by-catch species there is no formal assessment of the status of the resource populations, although some preliminary assessments are available for some species (including skates and rays) and areas.

39. Directed fishing for lanternfish is no longer permitted in the area where it is abundant (Subarea 48.3) on the basis of its likely importance as prey (forage) species in the food web and there being little commercial interest in developing or continuing a fishery. There is no formal assessment of the status of the stock, but this management measure and the low by-catch levels that are recorded make it very likely that fishing has resulted in minimal and insignificant reduction in stock size.

40. Directed fishing for sharks is not permitted throughout the Convention Area as a precautionary measure. Shark by-catch is required to be released alive, if possible, and the use of deep-water gillnets is prohibited. However, some IUU fishing vessels use gillnets and more generally the IUU catch of sharks is unknown. A recent review by the IUCN Shark Specialist Group on behalf of the CMS, classified a sleeper shark (*Somniosus antarcticus*) as Data Deficient (CMS, 2007). The risk posed by the by-catch of some potentially vulnerable shark species (e.g. sleeper sharks, *Somniosus* spp.) has been specifically examined by CCAMLR and found to be low. The probable low levels of the shark catch, combined with the specific examination of species that might be at risk from even low catches, provides a good basis to expect that the shark stocks are not, and historically have not been, significantly depleted by fishing.

41. Any new fisheries after 2008 in the Convention Area (except for areas under the national jurisdiction of France and South Africa) may not use fishing methods that interact with the seabed and VMEs, including seamounts, hydrothermal vents, cold-water corals and sponge fields, until the proposed fishing has been reviewed by CCAMLR's Scientific Committee. The review by the Scientific Committee addresses the potential adverse impacts on seabed organisms and, if these cannot be acceptably mitigated, the fishing activity is not permitted. When such fishing is permitted, a data collection plan is developed and observers are required so as to support and verify collection of these data.

42. The fishery interactions with seabirds and mammals, including deaths and injury, are monitored, analysed and reported by CCAMLR annually. Mitigation measures are required throughout the CCAMLR CMs for all fisheries. For longline fishing these include minimum line sink rates, night setting and minimal lighting, no offal discharge while setting and use of streamer lines while setting. For trawl fishing these include the elimination of net-monitoring cables, minimal lighting, no discharge of offal during setting or hauling, removal of fish tangled in the net, and minimising the time the net is at or near the surface. There has been low and decreasing interaction between seabirds and fishing by CCAMLR Members through recent years, and there was no incidental albatross mortality in the longline fisheries operated by CCAMLR Members during 2006/07. However, there continues to be direct and indirect evidence that incidental seabird mortality remains very high in IUU fishing operations and in some fisheries outside the Convention Area, but within the range of seabirds that occur or nest in the Convention Area.

3.1.3.2 Indirect effects of fishing due to food-web interactions

43. Trends in indicators for selected populations of penguins, flying birds and seals, are monitored at selected sites through CEMP which has been operating since 1987. The monitored populations are viewed to be dependent predators in the 'krill-centric ecosystem' and are therefore considered vulnerable to reduction of krill populations by fishing. A series of standardised indices are monitored. The monitored indices are aspects of the ecology and population dynamics thought likely to be influenced by fishing-induced reduction in prey availability, and krill availability in particular. CCAMLR monitoring is conducted through direct studies by CCAMLR Members, rather than through centrally planned and funded CCAMLR arrangements, and so some aspects of the monitoring (especially the choice of site and the frequency and intensity of monitoring) reflect the area of operation and the resources and interests of CCAMLR Member States. This and other monitoring is also undertaken in conjunction with wide-ranging assessments through cooperative work with SCAR and Parties to the Antarctic Treaty. SCAR provides an overall report on the status of wildlife species (birds and marine mammals) at approximately 5-year intervals.

44. CCAMLR periodically reviews the approaches and findings of CEMP. The last major review was in 2003 (see SC-CAMLR-XXII) and included examination of the statistical power of the monitoring to detect any change, to detect change caused by fishing, and to estimate the response of indicators to local changes in krill abundance. Some of these analyses have been more recently updated (Reid et al., 2008). CEMP provides a significant source of information on the trends and variability in the krill-centric ecosystem. There have been several analyses to examine how CEMP data could be used explicitly in fishery management decisions, such as the location or size of catch limits for krill, but to date no explicit linkage or management procedure has been agreed or implemented. Furthermore, it has been concluded that the

current design of CEMP gives quite low power to detect the effects of fishing through changes in the dependent species if the usual scientific standards for statistical significance are used, and it is inadequate to separate the effects of fishing from the effects of natural variation. It has been suggested that:

(a) for information from the current design of CEMP to be used in management decision-making to protect the dependent species, it may be necessary to use a different (more precautionary) statistical standard for detecting change;

(b) to allow separation of fishing and natural variation, it may be necessary to intentionally manipulate and control development of the fishery so as to provide the appropriate statistical contrasts;

(c) more comprehensive information should be acquired from the krill fishery.

45. Monitoring of seals has shown increasing populations of sub-Antarctic and Antarctic fur seals to the extent that they have been de-listed in appropriate fora as 'specially protected species'. However, populations of crabeater seals have apparently decreased over past decades. Although the population is still large, surveys are intermittent and survey interpretations are uncertain. Some elephant seal populations have decreased significantly over approximately the past 50 years, but they appear to have stabilised more recently. The cause of these declines is not known, although changing oceanographic conditions have been implicated.

46. Available information indicates that populations of king, Adélie, chinstrap, emperor and gentoo penguins, terns and skuas have increased or have remained stable in the past few decades. Macaroni penguins are decreasing in some areas, and the cause is not clear. Giant petrel, white-chinned petrel and nearly all albatross populations for which there are adequate data show population decreases in the past few decades, with the main cause thought to be incidental mortality during fishing. There is accumulating evidence that breeding success and population trends can be affected by oceanographic conditions, including local conditions in key foraging areas. Consequently, natural fluctuations in the status and trends of seabird populations are expected, both at local sites and regionally. And these populations are also expected to be impacted by climate change.

47. For many populations of sub-Antarctic seabirds the data available are generally inadequate to assess trends accurately at any site. For most other populations, adequate data exist for only a few sites.

48. Whales are monitored by the IWC, which reports increases in the southern hemisphere populations of blue whales (8% per year), humpback whales (11–12% per year) and right whales (7–8% per year). Recent trends in minke and fin whale populations are not reported.

Review Panel conclusions:

49. CCAMLR has a daunting mandate and responsibility through Article II.3(b) and (c) of the Convention. Effectively it must:

(a) ensure that ecological relationships are maintained among harvested, dependent and associated species (which encompasses a very large number of species and arguably most species in the Convention Area);

(b) ensure that direct and indirect changes due to fishing are potentially reversible within 20–30 years (which implies the changes are not large, especially for low-productivity species);

(c) take into account environmental changes.

CCAMLR must be congratulated for the very significant and serious effort that it has put into addressing this mandate and responsibility.

50. Knowledge of the status of the non-retained by-catch species of marine organisms (fish, sharks, invertebrates etc.) is variable, with some being known well and others only poorly known. Surveys are intermittent and dependent on the interest and investment of individual Member States, and there is strong dependence on fishery catch-rate data to monitor population status. Despite these problems, overall there is some justification to conclude that the status of the non-retained by-catch species is broadly consistent with Article II.3(b) and (c). This is because the combination of the assessments that are available, the generally low quantities of by-catch, and the management measures that are in place, provide a reasonable basis to expect that these by-catch species are not being significantly depleted by fishing.

51. However, for a large number of by-catch species the above approach amounts to little more than a 'reasonable argument' with very little support from objective evidence or assessment. For many species there remains an undetermined risk of depletion through fishing, including local depletion, and a consequent risk that such depletions may not be reversible on a 20–30-year time frame. Small or low-productivity populations are likely to be particularly vulnerable in this regard. Further, the CMs that give increased confidence that such risks are being managed (i.e. the precautionary and default catch limits on by-catch species and 'move-on' provisions from locations giving high by-catch rates) are not applied to all fisheries and fishing areas. Thus, while there is a reasonable basis to expect that the requirements of Article II are being met, the evidence is mainly circumstantial for many species, monitoring of stock status is ad hoc, and it is likely that the current approaches would not be adequate if there was significantly expanded fishing activity (especially the krill fishery) and/or major environmental change (e.g. climate change).

52. The monitoring of dependent species through CEMP has greatly increased scientific understanding and characterisation of the ecology and dynamics of these species. Characterisation of the functional responses in these species to krill abundance is a very significant achievement, and provides direct evidence for the kind and extent of dependence of predators on krill availability. But it is highly doubtful that the current focus and design of CEMP is sufficient to support specific and key fishery management decisions in relation to the effects of fisheries, and especially the krill fishery, on dependent species.

53. Increased development of the krill fishery, including significantly increased catches, appears very likely in the near future. There is now an urgent need to link CEMP to fishery management decision-making. CCAMLR's approach to development of the krill fishery has been precautionary because of the considerable uncertainty about ecological dependencies,

and it is expected that the approaches taken to the coming phase of fishery development (e.g. the identification of smaller management areas and the setting of catch limits for them) also will be precautionary. However, unintended consequences could still happen. For example, it is very unclear how fishing will affect the spatial distribution of krill or interact with other changes expected in the Antarctic ecosystem in coming decades, particularly from climate change. So it is also necessary to be able to detect, and correct any unintended or otherwise unacceptably adverse effects of fishing on dependent predators. It is now urgent that CCAMLR should (i) develop the ability to detect and monitor the effects of fishing (especially krill fishing) on dependent predators, (ii) develop the ability to separate the effects of fishing from other changes in the ecosystem, and (iii) agree how fishery management and development will be linked to, and informed by, the ecosystem monitoring information so as to achieve the objectives of Article II.3(b) and (c).

Review Panel recommendations:

1. Options should be examined to develop and implement a more comprehensive and consistent monitoring program for non-retained by-catch species (i.e. fish, elasmobranchs and invertebrates that are directly or indirectly affected by fishing but that are not commercially retained). This should aim to allow for the effective monitoring of the status of these species or groups, and the status should be centrally compiled and available for CCAMLR decision-making. Monitoring may be differentially targeted on species/areas of perceived highest risk, but it should endeavour to provide wide ecosystem coverage and relate to management actions that CCAMLR could take. The monitoring program should consider the need to differentiate the effects of fishing from the effects of other human activities and from natural variability. Consideration should be given to mechanisms that can ensure an ongoing monitoring program to meet CCAMLR's requirements, including mechanisms that reduce the reliance and focus on funding and interests of individual Members. As appropriate, this monitoring program should be collaborative with other elements of the ATS and with the activities of those States that have national jurisdiction within parts of the Convention Area.

2. By-catch management measures of the kind applied to new or exploratory fisheries and to developed fisheries in some areas should be reviewed, further developed as appropriate, and applied consistently to all fishing including krill fishing.

3. Better coordination and planning with SCAR and the Parties to the Antarctic Treaty regarding data requirements for monitoring and research, information reporting and sharing, analysis and appropriate management responses.

4. Improved formal coordination through a Memorandum of Understanding, or similar agreement, with the 2001 ACAP to address issues such as coherent management inside and outside the Convention Area.

5. CPs should use all legal avenues available to reduce and ideally eliminate the incidental mortality of seabirds, especially albatrosses and giant petrels in

the Convention Area and in other areas where seabirds from the Convention Area occur. Further reduction, and ideally elimination, of IUU fishing in the Convention Area, and relevant areas outside the Convention Area, will make a significant contribution to this.

6. Further examine, develop and agree methods to link monitoring information from dependent species to fishery management decision procedures, especially the procedures for determining the location and size of the krill catch. Ensure that these procedures have a high probability of satisfying the requirements of Article II.

7. Review, and as necessary revise, CEMP to ensure that it can support the application of these procedures and other management decision-making processes in order to achieve the objectives of Article II. Consider approaches to fishery development and monitoring that will allow separation of the effects of fishing and natural variability, or at least that have a demonstrably high probability of achieving the objectives of Article II in spite of not being able to separate these two effects.

3.1.4 Trends in the status of such species

54. Trends in the status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted Antarctic marine living resources are discussed in relation to monitoring and status under Criterion 3.1.3 above.

55. The situation and recent trends may be summarised as:

(a) Most species of non-retained by-catch are not monitored or assessed for trends, although there are some exceptions. The monitoring information available is from intermittent scientific surveys conducted by Members and from interpretation of catch rates in commercial fishing. The surveys provide high quality information but they are not generally designed to monitor the non-retained by-catch species in an ongoing, consistent and quantitative manner. This monitoring information, together with the relatively low quantity of by-catch taken and the management measures in place, provides a reasonable basis to conclude that non-retained by-catch species are probably not excessively depleted, however, it is generally inadequate to follow trends in status.

(b) Most marine mammal populations are stable or increasing, with the trends in some (e.g. crabeater seals) being uncertain.

(c) Most seabird populations are stable or increasing, with the notable exception of albatrosses and giant petrels that are generally decreasing because of incidental mortality from IUU fishing and fishing in areas outside the Convention Area.

Review Panel conclusions:

56. Recent trends in species that are dependent on, or associated with, harvested species are broadly consistent with Article II, with the exception of albatrosses and giant petrels.

While incidental mortality of albatrosses and giant petrels has greatly decreased in the legal CCAMLR fisheries and was zero in 2007, there is still high mortality estimated to be due to IUU fishing and in areas outside the Convention Area. There is a need to further protect albatrosses and giant petrels in these fisheries.

57. Trends in the next few decades are likely to be different from past trends. This is not only because of the expected increase in fishing, particularly for krill, but also because of more widespread fishing of finfish species and climate change. Climate change poses a particular challenge because changed ecological processes, productivities and species invasions may result in major changes to the quantity and location of fishery catches that are consistent with Article II. Many of these changes are very difficult to predict. This will place a much greater importance and reliance on the CCAMLR monitoring programs to be able to detect and correct undesirable outcomes and changes from fishing.

Review Panel recommendations:

The recommendations provided for Criterion 3.1.3 also apply here.

3.2 Ecosystem approach

3.2.1 Extent to which CCAMLR decisions take account of and incorporate an ecosystem approach to management

58. Article II of the Convention provides a statement of the Ecosystem Approach to Fisheries as it had been developed by 1980. That definition is, in all important respects, very similar to those articulated later and more fully in the Code of Conduct for Responsible Fisheries (United Nations, 1998) and the Ecosystem Approach to Fisheries (FAO, 2003). The principles provided by FAO (2003) for the Ecosystem Approach to Fisheries are:

- Fisheries should be managed to limit their impact on the ecosystem to the greatest extent possible.
- Ecological relationships between harvested, dependent and associated species should be maintained.
- Management measures should be compatible across the entire distribution of the resource (across jurisdictions and management plans).
- The precautionary approach should be applied because the knowledge of ecosystems is incomplete.
- Governance should ensure both human and ecosystem well-being and equity.

59. Operationally the conservation elements of the Ecosystem Approach to Fisheries emphasise:

(a) attaining high long-term yields;

(b) avoiding unacceptable depletion;

(c) allowing the recovery of overfished stocks;

(d) reducing or eliminating by-catch and the risk of depleting by-catch species;

(e) maintaining food-web function including ensuring prey availability for dependent species, protecting endangered species;

(f) protecting habitats and biodiversity.

60. In summary, the objective of the Ecosystem Approach to Fisheries is sustainable use of the whole system, not just the species targeted by the fishery.

61. The RP considered that the objectives of the CAMLR Convention are compatible with the objectives of the Ecosystem Approach to Fisheries, particularly as they have been operationally interpreted and applied by CCAMLR. The objective of rational use in the CAMLR Convention was considered to address the balance of human and ecosystem well-being.

62. The performance of CCAMLR in relation to application of the Ecosystem Approach to Fisheries, and the embodied precautionary approach, was recently reviewed by Lodge et al. (2007) and Mooney-Seus and Rosenberg (2007) in describing best practices and model practices in RFMOs. Elements examined were the overarching objectives, decision rules, limit reference points, target reference points, catch control for harvested species, by-catch reduction/protection, habitat protection, recovery plans, capacity reduction/control, evaluation and adjustment, code of conduct, research program, experimental fisheries, monitoring and improving of compliance, detection of indirect effects of fishing, and penalties for non-compliance. CCAMLR was the best performing of the 13 RFMOs examined and, in most aspects, CCAMLR performance is either providing best practice or is very close to best practice. The areas of CCAMLR weakness in the reviews identified above were:

(a) Habitat protection. CCAMLR documentation available at the time of the review did not include the CMs adopted in 2007 to control development of fishing that interacts with the seabed. So some aspects of this weakness have since been addressed by CCAMLR.

(b) Recovery plans. As noted earlier, there are several depleted populations under CCAMLR management that have not recovered, and for which there are no explicit recovery plans. This weakness remains, and is addressed through a recommendation elsewhere by the RP (see Criterion 3.1.1).

(c) Penalties for non-compliance. Some measures within CCAMLR that were being developed or already implemented were recognised (e.g. the development of a 'black-list' of non-complying vessels of Members or non-Members, the CDS), but it was concluded that these are still not fully successful. IUU fishing

continues to provide significant threats to achieving the Ecosystem Approach to Fisheries and there remain gaps in relation to transhipment. These are raised as recommendations elsewhere by the RP (see Criteria 3.1.2 and 3.1.3 and Chapter 4).

63. The Ecosystem Approach to Fisheries emphasises the need for coherence and compatibility of management arrangements and measures across the entire distribution of the resource. There are two situations where this is not fully addressed by CCAMLR:

(a) Ensuring coherence and compatibility of management arrangements within the Convention Area across areas that are high seas and areas that are within the national jurisdiction of States. There are several areas of national jurisdiction within the Convention Area. They involve some shared fishery resources (e.g. icefish, toothfish and krill stocks), overlaps with the migration and feeding ranges of wildlife species (e.g. seabirds and seals), and some ecological interactions (e.g. predator–prey relationships). However, there are limited explicit arrangements in place to ensure compatibility of research, monitoring, assessment and management. Many of the CCAMLR CMs explicitly do not apply to the areas of national jurisdiction by virtue of the reservation placed on those measures by the State in question, and there are not always clear mechanisms, agreements or evidence that the arrangements being applied within jurisdictions are equivalent or compatible. The level of information exchange is variable not only directly on monitoring and compliance within the fishery, but also on research.

(b) Ensuring coherent and compatible management in areas outside the Convention Area but which contain stocks that are shared with the Convention Area. Management of the incidental mortality of albatross is an obvious example of this. Another, more local, example is that of krill that are present to the north of Subarea 48.1, consequently outside the Convention Area, but which would be important in understanding the dynamics within SSMUs in the southwest Atlantic sector.

Both these situations could occur with an expanded krill fishery.

64. A key aspect to the Ecosystem Approach to Fisheries management is the ability to recognise and, as appropriate, address system-wide impacts of fishing, for example, on biodiversity and ecosystem function. CCAMLR's approach to this is two-fold:

(a) Research and monitoring programs to understand better and measure the effects of fishing. Examples are the specific monitoring and research plans required as part of new or exploratory fisheries, CEMP, the planned focus of CCAMLR research on skates and rays in 2009 (i.e. the 'Year-of-the-Skate'), and the associated research and monitoring carried out through collaboration with Parties to the Antarctic Treaty. Although CEMP data have not been used explicitly to set catch levels, they have been used implicitly in the definition of SSMUs. They have also, by virtue of their long time series, provided valuable insights into natural variability and ecosystem responses to environmental change.

(b) Precautionary CMs introduced in anticipation of the risk of system-wide impacts. Examples are the relatively high escapement that is required for designated prey species, the by-catch requirements placed on new or exploratory fisheries and some established fisheries, the use of spatial zoning of catch allocations, the restrictions on directed fishing on species or species groups likely to be important in ecosystem function (e.g. lanternfish and sharks) and the recent restrictions and conditions placed upon use of fishing methods that interact with the seabed.

65. The combination of these two approaches provides a pragmatic and practical way to address a challenging aspect of the Ecosystem Approach to Fisheries. It does not require or rely on knowing everything about the ecosystem before CMs are taken, but it does ensure targeted and incremental improvement in understanding and the ability to measure impacts. CCAMLR is more developed than any RFMO in this regard.

Review Panel conclusions:

66. CCAMLR has clearly put considerable scientific and management effort and focus into developing approaches that allow it to address the key elements of the Ecosystem Approach to Fisheries. As a result, it is a world leader in developing and implementing this wide-ranging concept. That the status of most of the fishery resources, dependent and associated species is consistent with Article II and the Ecosystem Approach to Fisheries is no doubt due in large part to this effort and focus. CCAMLR is to be congratulated for this performance and encouraged to continue this focus, especially as it goes into a period likely to be characterised by increased fishing pressure and environmental change.

67. Challenges are likely to be:

(a) Effective monitoring and control of IUU fishing. This has the potential seriously to undermine and even reverse the gains that CCAMLR has made to date in relation to the Ecosystem Approach to Fisheries. This is addressed by RP recommendations elsewhere (see Criteria 3.1.2 and 3.1.3 and Chapter 4).

(b) Establishing compatible CMs throughout the Convention Area and, as necessary, areas outside the Convention Area. Recommendations in relation to compatibility within the Convention Area are provided by the RP through other review criteria (see Criteria 3.1.3, 3.2.1 and 3.5.5).

(c) Improved coherence, targeting and coverage of the monitoring program so as to anticipate or detect effects of fishing. Elements of this are addressed by RP recommendations elsewhere; under Criteria 3.1.2 for harvested species and 3.1.3 for species that are dependent, associated or in the same ecosystem as harvested species (i.e. non-retained by-catch species and CEMP monitoring of the krill-centric ecosystem). For the Ecosystem Approach to Fisheries, these monitoring programs will need to be closely connected with one another and with the development of CMs and management procedures.

(d) Anticipation of the likely effects of fishing under circumstances of increased fishing pressure (i.e. increased range of species harvested, including krill, the

areas harvested, the kinds of fishing gear and the number/diversity of fishery participants), and development of appropriate monitoring and/or precautionary management responses before undesirable effects occur.

Review Panel recommendations:

1. Explicit mechanisms, agreements and reporting should be developed to provide coherence and compatibility of research, monitoring and CMs within the Convention Area, including areas of high seas and areas of national jurisdiction.

2. Explicit mechanisms, agreements and reporting should be developed with relevant nations and organisations to provide compatibility of management measures, research and monitoring between the Convention Area and areas outside the Convention Area that contain species relevant to CCAMLR achieving the objectives of the Convention.

3. An explicit and active process should be developed to anticipate threats from fishing and environmental change, and to develop appropriate approaches through research, monitoring and/or precautionary CMs to address them before they become manifest.

4. A more coordinated and coherent approach to ecosystem monitoring and research should be developed and adopted. Other recommendations by the RP address separately the monitoring of harvested species, monitoring of species that are dependent, associated or in the same ecosystem as harvested species, better coordination with monitoring and research in regions of State jurisdiction within the Convention Area, and development of management procedures that make use, or take account, of CEMP-like monitoring information. The recommendation here is for these to be viewed, planned and reported coherently to support CCAMLR's implementation of the Ecosystem Approach to Fisheries. For example, there may be merit in expanding the role of CEMP beyond the krill-centric ecosystem view, and for development of a single program to be responsible for the monitoring needs of all of CCAMLR's management including a wider range of invertebrates, fish and wildlife (e.g. Weddell seals).

5. Develop mechanisms to address burden-sharing for research and monitoring among Members so as to reduce the current reliance on a small number of Members and consequent risk to CCAMLR's management approaches if any of these Members reduced their input (this issue is also discussed in Chapter 7). The RP viewed this with particular concern, given the fundamental importance of research and monitoring to the CCAMLR management approach and the difficulties experienced by scientists in securing funding for monitoring.

3.3 Data collection and sharing

3.3.1 Extent to which CCAMLR has agreed formats, specifications and timeframes for data submissions

68. CCAMLR maintains an extensive system for the collection, verification and submission of data to support the processes of the Commission. This includes:

(a) Retained catch and effort reporting in relation to catch and effort CMs. The detailed requirements are provided in a series of CMs and there are relevant reporting formats and delivery time frames.

(b) Fine-scale data on retained catch, discarded catch and effort. The detailed requirements are provided in a series of CMs and there are relevant reporting formats and delivery time frames.

(c) Cumulative and summary catch and effort for each CP. Requirements have been developed in consultation with FAO. There is a standard format and data submission time frame.

(d) Scientific observer data. These include a wide range of biological and fishery operational information collected by scientific observers designated from among Members according to CCAMLR protocols. There are relevant reporting formats and delivery time frames.

(e) Research data. CCAMLR provides a standardised database for Members to submit catch, effort and associated biological data from research cruises, including compliance with CMs that apply to scientific research activities. Reporting of research activities within areas of national jurisdiction or that are not covered by a CCAMLR CM is not mandatory.

(f) Acoustic data. CCAMLR holds acoustic data from CCAMLR surveys for krill and finfish. The database has specified formats and specifications.

(g) CEMP data. All of the standardised CEMP indices are submitted to CCAMLR in agreed formats and specifications, and in an agreed time frame.

(h) Marine debris data. Members are required annually to submit information on marine debris from surveys and from sighted entanglements or pollution. There are standardised forms for reporting. There appears to be a low rate of provision of these data.

(i) Vessel registry. The details of vessels that have operated in the Convention Area or that are permitted to do so. Reflagged or renamed vessels are linked to the previous vessel history. As appropriate, the history of enforcement-related issues is recorded for vessels. IUU vessels are recorded on the register. There are standardised formats and specifications for reporting or recording vessel details.

(j) CDS. The requirements of CDS reporting are provided in CMs. There are standardised reporting formats and delivery time frames.

(k) VMS. The requirements of VMS data collection and reporting are provided in CM 10-04. There are standardised reporting formats and time frames. The reporting requirements and time frames differ among fisheries and some (e.g. all krill fisheries and fisheries in South African or French jurisdiction waters) are not required to report the collected VMS data.

(l) Sea-ice data. Sea-ice data are accessed from various sources and used to produce standardised indices and map products.

69. In addition to these data acquisition and management processes, the CCAMLR Secretariat maintains and archives the main statistical or modelling assessments conducted through Working Groups. This includes specification of inputs and documented versions of the software or model that was used.

Review Panel conclusions:

70. The CCAMLR system for data submission, verification, storage and access is functioning well but has come under pressure due to the increases in data reporting and information flow imposed on it in recent years. It has well-defined and established formats, protocols and time frames for submission. Data formats are agreed by CCAMLR's Scientific Committee. What difficulties do arise appear to be mostly the result of Members or vessels not meeting submission timelines or details, inconsistent requirements among different fisheries (e.g. krill and finfish fisheries) and areas (e.g. high seas and State jurisdiction), and different requirements among different categories of CCAMLR participants (i.e. Acceding States vs CCAMLR Members). These are addressed under later criteria. There are intermittent difficulties or confusions with the reporting formats, but CCAMLR has a history of resolving these in its usual processes of review, analysis and decision-making.

Review Panel recommendations:

1. The centrally supported capability for information acquisition, verification, archiving and delivery should be maintained and expanded so as to meet anticipated needs. The increase in fishing activities that is expected during the next few years, for both krill and other species, will increase the scale and complexity of data acquisition, verification, archiving and delivery into CCAMLR assessment and management processes. The development of more integrated approaches to planning and utilising information from ecological monitoring is likely to increase the workload on the CCAMLR capability for information management, especially during the period of re-design and transition, and any such needs should be identified and addressed. These tasks need to be considered in the light of the resources allocated to them by the Commission.

2. CCAMLR should consider mechanisms for capacity building and cooperative programs, particularly for Developing States, in order to support the information needs of Article II and the ecosystem approach to fishery management.

3.3.2 Extent to which CCAMLR Members and Contracting Parties, individually or through CCAMLR, collect and share complete and accurate data concerning Antarctic marine living resources and other relevant data in a timely manner

71. The RP considered that this criterion related to three situations:

(a) Data requirements as specified in CCAMLR CMs.
Data from these mandatory requirements are monitored by the CCAMLR Secretariat and the various Working Groups and review processes. These data requirements appear to be met adequately and accurately in the great majority of situations. Where they are not met, the routine CCAMLR processes appear to have a good record of recognising the situation and bringing it to the attention of the relevant Parties. Many of the data, particularly for finfish fisheries, are verified and/or are provided by CCAMLR scientific observers that operate under the CCAMLR Scheme of International Scientific Observation. Observers are designated nationals of Members, must be familiar with the CCAMLR requirements of observers, conduct sampling specified by CCAMLR, and are placed on the vessels of other Members through a bilateral agreement between the respective Members. This scheme has worked well but in recent years there has been significant growth of the number and range of observer requirements. This has caused some difficulties with the adequacy of training, adequacy of manuals and guides, and prioritisation of tasks. Suggestions have been made for the use of automatic or semi-automatic methods to assist observers in making their current observations, especially methods that make use of the increasingly sophisticated equipment now used on commercial fishing vessels.

(b) Additional research and monitoring that is recognised as being of relevance by CCAMLR, and sometimes reviewed and agreed by CCAMLR, that is conducted by one or more Members.
This is a major mechanism by which CCAMLR obtains significant data and new understanding about the Antarctic ecosystem and its resources. This research and monitoring is very broad – it ranges from scientific surveys through biological/ecological studies to modelling and statistical analysis. Without these inputs, CCAMLR would be considerably reduced in its capacity to deliver on the objectives of the Convention, and Article II in particular. The quality, accuracy and relevance of the great majority of these studies is scrutinised through the Working Groups, and is generally very high. The main difficulty is that this additional research is mostly conducted by a relatively small number of CCAMLR Members.

(c) Information collection conducted by Members more or less independently, especially in areas of national jurisdiction, and in addition to requirements that are specified in CCAMLR CMs.
Many Members conduct research and monitoring programs in the Convention Area more or less independently of CCAMLR, including through catch and effort reporting and national observer programs. Some of these activities are reported to CCAMLR and in some cases data are also reported – but not in all cases.

Review Panel conclusions:

72. Overall, there is extensive collection and sharing of accurate information among CCAMLR Members in relation to Antarctic marine living resources. However, there are some areas of ongoing difficulty that could, and should, be addressed:

(a) Non-compliance by Members with data reporting requirements of CCAMLR is not frequent, but it should not happen at all. That it does happen indicates inadequate controls or procedures by Members, particularly over the at-sea operations of their vessels.

(b) The over-reliance on a relatively small number of Members to conduct major additional research and monitoring programs that are critical to the operation of CCAMLR is inequitable. It should be no longer acceptable for Members to fish without making a commensurate contribution to the information needed to meet the objectives of the Convention. This practice also places the research and monitoring program in a vulnerable position, both because the focus of the research and monitoring can be strongly influenced by national interests rather than CCAMLR priorities and because the research and monitoring program is vulnerable to unilateral reduction in investment. The RP made a recommendation in relation to this issue under Criterion 3.2.1.

(c) All research and monitoring of fisheries, marine living resources and ecosystems conducted by Members in the Convention Area should be known and, as appropriate, available for use by CCAMLR to achieve the objectives of the Convention.

(d) Operation of the observer program is already causing some limitations to the kinds and quality of data available and it has the potential to become a significant bottleneck to expanded fisheries in the Convention Area.

Review Panel recommendations:

1. An explicit mechanism should be established whereby all Members and CPs regularly notify CCAMLR of potentially relevant research and monitoring being conducted in the Convention Area. This includes fishery catch and effort, observer programs and research programs within areas in the Convention Area under national jurisdiction. As agreed and appropriate, data from these activities should be made available to CCAMLR, but in any event, the existence of the activities and information should be notified so as to allow exploration of scientific collaboration.

2. All Members and CPs should further develop mechanisms to ensure that vessels and fishing companies under their jurisdiction adhere to CCAMLR CMs, including information reporting requirements. This Flag State obligation is further addressed in Chapter 4.

3. The Scheme of International Scientific Observation should be reviewed and supported so as to meet expanded CCAMLR monitoring and management requirements, particularly requirements relating to habitat, by-catch and other

elements of the ecosystem approach to fisheries management. This should include ensuring adequate training, adequate manuals and guides, and prioritisation of tasks. This may be linked to consideration of developing a single program responsible for meeting CCAMLR's scientific monitoring needs, as recommended through a previous criterion. This should also consider whether the existing bilateral mechanism for identifying and placing observers is the best for the coming circumstances, because it could both limit the supply of observers and result in an inequitable distribution of costs.

3.3.3 Extent to which fishing and research data and fishing vessel and research vessel data are gathered by CCAMLR and shared among Members

73. Many of these issues are described through previous criteria. CCAMLR has a well-developed reporting system, supported by scientific observers for many fisheries, and a well-developed set of mechanisms for sharing the information among Members. These data are reviewed by the CCAMLR Secretariat and by the various specialist Working Groups of CCAMLR. Generally the data submission and availability is proceeding effectively and fully. In addition, the Members and Secretariat put considerable effort each year into estimating and reporting IUU fishing operations and catches, including the retained fishery catches, some by-catch and incidental mortality of wildlife.

74. While there are occasional failures in reporting by Members, this does not appear to be widespread and generally can be raised and addressed through CCAMLR processes. One inconsistency in reporting, however, was related to a potential difficulty in interpretation of the Articles of the Convention. Article 7 allows a CP to fish prior to becoming a Member, and Article 20 requires Members to report data. This could lead to the situation in which a CP continues to fish, does not report any data and does not become a Member.

Review Panel conclusions:

75. As previously stated, the RP considered that CCAMLR gathers and shares data on the fisheries operations, research and vessels efficiently and effectively. Relatively few problems are encountered considering the complexity of the fisheries, research and monitoring. Most of the problems that do occur from time to time appear capable of detection and correction through the usual CCAMLR processes. There is a need, however, to clarify the reporting responsibilities of CPs who are fishing but who are not CCAMLR Members.

Review Panel recommendations:

1. Clarify the responsibilities of CPs who are fishing but who are not CCAMLR Members. Ensure that these CPs do have an obligation to report on their fishing activities and to abide by all CMs.

3.3.4 Extent to which CCAMLR is addressing any gaps in the collection and sharing of data as required

76. Several gaps have been identified through consideration and recommendations relating to other review criteria.

77. The RP noted that training under the CCAMLR Scheme of International Scientific Observation was undertaken by the Member deploying the individual observers. It was noted that the training and accreditation for scientific observers should be standardised to improve the quality of the data collected. The RP recommended that CCAMLR should take steps to address this issue. As part of this exercise it was noted that it is important that the priorities for the different types of data collection should be clearly identified.

78. CCAMLR uses national observers who are exchanged under a bilateral agreement with the receiving State. This is in contrast to many other bodies, such as the WCPFC, which have a centralised observer program.

79. There is considerable inconsistency in the monitoring and reporting requirements for different fisheries and management areas. In particular, the reporting and monitoring requirements of the krill fishery are much weaker than those for the finfish fisheries, and especially for the new or exploratory finfish fisheries. Notwithstanding the precautionary catch limits in place, the krill fishery in reality is a new or exploratory fishery in most of its aspects, including knowledge of the population dynamics and spatial dynamics of krill, and the effects of krill fishing on dependent and associated species. There have been requests made through the Scientific Committee for the krill fishery to provide monitoring and reporting appropriate to its developmental status, including the requirement for biological data and mandatory observers. These requests and the action taken by the Commission are set out in Appendix IV. The RP agreed with the Scientific Committee suggestions that the monitoring and reporting requirements for the krill fishery should be made consistent with those of other CCAMLR fisheries.

80. CCAMLR uses a precautionary approach for most of its new or exploratory fisheries that is intended to ensure that there is sufficient information available to support orderly and sustainable development of the fishery, and that fishery development does not outpace the ability to manage it. However, there have been failures of this approach and, to some extent, these may have been due to inadequacies in the data available to support sustainable fishery development. Further expansion of fisheries is expected in the coming years, especially the krill fishery. There is a need for very strong emphasis from CCAMLR on learning the lessons from past experiences and ensuring that there are adequate data available to support such fishery developments. This is addressed by the recommendations under Criteria 3.1.1 and 3.1.2.

81. There are data gaps in the integrated monitoring of the ecosystem and its processes. These should be addressed by review and integration of the several separate monitoring programs conducted under CCAMLR.

Review Panel conclusions:

82. CCAMLR has a number of gaps in the collection of data to support achievement of the Articles of the Convention. These have been recognised by CCAMLR and/or are addressed under Criteria 3.1.1, 3.1.2, 3.2.1 and 3.5.1.

Review Panel recommendations:

1. Training and accreditation for scientific observers should be standardised to improve the quality of the data collected.

2. The priorities for data to be collected by observers should be clarified.

3. Monitoring and reporting of the krill fishery should be made consistent with the requirements of other CCAMLR fisheries.

3.4 Quality and provision of scientific advice

3.4.1 Extent to which CCAMLR receives and acts on the basis of the best scientific advice relevant to the Antarctic marine living resources under its purview, as well as to the effects of harvesting, research, conservation and associated activities, on the marine ecosystem

83. CCAMLR has a comprehensive and effective system for the provision of scientific advice. The quality of the scientific consideration and advice is very high. Under Article XV of the Convention, the Scientific Committee is responsible for establishing the basis for development of CMs, assessing the status of populations, analysing the direct and indirect effects of fishing, assessing the impact of harvesting and CMs, and formulating relevant research programs to support recommendations to the Commission. A very strong foundation for the CCAMLR science system is provided by a series of specialist Working Groups, each addressing a mandated set of issues of importance to the Scientific Committee and Commission. Working groups are composed of experts with relevant expertise from CCAMLR Member States, nominated advisers, invited experts, collaborators (e.g. collaborating scientists from SCOR and SCAR) and consultants. In practice, Working Groups often include people with relevant expertise from stakeholder groups (e.g. fishing and conservation NGO interests) as advisors or invited experts. The Working Groups report to the Scientific Committee which consolidates and, as necessary, further interprets the Working Groups' findings. Separate expert Working Groups address:

- Ecosystem Monitoring and Management (WG-EMM)
- Fish Stock Assessment (WG-FSA)
- Incidental Mortality Associated with Fishing (WG-IMAF)
- Statistics, Assessments and Modelling (WG-SAM).

84. To a considerable extent, the quality and diversity of the expertise involved in Working Groups depends on the contributions and engagement of the Members. To date this has delivered a high standard of science, but the bulk of this input is provided by a relatively small number of Members.

85. Through its history, the Scientific Committee had provided advice to the Commission in different ways, ranging from a broad range of interpretations in situations where the data did not permit a detailed assessment or single interpretation, to single agreed values or recommendations. Providing a broad range of interpretations in situations of high scientific uncertainty often did not help in subsequent decision-making. More recently it has been the norm to describe uncertainty explicitly through the use of confidence intervals. Also, there has been recent emphasis on developing and agreeing management procedures. These procedures incorporate the scientific uncertainty to produce definitive advice on catch limits, with the procedures explicitly designed to deliver the desired level of environmental risk and fishery catches in the long term. This has greatly improved the utility of the scientific advice and, for stocks where such procedures are agreed, it is now usual for the scientific assessment, recommendation and decision-making process to occur very efficiently and effectively. There appears to be considerable value in extending the application of this approach further.

86. Concerns have been raised by some Members and stakeholders that the Scientific Committee and its Working Groups can procrastinate for lengthy periods on contentious issues, rather than giving priority to addressing them quickly and providing clear and timely recommendations. The perception has been that contentious issues are sometimes deferred rather than addressed, and lengthy discussions are provided rather than clear advice through either appropriate and specific recommendations or specification of how the issue can be resolved.

87. Concern has also been periodically expressed about the strong trend for increase in the size of the Scientific Committee report. This increase has implications in two main areas. Firstly, by increasing the costs of production, translation and distribution of the reports, an aspect considered further under Criterion 6.1.2. Secondly, a large report to which the Working Group reports are annexed means that key information is either difficult to find or expressed in slightly different forms in different parts of the report. Also, within the current Scientific Committee and Working Group reports, all information is given roughly equal weight, despite priorities having been set by the Scientific Committee and Commission (e.g. on MPAs and VMEs). This can mean that the quality and focus of the science is not necessarily reflected in the reports.

Review Panel conclusions:

88. The scientists engaged in the work of SC-CAMLR are generally of very high calibre. Many are considered to be the world's experts in their fields, including Antarctic ecology and marine living resources science. As a result, high-quality scientific advice is provided to the Commission. There is a strong dependence on the contributions of a relatively small number of Members, however, and robustness of the system might be increased by reducing this dependency through greater collective investment in the science programs.

89. The RP was particularly impressed by the improved efficiency, effectiveness and acceptance of scientific advice when it is delivered through pre-agreed management procedures that contain understood balances between precaution, risk and long-term harvest levels. This is especially helpful in situations of high scientific uncertainty which, when considering new and exploratory fisheries and the indirect effects of fishing, is usually the case. It also helps greatly in identification of monitoring requirements. Development and use of management procedures is an area of development and application of science in which

CCAMLR could make a significant contribution both to the benefit of achieving its own objectives and to advancement of the Ecosystem Approach to Fisheries more generally. The use of agreed management procedures should be used in CCAMLR as much as possible.

90. The ongoing issues concerning the most appropriate size and form of the Scientific Committee report are not unique to CCAMLR, and it is likely that there is not a single solution that would be enduring. Rather, the focus and appropriate level of detail necessary will change with circumstances, scientific challenges and management challenges. There have been some significant recent improvements, such as providing fish stock reports separately in electronic format. However, although these appear to be of greater utility in bringing forward summary information to assist the Scientific Committee in developing its advice to the Commission, they duplicate information already present in the Working Group reports.

91. Although all the parts of each report contain a great deal of useful information, the overall size of the report is so great that it is difficult to find key information quickly. Furthermore, the size of the report is such that much of its content may not be read or absorbed in a way that enhances continuity of debate from year to year. The extent of the increase in number of pages in the Scientific Committee report can be seen from Figure 1 below.

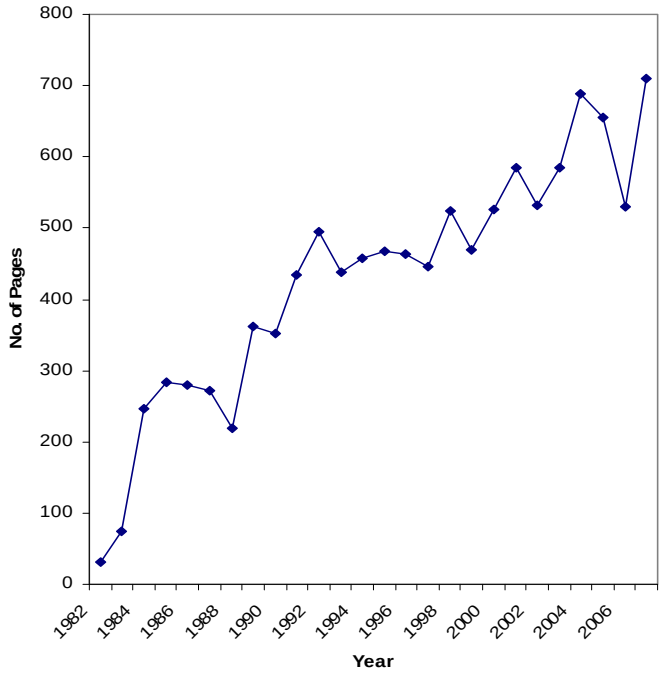

Figure 1: Increase in the number of pages in the Scientific Committee report from 1982 to 2007.

92. A significant proportion of the Working Group reports describe ‘work in progress’. This is best kept within the Working Group reports, with only summary statements being provided in the Scientific Committee report until such time as endorsement is required from the Scientific Committee for the final product.

93. Overall, CCAMLR appears to be at a stage where serious consideration of alternatives to the historical structure of the Scientific Committee report would be very worthwhile. Key aspects of this ‘stage’ are that the core approaches to several issues have reasonably stabilised

(e.g. CEMP methods and indices, incidental mortality mitigation methods and reporting, and fishery monitoring, assessment and some management procedures) while key future challenges are likely to be different in kind and scale (e.g. expansion of the krill fishery, climate change, consideration of the effects of IUU and compliance of Members and non-Members). These emerging challenges require somewhat different science and solutions. A particular need at this 'stage' is to be able to track more routinely the status of stocks and issues that are being dealt with by reasonably stabilised approaches, and to not have that activity distract from developing and applying solutions to the emerging challenges. There are many ways that the form and size of the Scientific Committee report may be revised to meet these needs. One is to develop performance and risk measures more formally that can be provided in summary form to enhance efficient and more routine tracking of issues and stocks for which this is appropriate. A tabular presentation of the key management decisions could provide advice in a clear and concise manner, rather than having advice buried within a series of rather dense report paragraphs. Such a table could include the sets of recommendations arising from pre-agreed management procedures (listing the stock, the catch in the previous year, the stock size, the current catch limit and the management procedure applied). For those fisheries or issues where there are no pre-agreed management procedures, then a risk-based table could be presented indicating the options available and the contingent risks.

94. The RP was strongly of the view that in the interests of transparency and broader participation it was important that the full report of the Scientific Committee and Working Groups should continue to be translated into the official languages of CCAMLR.

Review Panel recommendations:

1. Consider mechanisms to distribute the cost of providing scientific analysis and support for the Working Groups and Scientific Committee more equitably among CCAMLR Members, without reducing the current quality of the scientific input.

2. Further extend the approach of standardised management procedures and risk management. These extensions could take the form of fully integrated management procedures that provide a single 'answer' and/or a standardised way that risk is presented under different management options. Suggested extensions are (i) procedures for calculating catch limits should be developed for further stocks; (ii) procedures for spatial allocation of catch, including among SSMUs; and, (iii) procedures for incorporating information on by-catch, dependent and associated species into catch limits and spatial allocations.

3. The form of the Scientific Committee report should be reviewed to identify improvements in the efficiency and effectiveness of (i) reporting status and risk; (ii) providing management recommendations; and (iii) ensuring scientific and management focus on the emerging key challenges.

3.5 Adoption of conservation and management measures

3.5.1 Extent to which CCAMLR has adopted conservation and management measures for Antarctic marine living resources that ensure the conservation, including rational use, of those resources and are based on the best scientific evidence available

95. CCAMLR has now adopted CMs, which include fishery management measures, for all the fisheries that operate in the Convention Area. This has been the situation since about the early 1990s. These CMs have been developed through the CCAMLR scientific process and so have a very strong scientific basis. The CMs are well organised and described in CCAMLR documentation. They cover all the major elements of conservation and fishery management, including:

- fishery regulations
- compliance
- reporting, including a CDS for toothfish
- gear regulations
- minimisation of incidental mortality
- environmental protection
- fishing seasons, closed areas and prohibited fishing
- catch limits
- protected areas.

96. The review by Mooney-Sues and Rosenberg (2007) concluded that CCAMLR had the most comprehensive set of management measures in place to address conservation and fishery management among all RFMOs examined. One key management initiative of CCAMLR is the suite of CMs and actions required of new or exploratory fisheries to ensure that there is sufficient information available to support sustainable development of the fishery, including impacts on by-catch and dependent species. Similarly innovative is the developing use of SSRUs in new or exploratory fisheries and smaller management units (i.e. smaller than the usual CCAMLR management units) and SSMUs in the krill fishery, so as to reduce the possibility of local depletion and consequent effects on dependent predator species.

97. Delays in adopting and implementing conservation and management measures recommended by the Scientific Committee have generally been minimal and consistent with reasonable 'due diligence' in balancing the need to act with the need to select an appropriate action. The review by Mooney-Sues and Rosenberg (2007) also identified CCAMLR as having a good record in following scientific advice. But there are examples of very slow response, or an inability to respond, to scientific recommendations. Examples of these different situations are:

(a) Recommendations of catch limits from the Scientific Committee are very quickly accepted and adopted by the Commission when the recommendations are based on previously agreed management procedures. As noted elsewhere in this report, as many recommendations as possible should be addressed by developing and applying such pre-agreed procedures.

(b) Recommendations for improved biological research and fishery operations in the krill fisheries have been made for many years without adoption and

implementation, or with very limited adoption and implementation. This is despite the operation and development of the krill fishery, and its potential effects on dependent species, being one of the main motivations for the establishment of CCAMLR, and that the krill fishery is in most respects a new or exploratory fishery. Specific improvements that are implemented for other CCAMLR fisheries, that have been formally recommended for the krill fishery, but that have not been adopted and implemented in the krill fishery include:

- mandatory sampling, reporting and verification by CCAMLR scientific observers;
- VMS reporting, access and use;
- 5-day catch and effort reporting, and monthly fine-scale catch and effort reporting;
- spatial restrictions, including SSRUs for catch limits;
- target species move-on rules;
- by-catch limits and move-on rules;
- gear and mesh size restrictions;
- fishery-based research program.

Formal recommendations on some of these issues (e.g. scientific observers) go back to at least the year 2000 but without adoption; this history is described in further detail in Appendix IV.

(c) Most recommendations for reporting, conservation and management are put forward so as to apply to the whole Convention Area or specific CCAMLR management areas within it. However, some Members repeatedly exercise their right to exempt areas under national jurisdiction from the recommended measures. For example, the areas of national jurisdiction around the Kerguelen Islands (Division 58.5.1), Crozet Islands (Subarea 58.6) and Prince Edward Islands (Subarea 58.7) are exempt from CMs relating to:

- notification and CCAMLR approval of new or exploratory fisheries
- mesh size limits for icefish
- monthly reporting of fine-scale catch, effort and biological data
- application of CMs to research
- minimisation of incidental mortality of seabirds and marine mammals
- general environmental protection during fishing
- by-catch limitations, and general measures for toothfish fisheries, in new or exploratory fisheries.

Review Panel conclusions:

98. CCAMLR has adopted and implemented a wide range of management measures in the Convention Area to achieve the conservation and rational use objectives of the Convention. These measures include some very innovative approaches such as the arrangements for new or exploratory fishing. The management measures are based on world-class science and scientific advice.

99. In the great majority of cases in recent years there is minimal delay in adopting and implementing scientifically recommended management measures. In the case of setting fishery catch limits, this efficiency in adoption has been greatly aided by the use of pre-agreed procedures to calculate the recommended catch, with those procedures reflecting the desired balance of precaution, risk and catch. In some other cases there have been long delays, and this seems particularly true for management measures relating to the orderly and sustainable development of the krill fishery. RP recommendations relating to this aspect of the krill fishery are made under Criteria 3.1.1, 3.1.2 and 3.5.4.

100. The situations where CMs cannot be applied, or applied in a consistent way, throughout the Convention Area potentially undermine pursuit of the objectives of the Convention, although whether this actually occurs depends on the research, monitoring and management regime applied in those areas. The RP has made recommendations through other Review criteria in relation to improving the consistent application of management, monitoring and research throughout the Convention Area (see Criterion 3.3.2).

Review Panel recommendations:

For this criterion, attention is drawn to the recommendations under Criteria 3.1.1, 3.1.2, 3.3.2 and 3.5.4.

3.5.2 Extent to which CCAMLR has applied a precautionary approach as set forth in the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points

101. The key elements of the precautionary approach, as provided by Article 7 of the Code of Conduct, are:

(a) The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.

(b) Uncertainties about the size and productivity of the stocks and the impact of fishing activities (including discards, non-target and associated or dependent species and environmental conditions) should be taken into account in developing management measures.

(c) Stock-specific target and limit reference points should be identified, and the actions to be taken if they are exceeded need to be identified. When a limit reference point is approached, measures should be taken to ensure that it will not be exceeded.

(d) New or exploratory fisheries should have cautious conservation and management measures, including catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks.

(e) If a natural phenomenon has a significant adverse impact on resources, then conservation and management measures should be adopted on an emergency and temporary basis to ensure that fishing activity does not exacerbate such adverse impact.

102. The CCAMLR approaches to assessment and development of management measures contain numerous examples of the application of the precautionary approach:

(a) The establishment of precautionary catch limits for krill, the prohibition of directed fishing on sharks, lantern fish and whiptails, the prohibition of deep-sea gillnets, the limitations on gears that impact the seabed, most by-catch limits and most spatial zoning of catches are all measures that were introduced in response to a perceived threat, but with limited scientific information available and no definitive scientific proof about the details or reality of that threat to Antarctic organisms and ecosystems. However, some of these measures are not applied to all fisheries or to all areas in the Convention Area.

(b) The stock assessment processes used by CCAMLR in recent years take explicit account of uncertainty in the productivity and stock status, and the future consequences of fishing. These issues are integral to the agreed management procedures used to calculate catch limits for krill and most fish stocks. The effects of fishing on by-catch are directly considered and precautionary management measures have been taken in most fisheries. CCAMLR has developed and applied protocols that are intended to protect dependent predators in the absence of scientific proof of the level of that dependence. Harvested species that are also designated from general scientific information as being key prey species are managed using modified reference points to ensure that a relatively high abundance of prey is maintained (i.e. that the median reduction of prey species abundance is to 75% of the unfished level).

(c) Target and limit reference points are implicit in the criteria in the agreed management procedures that are used for determining catch limits in the directed fisheries for finfish and for determining the precautionary catch limit for krill. The criteria are designed to ensure that there is a low probability of violating the limit reference point, and the management procedures recommend zero catches if the limit reference point is exceeded. For finfish management, procedures are applied to ongoing determination of catch limits and these procedures result in catches being reduced as a limit reference point is approached. There are not yet similar procedures for the ongoing assessment and management of the krill fishery and the existing procedures provide just a single precautionary catch limit to be applied until more refined approaches are available.

(d) The CCAMLR approach to new or exploratory fisheries provides a structured approach to fishery development. It is designed to ensure that during fishery development there is adequate information available to support decision-making

and that the effects of fishing on target stocks and associated or dependent species is within biologically safe limits for the available information. There is a procedure for setting initial precautionary catch limits, and low default limits are set for the by-catch of species or groups of species. There are management requirements that ensure the catch and by-catch is spatially distributed so as to avoid local depletions. There are requirements for mitigation measures for incidental mortality and requirements for research and monitoring, including the necessity for observers. These arrangements remain in force until the fishery has enough information to support a full assessment of the fishery so as to establish ongoing arrangements for assessment and management, including management of the impacts on dependent or associated species. This approach has been applied to all recently developed finfish fisheries. It has not been applied to the developing krill fishery.

(e) There are no explicit arrangements for addressing the effects of adverse environmental change and impacts on harvested stocks, or on associated or dependent species. To some extent, adverse environmental change is incorporated in the design of agreed management procedures, in that they account for expected natural variability in recruitment and they reduce the recommended catches in response to decreasing stock status no matter what caused the decreasing stock status. However, there are no agreed management procedures for all of the harvested stocks of interest to CCAMLR and it should be noted that adverse environmental change may affect non-harvested species (including dependent species) rather than the harvested species, and there are no contingency plans for how fisheries would be managed in the event of significant and adverse environmental change.

103. Mooney-Sues and Rosenberg (2007) concluded that CCAMLR had the most comprehensive approach to implementing the precautionary approach among the 13 RFMOs that they reviewed.

Review Panel conclusions:

104. CCAMLR has a very strong record of developing and applying the precautionary approach to the management of fisheries. CCAMLR is recognised internationally as a leader in this. In particular, the use of precautionary catch limits, the modified reference points for designated prey species and the arrangements for new or exploratory fisheries are exemplary.

105. However, there are areas where the current approaches are weak or could benefit from further consideration and development. These are:

(a) The arrangements for managing new or exploratory fisheries do not apply to the developing krill fishery. The RP has made a recommendation on this under Criteria 3.1.1 and 3.5.4.

(b) The arrangements for managing some established fisheries do not have the benefit of the information that would have been available had they gone through the arrangements now required for new or exploratory fisheries. Elements of the arrangements for new or exploratory fisheries could usefully be applied to

existing developed fisheries. These elements should be chosen so as to address issues that have not been adequately addressed but that would have been addressed had that fishery developed using the current arrangements for new or exploratory fisheries. The RP has made a recommendation on this under Criterion 3.1.1.

(c) While the arrangements for new or exploratory fisheries are exemplary practice, there remain cases where they have failed to result in sustainable fisheries. The RP has recommended through other Review criteria that experience with these arrangements be reviewed, that the causes of failure be identified and, as appropriate, the arrangements be changed, and that there be a more explicit definition of the categories of fisheries (e.g. exploratory, developing, developed, lapsed) and the conditions that apply to them (see Criterion 3.1.1).

(d) A related but different issue is the persistence of fisheries for long periods in the category new or exploratory. The management arrangements for new or exploratory fisheries are generally more precautionary than for other fisheries, so in that sense there is perhaps not a problem. But it is likely that this reflects other difficulties, such as a perceived inadequacy of the information requirements for new or developing fisheries (e.g. the information is inadequate to give the confidence to move to the next stage of development) or management arrangements for developed fisheries (e.g. the information requirements for developed fisheries are inadequate to support ongoing sustainability). The RP noted that the management arrangements for new or exploratory fisheries provide a form of access control that is not usually stipulated in developed fisheries. Only Members that have notified CCAMLR and received prior agreement can participate in new or exploratory fisheries, whereas only notification is required to participate in developed fisheries. The CCAMLR arrangements for new or exploratory fisheries are more precautionary in relation to capacity management than those for developed fisheries (see Criterion 3.3.3).

(e) The CMs on habitats, and related CMs on fishing gear impacting seabed habitats, are weak in their linkage to research and monitoring requirements. They would benefit considerably from greater linkage, further development and refinement.

(f) Consideration of management responses in the event of adverse environmental conditions is the only element of the Code of Conduct requirements that is not explicitly addressed by CCAMLR methods and procedures. The likely effects of climate change should be included in this consideration.

Review Panel recommendations:

1. The requirements for conservation of habitats should be reviewed, including existing relevant CMs relating to habitat protection, use of fishing gear that impacts habitats and the monitoring and research programs. As with other aspects of ecosystem management, this should seek a balance between impacts and exploitation.

2. Appropriate precautionary approaches and responses to adverse environmental conditions, including climate change, should be developed and adopted. This should recognise that adverse environmental conditions could affect the populations as well as the processes of the Antarctic ecosystem, and that effects could be manifested through changes to harvested species, associated species or dependent species separately or in combination. In the context of this criterion, attention is drawn to the recommendations under Criteria 3.1.1, 3.3.3 and 3.5.4.

3.5.3 Extent to which CCAMLR is applying uniform principles and procedures to all species in the Antarctic ecosystem

106. CCAMLR has well-developed processes and procedures to address and implement the Convention. These are developed through the scientific and management decision-making processes, and these processes are also used to provide coordination and consistency. The Commission and Scientific Committee are responsible for principles, policy and priority, while the expert Working Groups develop most of the specific details for CMs and information requirements.

107. There is a generally similar approach by CCAMLR across species, although this appears to be through evolving practice (especially practice for new or exploratory fisheries) rather than by clearly developed and articulated policy and intent. The GYM, the concepts of limit and target reference points, and the same reference points (modified according to the ecology of the species) are applied to all species for which there are directed fisheries. The by-catch of most species or groups of species is constrained by generic catch limits which, while small and precautionary, are not explicitly developed or justified in terms of achieving any particular outcome (e.g. acceptable depletion or risk). This is particularly the case for non-retained by-catch species. In the relatively few cases where population assessments of by-catch species are available, the same criteria have been applied as would be applied to harvested species. But it is not clear whether this is a general and accepted principle that would extend to all species, including non-retained by-catch species that are also key prey species. There is no explicit consideration of the recovery requirements and expected/acceptable recovery trajectories for species that are over-depleted.

108. The CCAMLR requirements for new and exploratory fisheries are widely applied to finfish. There are inconsistencies in three main situations: (i) finfish fisheries that were developed prior to the CCAMLR requirements for new and developing fisheries do not have all the information and management measures in place that would be required if they were developed now; (ii) some areas of national jurisdiction within the Convention Area have been excluded from some CMs, and particularly those applying to new and exploratory fisheries; and (iii) most of the requirements for new and exploratory fisheries are not applied to the developing krill fisheries, with the requirements for the krill fisheries being generally much lower. These issues are described further through other Review criteria.

109. There are general CMs for the protection and management of habitats but the specific objectives and links within those measures to future research, monitoring and management actions are unclear.

Review Panel conclusions:

110. There is a great deal of coherence and uniformity of principle and purpose in the procedures and CMs, consistent with the Convention. However, there are also some areas of inconsistency. These appear to have their roots in the history of development of CCAMLR and because separate Working Groups are responsible for developing approaches in different broad areas of responsibility. The different Working Groups understandably have somewhat different approaches. In recent years, CCAMLR has increased the use of joint meetings between Working Groups to address specific common issues and has introduced a 'cross-cutting' WG-SAM. These should help to address these differences. Also, the recommendations of the RP to review and, as appropriate, consolidate monitoring responsibilities are intended to enhance consistency as well as adequacy.

111. The lack of any CMs requiring biological data reporting and research and the lack of a mandatory observer program for krill fisheries are major gaps that limit the ability of CCAMLR to manage the krill fishery.

112. There are no specific recovery strategies and associated CMs for the recovery of depleted species. Recovery strategies should include recovery targets, time frames, monitoring and management actions. This issue is addressed through other Review criteria.

113. By-catch limits in many cases are applied to an aggregate group of species (e.g. sharks, whiptails, rays and skates). The catch limits that are applied are generally small but it is unclear what the limits are intended to achieve at the species level within these groups, what the acceptable limits of impact are, and whether the aggregate limits are likely to give a high probability of achieving the desired protection. This is especially an issue in groups that may contain species that are particularly vulnerable to fishing gears and/or that have small, localised or unproductive populations. The concern is not with the use of catch limits for aggregate groups of species, because such aggregate limits may be the most cost-effective management measure, but rather with the basis for selecting the species to aggregate and the appropriate catch limit for the group.

Review Panel recommendations:

1. Explicit goals and criteria for acceptable impact on all the various categories of species in the CCAMLR management system (e.g. depleted species, harvested species, retained by-catch, non-retained by-catch, trophically dependent species, habitat-forming species and species that constitute VMEs should be developed and applied.

2. The RP strongly supported the views expressed in paragraphs 3.3 to 3.17 of the 2007 Scientific Committee report (SC-CAMLR-XXVI) regarding the collection of data from the krill fishery, and recommended that at least the requirements of the new and exploratory fisheries be applied to the krill fishery. The procedures for new and exploratory fisheries should be applied to all new and exploratory fisheries, including the developing krill fishery.

3. The basis for selecting species groups to which aggregate catch limits apply, and the basis for determining the aggregate catch limit, should be developed and applied. This relates particularly to aggregate catch limits on by-catch species, but in principle could also be relevant to limits for directed fishing.

4. More explicit criteria for acceptable impacts on habitats and habitat-forming species should be developed. The adequacy or appropriateness of the existing CMs should be reviewed in relation to these criteria and revised as appropriate.

3.5.4 Extent to which CCAMLR has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new or exploratory fisheries

114. The CCAMLR approach to new or exploratory fisheries provides a structured approach to research, monitoring, assessment and precautionary catch levels for target species and by-catch during fishery development. It is intended to ensure that there is sufficient information available to support orderly development of a sustainable fishery. This approach has been applied to all recently developing fisheries for finfish and has generally been successful. As noted through other Review criteria, however, there are some remaining issues and challenges:

(a) The CCAMLR approach for new and developing fisheries has not been applied to the developing krill fishery, or to some areas of national jurisdiction within the Convention Area.

(b) The experience with application has not been uniformly successful in delivering development of a sustainable fishery, despite the considerable efforts made. The cause of failure is not always clear, but in some instances IUU fishing is implicated. There remain questions about the adequacy of the information that is available to support management during fishery development.

(c) Several fisheries remain in the mode of 'new or exploratory' for long periods, rather than transiting to become established fisheries. There may be an incentive for a fishery remaining in 'new or exploratory' mode related to the need for Members to nominate and receive prior agreement from CCAMLR in order to fish each season in a new or exploratory fishery; this limits the access to the fishery each season, whereas other finfish fisheries are open-access and simply require notification. Participation in the developing krill fishery requires prior notification but not prior CCAMLR agreement.

115. There has been very little focused assessment or management attention given to recovering species and stocks that were over-depleted by unregulated fishing prior to the establishment of CCAMLR.

Review Panel conclusions:

116. As discussed through previous Review criteria, CCAMLR has an exemplary record for developing and applying management measures for new or exploratory fisheries. There are

shortcomings in the scope of application, and these are addressed in RP recommendations under Criteria 3.1.1 and 3.5.4. Similarly, there is a need to learn from the (relatively few) cases where the CCAMLR approach did not result in development of a sustainable fishery and to modify the approach as appropriate. This is also addressed in RP recommendations under Criterion 3.1.1.

117. Recovery of previously depleted species is not adequately addressed. This is discussed previously and RP recommendations are provided under Criterion 3.1.1.

Review Panel recommendations:

For this criterion, attention is drawn to the recommendations under Criteria 3.1.1 and 3.5.5.

3.5.5 Extent to which CCAMLR has taken due account of the need to conserve marine biological diversity and minimise harmful impacts of harvesting, research, conservation and associated activities on marine living resources and marine ecosystems

118. CCAMLR has a wide range of management measures and other initiatives in place to address conservation of marine biodiversity and the impacts of human activities. These include:

(a) Limitations on commercial bottom trawling, including prohibition of bottom trawling in depths less than 550 m adjacent to the Antarctic continent, prohibition of bottom trawling in areas not covered by a relevant CM, prohibition of bottom trawling on VMEs (i.e. seamounts, hydrothermal vents, cold-water corals and sponge fields) in the absence of specific CMs to protect these ecosystems, and requirement of scientific assessment of the effects of proposed trawl fishing by the Scientific Committee. These measures do not apply to the areas of national jurisdiction around Kerguelen, Crozet and Prince Edward Islands.

(b) Mitigation measures for incidental mortality of seabirds and marine mammals in longline and trawl fisheries. These measures do not apply to longlining in the areas of national jurisdiction around Kerguelen, Crozet and Prince Edward Islands, and they do not apply to trawling in the areas of national jurisdiction around Kerguelen and Crozet Islands.

(c) Limitations and the need for assessment of the impacts of research activities, including research trawl sampling. These measures do not apply to the areas of national jurisdiction around Kerguelen, Crozet and Prince Edward Islands.

(d) Management of the impact of land-based activities, including land-based tourism, is by interaction with Parties to the Antarctic Treaty south of 60°S.

(e) The extensive arrangements for determining and implementing catch limits for target and by-catch species, including in new and exploratory fisheries,

contribute to the maintenance and management of biodiversity. Most of these do not apply to the areas of national jurisdiction around Kerguelen, Crozet and Prince Edward Islands.

119. There is a process under way, with some interim results, to map biodiversity, define bioregions and ultimately to design MPAs in the Convention Area.

Review Panel conclusions:

120. There are several measures and processes in place to manage elements of biodiversity and specific threats to biodiversity at its various levels (i.e. genetic, species and ecosystems). These are mostly and understandably developed from a fishery management and impact perspective. However, there is not an articulated intention or plan regarding the intentions and management of biodiversity overall. There are no explicit goals or criteria to guide the development of specific CMs to conserve biodiversity, or to allow review of CMs developed for other purposes for their contribution to, or effects on, conservation of biodiversity. The consequences of excluding most of the CCAMLR CMs relevant to this Review criterion from some areas of national jurisdiction is not clear and has not been assessed. It is expected that the effect will depend on the details of the management measures imposed by the respective national jurisdictions, so it is highly desirable that these are known and understood in the context of the CCAMLR management arrangements and achieving the objectives of the Convention.

121. CCAMLR makes extensive use of spatial management as a part of its fishery management. This management implicitly establishes and uses most of the categories for protected areas that are recognised internationally (i.e. the Anon. (1994) protected area categories that range from strict nature reserves through species/habitat management areas to managed resource areas). However, the contribution of the existing protected areas (in the IUCN sense) to providing comprehensive, adequate and representative protection for overall biodiversity in the Convention Area has not been examined. The recent work to develop a bioregionalisation for the Convention Area will help in this process.

122. There do not appear to be explicit assessments, arrangements or plans to manage the impacts of tourism on the marine ecosystem.

Review Panel recommendations:

1. An overall strategy and plan should be developed to address conservation of biodiversity in the Convention Area, including the use and contribution of fishery management measures. This should include consideration of providing comprehensive, adequate and representative protection for overall biodiversity in the Convention Area.

2. The consequences of excluding most of the CCAMLR CMs relevant to this Review criterion from some areas of national jurisdiction should be assessed, and, as necessary, mechanisms should be established to ensure that consistent and coherent management of biodiversity in the Convention Area is achieved.

3.5.6 Extent to which CCAMLR has adopted measures to minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target Antarctic marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques

123. CCAMLR has adopted and applied specific CMs in relation to pollution and waste discharge, so as to prevent pollution, meet international requirements regarding pollution (e.g. MARPOL 73/78) and to prevent specific impacts on the Antarctic ecosystem. These measures include prohibition of the use of plastic bait-box bands, and the dumping or discharge of oil, paint, garbage, offal, ash and sewage within 12 n miles of land or ice shelves, food waste in particles larger the 25 mm, any plastic material and poultry products. These measures do not apply to the areas of national jurisdiction around Kerguelen, Crozet and the Prince Edward Islands.

124. The CMs that aim to minimise or reduce by-catch also reduce the quantity of catch subsequently discarded.

125. There are protocols to monitor and report debris on beaches. There are also requirements to mark all fishing gear (except in the areas of national jurisdiction around Kerguelen and Crozet Islands). There is a requirement to report lost fishing gear from research activities. There is not a requirement to report lost fishing gear from most commercial fishing operations, although there are intermittent reports or comments from some countries. There are numerous reports through the various processes of the Scientific Committee of wildlife and fish found to have interacted with lost fishing gear, including ingestion, hooking or entanglement. IUU fishing is thought to contribute strongly to this problem, but it is unclear what contribution is made by fishing that is regulated by CCAMLR. The contribution of lost fishing gear to mortality of fish and other elements of the Antarctic ecosystem has been occasionally examined through the various Working Groups, usually in response to particular issues or reports. But it is not routinely or comprehensively examined. It is unclear whether or not this is a significant weakness.

126. There is a prohibition on the commercial use of deep-sea gillnets. There are limitations and, in all but one area, a prohibition on the use of bottom trawls. The intention is to limit trawling to the areas where it had been used prior to 2007 without specific assessment and decision for expansion.

127. There is a very considerable amount of bait introduced to the waters of the Convention Area by longline fisheries, but there does not appear to have been consideration of the risks (if any) that this poses through the introduction of diseases or parasites.

Review Panel conclusions:

128. Overall, CCAMLR has taken significant measures to address the effects of lost or discarded material on the marine ecosystem, and to differentially encourage the use of fishing gears that have least environmental impact.

129. The reporting of lost gear and the impact of lost gear is not comprehensively addressed. Nor is the potential effect of the introduction of bait into the Antarctic ecosystem.

Review Panel recommendations:

> **1. The reporting requirements for lost gear from commercial fishing operations should be improved and strengthened[14].**
>
> **2. The likely scale and impact of lost fishing gear on fishery target species, and associated and dependent species should be assessed. If this is significant, ongoing procedures should be established, as appropriate, to assess these impacts and account for them in management decision-making.**
>
> **3. Consideration should be given to the risks posed by the introduction of bait into the Convention Area.**[15]

3.6 Capacity management

130. Effective fisheries management requires knowledge about the resource and its ecosystem, well-developed management arrangements and comprehensive surveillance and enforcement. Contemporary fisheries management suggests that in most cases applying catch limits to target and by-catch species is the most effective means of meeting conservation objectives. However, as there are regularly additional objectives that need to be pursued (related and dependent species, ecosystem impacts etc.), additional controls will be required to ensure desired outcomes are achieved.

131. Arguably the most important issue currently confronting fisheries around the world is excess fishing capacity. The sad reality is that many fishing States have, over an extended period, not sought to balance stock sustainability with fishing effort or capacity. In fact, the 'tools' they have used in managing domestic fisheries have often sent perverse economic signals to fishing operators and have encouraged greater investment in fishing capacity (subsidies, management arrangements which have exacerbated the race to fish etc.). It is highly likely that a significant amount of global IUU fishing is a direct result of excess fishing capacity in the guise of relatively cheap vessels which either have been made redundant by new and more sophisticated vessels, or simply had no possible alternate use as managed fisheries have become further limited and more high-seas stocks come under formal management arrangements.

132. Article 6.3 of the Code of Conduct for Responsible Fisheries (United Nations, 1998) specifically deals with overfishing and excess fishing capacity and requires that management measures be implemented to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilisation.

133. The RP's general view is that the arrangements currently in place in the Convention Area have served CCAMLR well and probably not resulted in a significant increase in

[14] See also recommendation 1 under Criterion 2.5.1.
[15] See also recommendation 1 under Criterion 2.3.1.

capacity. This is possibly due to the nature of the fisheries involved and their large distance from established infrastructure and home ports. However, this has not stopped significant IUU activity and, with global stocks at all-time low levels, the pressure on healthy stocks and fisheries from IUU activity will only increase. The RP noted that the precautionary approach to stock conservation adopted by CCAMLR probably results in higher catch rates and better profitability than in many places outside the Convention Area, and this success probably exacerbates the problems of IUU fishing and capacity management. There has also been anecdotal evidence which suggests that some of the IUU fishing in the Convention Area has been as a direct result of legitimately operating vessels moving from CCAMLR fisheries as these fisheries reached their catch limit and were closed.

134. The RP is concerned that fisheries management in the Convention Area is entering a new phase, with significant additional interest in the krill fishery, continued high interest in finfish fisheries and the unknown impacts of climate change. The RP is worried that the past approaches used by CCAMLR to manage fishing capacity will not be sufficient to meet these new challenges.

135. Contemporary best-practice fisheries management would not just rely on competitive catch limits, the current CCAMLR approach, to manage this dynamic situation. It would also want to ensure it was not providing perverse economic signals to Members and Acceding States (i.e. CPs and fishing operators). The current management approach uses competitive catch limits which will encourage greater participation in the fisheries and a race to fish, and thus encourage excess fishing capacity and excess fishing effort as operators seek to maximise the quantity they are able to take of the catch limits. By contrast, an allocated catch limit will ensure that each CP and fishing operator knows exactly what they are allowed to catch prior to fishing operations commencing. In this way they will be able to take more rational economic decisions on whether to participate and at what level in terms of their investment in capital and labour (vessel and crew).

3.6.1 Extent to which CCAMLR has identified fishing capacity levels commensurate with the conservation, including rational use, of Antarctic marine living resources

Review Panel conclusions:

136. The RP considered that CCAMLR has identified and implemented binding precautionary catch limits for key target and by-catch species in line with its obligations under the Convention. This has enabled the rational use of Antarctic marine living resources while pursuing conservation objectives.

137. CCAMLR has not, however, sought to identify the capacity needed to harvest these resources sustainably. This is of significant concern. The absence of this identification could lead to a 'blow-out' in fishing capacity and increased IUU fishing activity. It is also likely to make it more difficult to agree on precautionary conservation-oriented catch limits in the future. Furthermore, it is not consistent with the FAO Code of Conduct for Responsible Fisheries.

Review Panel recommendations:

1. CCAMLR should develop and apply methods to identify fishing capacity levels that are commensurate with sustainable harvests from the fisheries in the Convention Area.

3.6.2 Extent to which CCAMLR has taken actions to prevent or eliminate excess fishing capacity and effort

Review Panel conclusions:

138. The RP did not consider that the management measures in place prevent or eliminate excess fishing capacity and effort. There are CMs that regulate a range of inputs, including the gear that can be used and where fishing can take place. Also, there are requirements for notification and CCAMLR agreement prior to engaging in new or exploratory fisheries, and for notification prior to engaging in krill fisheries. But these measures are described and justified in relation to achieving conservation outcomes rather than preventing excess fishing capacity and effort. And they do not appear to have ever been used to prevent excess fishing capacity and effort.

139. The RP considered that the potential blow-out in fishing capacity and effort in CCAMLR fisheries warrants attention now, so as to develop and implement management tools which will enable CCAMLR to control capacity and effort increases in both the krill and finfish fisheries.

140. The RP is mindful of concerns which exist within CCAMLR with respect to the allocation of catch limits that are set to control the overall catch. It does not consider that these concerns are sufficient to dismiss the need to control effort and excess capacity. On the contrary, the RP considered the absence of fishing capacity and effort controls in CCAMLR significantly detracts from the admirable ecosystem and precautionary management arrangements that are in place. The lack of controls on fishing capacity and effort provides a serious risk of undermining current conservation and management arrangements.

Review Panel recommendations:

1. CCAMLR should establish a small group of experts to explore and report on the advantages and disadvantages (including cost and feasibility) of approaches and actions to prevent or eliminate excess fishing capacity, and review and adopt appropriate approaches and actions as a matter of urgency. The options explored should include:

(a) arrangements to constrain capacity using additional input controls (e.g. limit vessel numbers, days fished, access to particular areas etc.) and significantly increase spending on surveillance and enforcement activities to monitor these additional controls;

(b) a system of annual tradable units of quota with a very clear understanding that they bestow no ongoing rights and will be reallocated for each successive fishing period.

3.6.3 Extent to which CCAMLR monitors the levels of fishing effort, including taking into account annual notifications for participation by Contracting Parties

141. CCAMLR does monitor fishing effort very broadly through two mechanisms: (i) reporting of the effort expended by vessels that are fishing or have fished, with the delay being up to one year depending on the fishery, and (ii) notifications from CPs who seek authority to fish (in the case of new and exploratory fisheries) or intend to fish (in the case of krill and all other fisheries). The effort expended is reported in detail, and analysed through the various CCAMLR Working Groups and the Scientific Committee. The notifications are of the number of vessels and, while the CCAMLR vessel register provides some information on vessel specifications, there is no detailed assessment of the fishing effort and capacity that these vessels might be capable of.

Review Panel conclusions:

142. CCAMLR monitors expended fishing effort closely. But it monitors fishing capacity only very broadly. While this is better than no assessment of fishing capacity at all, it does not represent current best practice.

143. While CCAMLR fisheries have output controls (i.e. catch limits), these are competitive and therefore can be expected to provide incentives for the development and deployment of excess capacity. If competitive catch limits continue to be used, there will be a need for additional input controls to avoid excessive capacity in the fisheries. As operators become more efficient and expand non-limited inputs, there is need for regular assessment of effective fishing effort and development and implementation of additional input controls to counter the expansion of fishing effort. The more complex these arrangements are made, the greater the level of surveillance and enforcement is required to ensure the arrangements are being complied with. This is a consequence of the current CCAMLR management model, which does not include annual or longer-term allocations and, while this model remains, CCAMLR must put greater focus on measuring and constraining fishing capacity and effective effort. This will involve additional costs for all involved.

Review Panel recommendations:

1. CCAMLR should review the information available to it through current notification and reporting processes for adequacy in determining fishing capacity and effective effort. CCAMLR should consider and select the most appropriate measures for its management of fishing capacity, and introduce the relevant monitoring and reporting arrangements to support ongoing management of fishing capacity.

Chapter 4

Compliance and Enforcement

1. The RP recognised that compliance with the terms of the Convention and with CMs is vital if CCAMLR is to meet its objectives on the conservation of marine living resources, including their rational use.

2. It was noted that in recent years there has been general compliance with CMs by Members (and Acceding States) and that, over time, levels of compliance have tended to increase. However, there continue to be breaches by vessels flagged to CPs although, based on the information before the RP, these appear on the whole to be more of a technical nature than blatant acts of illegal fishing, or acts associated with such fishing, although specific information on these activities is hard to come by.

3. There was a lack of detailed information available to the RP on activities by NCPs which undermined the objectives of the Convention but, in the main, it was considered that these tended to be more substantive in nature.

4. The most substantive non-compliance by both CPs and NCPs would appear to involve:

   (a) fishing without due authorisation;

   (b) fishing contrary to CMs, or in a way that undermines CMs (including non-reporting of data, being in a closed area, catching over limits, unregulated fishing etc.);

   (c) fraud – in relation to, for example, the CDS, licences/permits, the VMS;

   (d) reflagging of fishing vessels at sea;

   (e) transhipment – so avoiding Port State controls (CPs are urged to ensure that their vessels land catches in the ports of States that are fully implementing the CDS);

   (f) prohibited fishing techniques;

   (g) failure to fulfil agreed obligations in new or exploratory fisheries (i.e. tagging);

   (h) non-notification of presence in an area.

5. IUU fishing on toothfish has been a widespread and significant problem in the Convention Area and has resulted in an estimated 133 000 tonnes of catch over the last 10 years (Appendix III, Table III.12). The RP understood that most of this catch has been taken by vessels of NCPs. IUU fishing has been a major issue for the Commission over this period and has required detailed attention from CPs and cooperating NCPs.

6. CCAMLR's focus on IUU activities has seen the progressive introduction of a suite of compliance arrangements in addition to those which were already in place prior to IUU fishing becoming widespread. These include:

- vessel and gear marking
- Flag State licensing
- Port State controls
- C-VMS
- CDS
- black-listing of both CP and NCP vessels
- control over nationals.

7. Some of these provisions were innovative when first adopted by CCAMLR and continue to be regarded amongst international fisheries organisations, and more broadly, as examples of best practice (e.g. CDS). CCAMLR needs to ensure it continues to improve the efficiency, reach and use of these tools.

8. Despite the combined effect of these provisions, IUU fishing continues to be a significant problem in some areas of CCAMLR waters, with the IUU take far in excess of the legal catch, resulting in an unsustainable situation. The total estimated IUU take in the Convention Area in 2005/06 was 3 420 tonnes and in 2006/07 3 615 tonnes (Appendix III, Table III.12). While this is well below the peak years of IUU activity in 1996/97 of 32 673 tonnes, it remains a significant and intractable problem which continues to require detailed attention and further compliance actions by the Commission.

4.1 Flag State duties

4.1.1 Extent to which CCAMLR Members are fulfilling their duties as Flag States under the treaty establishing CCAMLR, pursuant to measures adopted by CCAMLR, and under other international instruments, including, inter alia, the 1982 Law of the Sea Convention and the 1993 FAO Compliance Agreement, as applicable

Background

9. An essential prerequisite to operating a ship responsibly on the high seas is for such a ship to acquire the flag of a State, usually through the act of registration of that ship with the State. UNCLOS confirms the right of every State to operate ships flying its flag on the high seas subject to some general provisions (e.g. in its Articles 91, 94 and 117).

10. Article 91 of UNCLOS allows for every State to fix conditions for the granting of its nationality to ships, for the registration of those ships and for the right to fly its flag. It provides for ships to have the nationality of the State whose flag they fly, but also requires that there must be a 'genuine link' between the State and the ship.

11. Article 94 of UNCLOS provides a clear statement of Flag State duties. Importantly and foremost it requires that 'Every State shall effectively exercise its jurisdiction and control in administration, technical and social matters over ships flying its flag' (United Nations, 1983). Furthermore, it specifies such matters as: the maintenance of a register of ships; assuming jurisdiction under its internal laws over each ship; issues relating to safety at sea; regular surveys of vessels; that each ship must have an appropriately qualified master and officers; and that the crew is able to observe all necessary international regulations covering safety, prevention of collisions, marine pollution etc.

12. The basis for these requirements stems from the fact that the high seas are not subject to the jurisdiction of any State. To achieve responsible and orderly governance of the oceans, the right to navigate on the high seas must therefore be restricted to those vessels which, through their formal link to a State, are subject to its jurisdiction and can be held to account in terms of compliance with international rules.

13. The Flag State has primary responsibility under international law for controlling the fishing activities of its vessels, both within its EEZ and on the high seas. However, where a foreign-flagged vessel is fishing within a Coastal State's EEZ, the Coastal State may take such measures as are necessary to ensure compliance with its laws and regulations. If a vessel is fishing in waters under the jurisdiction of the Flag State or on the high seas, that Flag State has the sole right to control the fishing activities of the vessel.

14. Article 116 establishes the right of all States to fish on the high seas, subject to meeting international obligations and to the general conditions established in Articles 117 to 120. UNCLOS, however, provides only limited guidance in relation to fishing on the high seas, requiring Flag States to take responsibility for their vessels and nationals as necessary to conserve and manage high-seas resources. Articles 117 to 119 provide guidance on conservation objectives and general principles to be followed, including that:

(a) CMs should be based on the best scientific advice available;

(b) CMs should take into account associated and dependent species;

(c) States should establish RFMOs for the conservation and management of living resources;

(d) scientific and statistical data should be contributed and exchanged at subregional, regional and global levels.

15. In principle, the implementation of Flag State duties and the responsibility that States collectively conserve and manage high-seas resources are commendable. But, in reality, there have been, and continues to be, instances of lack of Flag State control and failure to discharge conservation and management obligations. This is a major problem when it comes to cooperative regional fisheries management. Compared to global merchant marine shipping, the high-seas fishing fleet is comparatively unregulated. Fishing vessels are exempt from many of the IMO conventions that apply to merchant vessels. This has resulted in increasing regulation on merchant vessels in respect of at-sea safety, security, sub-standard shipping, environmental issues, and ownership and control. As a result of the relative lack of regulatory measures aimed specifically at fishing vessels, a number of international fisheries agreements[16] include provisions aimed at requiring Parties to them to exercise greater control over their fishing vessels. Some of these, mentioned above, include the need for:

(a) vessels authorised to fish by a Flag State to comply with all sub-regional and regional management and CMs;

[16] The most important of these being Part V of UNFSA: (www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm), dealing specifically with Duties of the Flag State, and Article III of the 1994 FAO Compliance Agreement: (www.fao.org/DOCREP/MEETING/003/X3130m/X3130E00.HTM).

(b) a Flag State to exercise effective control over its vessels and to ensure compliance with all of its international responsibilities;

(c) fishing by its vessels on the high seas to be expressly authorised by the Flag State;

(d) effective MCS of authorised vessels;

(e) the Flag State to maintain records of all of its vessels authorised to fish and their fishing operations; and for

(f) these records to be collated at the regional and global level by RFMOs and FAO.

16. The effectiveness of these provisions requires that Flag States have ratified all the key agreements, and that they are implementing fully all the requirements of those agreements. Unfortunately, the reality continues to be otherwise. Lack of, or inadequate, Flag State control remains one of the major problems in high-seas fisheries governance and within the Convention Area.

CCAMLR experience

17. The history of compliance by CPs has been variable. In the earlier days of the toothfish fishery, despite the presumed intention of Parties to comply with CMs, non-compliant activities were, at times, common-place amongst their operators. These included unauthorised fishing within the Convention Area, reflagging between Members and when it suited, to flags of NCPs. These activities suggested that there were Parties who were failing to implement their Flag State obligations to the extent required under international law or to the spirit and intent envisaged by the Commission. Such lack of control may have been for a variety of reasons, including the lack of domestic legislation providing for effective control of operators and vessels or the inability to monitor activities at significant distances from the Flag State. Reflagging suggests a continuing desire by some unscrupulous operators to find the State least able, or willing, to implement its obligations as a responsible Flag State.

18. With increasing emphasis by CCAMLR on compliance, some operators sought to avoid or minimise regulatory control of their vessels through complex beneficial ownership arrangements and renaming and reflagging vessels. This, at one stage, became common practice and resulted in a larger number of NCP vessels, including from flags of non-compliance, fishing in CCAMLR waters, therefore undermining conservation objectives and thwarting CCAMLR's efforts to control IUU activities. Elements of this practice continue, although at a greatly reduced level than that experienced previously.

19. It is apparent that the ability of many Flag States to maintain a 'genuine link' is difficult at best and, despite the international community's desire for greater control over fishing vessels, reflagging for less than genuine reasons persists.

Review Panel conclusions:

20. It can only be concluded that CPs continue to act in good faith in respect of the negotiation, adoption and implementation of CMs. That said, there still exists the practice of

some nationals and operators exploiting loopholes through reflagging and complex beneficial ownership arrangements which circumvent CCAMLR regulations, as enacted into domestic law.

21. The RP noted the adoption of CM 10-08 which came into force on 1 July 2008 (through an explicit delayed mechanism), but also perceived that difficulties might arise over the implementation of this particular measure.

22. For this measure to achieve maximum effectiveness there will need to be transparency amongst CPs in relation to the domestic legislative arrangements that they enact. Loopholes available to nationals and operators to circumvent CMs will be minimised if CPs ensure that their domestic arrangements are not only greatly strengthened but also, to the extent possible, harmonised. Transparency and shared experiences between Parties in this regard should greatly assist and will hopefully reduce or eliminate opportunities for unscrupulous operators to exploit different legal standards in domestic legislations.

Review Panel recommendations:

1. CPs should cooperate in the implementation of CM 10-08 through their respective domestic legislation by:

(a) exchanging information, as appropriate, on their draft and final legislation in respect of controls over their nationals;

(b) considering reciprocal and cooperative arrangements which might enhance the effectiveness of this measure.

4.2 Port State measures

4.2.1 Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Port States, as reflected in the Code of Conduct for Responsible Fisheries Article 8.3

Background

23. A relatively new and emerging role within broader fisheries management arrangements, particularly in relation to high-seas fisheries and the fight against IUU fishing, is that of Port State control. As ports lie wholly within a State's territory and are therefore subject solely to its sovereign jurisdiction, international law acknowledges that States have wide discretion in exercising jurisdiction over activities in their ports. This may include denial of access to a port (a closed-port policy), access subject to strict arrangements (which may include detailed inspection of a vessel, its catch and associated records) or a more relaxed approach which allows open access and may or may not involve inspection of a vessel and/or catch.

24. As ports are the first point of entry into a State for persons or goods, they provide a logical point of control to monitor and verify the activity of foreign ships. This has been well

known and understood, with custom and immigration services monitoring respective movements for many years. Regional Port State arrangements have been used more recently to good effect to monitor and control merchant shipping, particularly in regard to adherence to agreed international standards relating to sub-standard shipping, sea safety and marine pollution, and most CPs are party to them[17].

25. In a logical extension of these arrangements, Port State control is now playing an increasingly important role in determining whether fishing on the high seas, regardless of whether it is subject to formal management arrangements or not, is consistent with the international community's desire and obligation to conserve fish stocks. Article 23 of the UNFSA reinforces this stating that 'A Port State has the right and duty to take measures, in accordance with international law, to promote the effectiveness of sub-regional, regional and global conservation and management measures'. It details some of the measures a Port State may undertake in fulfilling these obligations, including inspecting documents, fishing gear and catch, and prohibiting landings and transhipments where it is established that the catch has been taken in a manner which undermines the effectiveness of conservation and management measures on the high seas.

26. Catch documentation schemes are playing an increasingly important part in the overall conservation and management measures being implemented by RFMOs. Here again, ports play a vital role in these schemes by regulating landings, and monitoring the trade-flows of fish products, therefore enabling RFMOs and a full range of other interested Parties[18] to determine if the fish was caught consistent with conservation and management measures.

27. As with all similar arrangements, Port State controls will only be as effective as the weakest link in the chain. Until all Port States implement similar and consistent arrangements with respect to foreign fishing vessels entering their ports, loopholes will continue to exist. The FAO Model Scheme on Port State Measures to Combat Illegal, Unreported and Unregulated Fishing (FAO, 2007) is a useful first step. This model is now being further developed with work being undertaken on a legally binding instrument on Port State measures to prevent, deter and eliminate IUU fishing[19].

CCAMLR experience

28. As outlined above, States have the right to inspect any vessel that voluntarily enters their ports. Specific Port State provisions in relation to CCAMLR have been adopted through CM 10-03. These have been augmented by provisions in the VMS measure CM 10-04 and the relevant elements of CMs 10-06 and 10-07 (dealing with the listing of IUU vessels of CPs and NCPs respectively). In addition, Resolution 15/XXII urges CPs to restrict landings of toothfish to the ports of States fully implementing the CDS.

29. These elements taken together compare favourably with the intent of the FAO Code of Conduct. The effectiveness of all of these arrangements does, however, rely on States developing and implementing consistent arrangements in domestic law and ensuring that they are applied rigorously.

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[17] See, for example, www.tokyo-mou.org.

[18] These might include the Flag States, Market States, individual importers, exporters and retailers, and environment NGOs.

[19] See FAO (2008a).

30. Until such time as a legally binding Port State agreement is concluded by FAO, attempts to develop CCAMLR's Port State regulations further may be premature, and therefore not achievable. However, in keeping with CCAMLR's history of early adoption of innovative measures, consideration should be given by CCAMLR to adopting appropriate provisions of the FAO scheme as soon as it has been finalised. Many of these provisions will already be well known to CPs.

4.2.2 Extent to which these measures are effectively implemented

31. Despite the tonnages of toothfish being landed into CPs' ports, very few port inspection reports are being undertaken (Table 3 below), or if they are, then the reports of such inspections are not being submitted to CCAMLR as required by paragraph 4 of CM 10-03[20]. This suggests that current arrangements need to be reviewed, clarified and implemented fully by CPs.

Table 3: Port inspections of vessels carrying toothfish (CM 10-03) reported to CCAMLR. (These figures include about a dozen port inspections of IUU vessels.)

Year	Number of port inspections	No. of CPs providing reports
2000	1	1
2001	15	5
2002	12	2
2003	14	2
2004	32	3
2005	37	2
2006	40	4
2007	47	5
2008	32*	3

* Year to date

Review Panel conclusions:

32. While it is a matter for a Port State to determine and implement its port policy, the RP considered there may be greater virtue in allowing a vessel which is suspected of having undertaken IUU fishing, or is carrying IUU catch, to enter a port and be subject to inspection rather than prohibiting its entry as is required expressly by the obligation of paragraph 2 of CM 10-03. Entry and inspection could then allow for subsequent dialogue with the vessel's Flag State and the possible imposition of sanctions. Denying access to such a vessel would, in contrast, likely see the vessel land its catch elsewhere, in a third-party port, and for such IUU fish to then enter trade.

[20] Note the CDS effectively requires a port inspection before landing permission can be given. If these are being undertaken properly in respect of fishing inside the CCAMLR Convention Area and an inspection was done each time, then some 1 622 inspections should have been undertaken. The RP has no way of verifying the number and comprehensiveness of inspections undertaken as part of the CDS.

Review Panel recommendations:

1. CCAMLR should determine the format and minimum content of inspection reports and should set minimum timelines for their submission. Enhanced port inspection reporting would also provide a further means of verification of the CDS in an enhanced catch reconciliation system.

The effectiveness of CM 10-03 is, however, reduced by its focus on fishing vessels only, and moreover by being restricted only to vessels known to be carrying toothfish.

2. CCAMLR should develop a more comprehensive approach to port inspections by defining 'fishing vessels' to include reefer and fishing support vessels and widening the obligation to inspect to any fishing vessel suspected of carrying toothfish, or of having been engaged in fishing on that species in the recent past. The Commission may also wish to consider expanding inspection arrangements to cover all species harvested within the Convention Area.

At present CCAMLR has no such definition of a 'fishing vessel', and the most comprehensive statement of what constitutes 'fishing' is that found in paragraph X of the System of Inspection. The proposal in paragraph 2 above would not only enhance Port State inspections, but would also allow for the strengthening of other MCS provisions.

4.3 Monitoring, control and surveillance

4.3.1 Extent to which CCAMLR has adopted integrated MCS measures (e.g. required use of VMS, observers, catch documentation and trade tracking schemes, restrictions on transhipment, boarding and inspection schemes)

Background

33. An integrated approach to MCS is essential if fisheries management arrangements are to be effectively implemented. This requires a sound understanding of the management measures and their implementation, appropriate laws to ensure that they can be enforced and financial and human resources to support the arrangements. It is essential when dealing with high-seas fisheries, where effective MCS measures are inherently more difficult to achieve, that these arrangements be as comprehensive in their application as possible and that they be implemented by CPs and, wherever possible, by appropriate NCPs (e.g. the CDS requires wide Port State involvement and appropriate market measures).

34. The traditional view that MCS arrangements need to be fishery-based only, has been broadened in recent years with the realisation that it is not possible to monitor the location, fishing activities and catch of every vessel 24 hours a day. Vessel registers (in terms of both 'white' and 'black' lists), centralised VMS, at-sea and port inspections, regulation of transhipment, a contemporary CDS, enhanced trade monitoring, chain of custody arrangements, forensic accounting to monitor and marry-up catch and trade data, control over nationals, as well as enhanced Port and Market State arrangements are all being used to ensure the efficacy of MCS arrangements.

35. Increasingly, in dealing with IUU fishing, national management agencies and RFMOs have had to adopt more complex, demanding and integrated MCS arrangements to expose and deter unscrupulous operators and enforce management arrangements to minimise IUU activity. Such arrangements come with greatly increased demands on resources, including a major financial burden. At its heart, IUU fishing is a profitable, relatively low-risk activity – the chance of being apprehended and incurring penalties is low compared with the high profits from fishing. Integrated MCS activities need to change the risk/reward equation and in so doing reduce profit and desire to undertake IUU activity.

CCAMLR experience

36. Article XXIV of the Convention provides for observation and inspection schemes. These were initially articulated in the early 1990s and have been amended and added to since. Subsequently, as part of the suite of measures to combat IUU fishing, CMs on centralised VMS and the CDS have been adopted. In addition, the great majority of fisheries, both fully commercial and exploratory, now have a mandatory requirement for CCAMLR-designated scientific observers to be carried on board vessels. While data from these at-sea scientific observers have greatly enhanced management of the fisheries, observer reports, both in format and content, remain variable. CCAMLR has long recognised that the role of scientific observers is one of data collection rather than compliance. Other than reporting, post deployment, on sightings of presumed IUU vessels operating within the Convention Area, this remains the case.

37. The efficacy of CCAMLR MCS provisions has been variable. For example, since its inception, the System of Inspection has been used relatively infrequently by few CPs and only in restricted areas of CCAMLR waters. Between 1997 and 2007, some 110 at-sea inspections were undertaken under the System of Inspection by a small number of Members. Eighteen of those inspections recorded some level of violation of CCAMLR measures and, as a result, sanctions were imposed on 10 vessels. This low level of at-sea inspections is perhaps not surprising. The Convention Area is vast, covering approximately 10% of the global ocean area. In consequence, the opportunities for detecting, and then inspecting a vessel are small. In addition, as a result of the arrangements contained in paragraphs 20 and 21 of CM 10-04, CPs conducting surveillance and enforcement operations may not have access to real-time VMS data, either for planning these operations or potentially when undertaking them[21]. Even then inspections provide no more than a 'snapshot' of a vessel's operations, therefore further diminishing the likelihood of detecting infringements. In consequence, the number of times that sanctions, stemming directly from the result of inspections, have been imposed is few. In contrast, there are considerable costs of operating vessels (and aircraft) as inspection platforms in the Southern Ocean. In summary, the System of Inspection, as currently implemented, is far from an effective (or cost-effective) MCS tool.

38. As an additional means of surveillance, CCAMLR introduced a VMS in 1998. This required all vessels, other than vessels in the krill fisheries, to carry operational VMS. The scheme was extended in 2004 to a so-called 'centralised VMS' (C-VMS) whereby data from

[21] Based on advice from the Secretariat that all CPs are currently reporting in real-time, information pursuant to paragraph 20 of CM 10-04 would be available. However, paragraph 21 of CM 10-04 still requires the permission of the Flag State prior to VMS data being made available for the planning of surveillance operations.

vessels would be relayed to the CCAMLR Secretariat – either directly, or through the Flag State, with the Flag State retaining the right to decide on which data transfer option to opt for[22].

39. Certain of the mandatory requirements for VMS (although not all) were extended to krill fishing vessels in 2007.

40. Despite this, the C-VMS as adopted by CCAMLR has significant inherent flaws. If these are not addressed then the scheme, which is operated by the Secretariat at not insignificant cost to Parties, will potentially be a sub-optimum MCS mechanism. Under CM 10-04, and contrary to recommended best practice[23], not all CCAMLR fisheries are required to report real-time VMS data (there may indeed be a very considerable time-lag specifically in relation to non-exploratory fisheries), nor are such data required to be reported directly to the Secretariat. Furthermore, proposed surveillance/inspection activities or the verification of CDS information through the use of C-VMS data can, in effect, be obstructed by a Flag State denying access to the VMS data relating to its vessels. Such provisions in CM 10-04 have the potential to provide major loopholes in MCS arrangements and are contrary to best-practice recommendation[24]. Despite the apparent deficiencies in CM 10-04, the CCAMLR Secretariat has advised that all current VMS reporting is provided in real time with some 60% of vessels reporting in parallel to the Flag State and the Secretariat, and the remaining 40% reporting via the Flag State.

41. The CDS was regarded at its adoption in 1999 as an innovative compliance and trade-related measure and is still cited as an example of best practice. Its application has been widespread and largely successful in reducing the potential benefits from IUU fishing. The scheme has enabled CPs to engage more widely with other States that trade in toothfish and seek their cooperation. That said, there appears to have been some evidence of fraudulent activity, though this appears to have been significantly reduced by the wide application of electronic documentation. However, there is a more fundamental problem with the scheme. While it is termed a 'catch' documentation scheme, it may not in fact reflect the true extent of catches. The scheme, as it stands, is not required to mirror catch records, nor indeed is there any description of 'catch' in the CM. Rather, it is completed by the vessel master or authorised representative for each 'shipment' of catch landed or transhipped on each occasion that it occurs. The CM requires that each landing or transhipment be accompanied by a DCD. Landings without a DCD are prohibited. But, despite this provision, there remains the possibility that some of the catch may be landed in non-cooperating NCP ports or transhipped to fishing support vessels or reefer vessels at sea and subsequently landed as 'white fish'. Unfortunately, there remains scope to enable 'leakage' of toothfish from the CDS into trade. Anecdotal information suggests this is indeed occurring.

42. The role of transhipment in relation to the CDS remains particularly problematic. The scheme stipulates that transhipment must only be carried out under the control of a Port State (CM 10-05, paragraph 1(vi)). Although it cannot be quantified, it would appear that at-sea transhipment involving toothfish has occurred, and is occurring. Adding to this, section 9 of the DCD (CM 10-05, Annex A) creates a degree of ambiguity as to whether transhipment may take place both at sea and in port. This increases the potential for IUU fish to enter trade

[22] See paragraphs 10 and 14 of CM 10-04.
[23] See, for example, the recommendation on centralised VMS on pp. 47 and 122 of Lodge et al. (2007).
[24] See p. 47 of Lodge et al. (2007).

and for catches to exceed those set by the Commission. The CDS needs to be reviewed and further tightened to include a clear definition of transhipment and processes to enable catch as reported by the Flag State to be reconciled with the CDS and for this to be undertaken by the Secretariat.

4.3.2 Extent to which these measures are effectively implemented

43. While CCAMLR has clearly sought to develop and implement comprehensive MCS arrangements, there exist a number of deficiencies which continue to allow IUU fishing to occur relatively undetected. Further refinement of CM 10-04 relating to the C-VMS, including the requirement that reporting is in real time and directly to the Commission (through the Secretariat), and that it should cover all fishing activity, would greatly enhance its effectiveness. Further enhancement of the CDS, as recommended above and development of a policy and procedures that allow reported catch to be reconciled with the CDS would enhance, and also provide greater rigour to, the current MCS provisions.

44. A wider issue, which in recent years has had the effect of constraining CCAMLR's effectiveness, has been the lack of consensus on proposals that CCAMLR's regulatory powers be extended to any area outside the Convention Area. Article 1 of the Convention defines its area of application and there is no suggestion that the area should be amended by an extension northwards.

45. Notwithstanding that, CPs can, if they so determine, extend regulatory powers to their own flag vessels or to waters subject to their jurisdictions (and outside the Convention Area) or adopt domestic regulations consistent with CAMLR Convention provisions. Alternatively, CCAMLR might arrange for a wider application of its provisions through bilateral agreements such as MOUs.

46. Such action could provide a uniformity of approach, consistent with the regulations adopted for the Convention Area itself, and would strengthen means for the CPs collectively to meet the Convention's objectives, including taking action to extend CCAMLR's mitigation measures in respect of seabirds either to CP-flagged vessels operating on the high seas outside the Convention Area, or to waters subject to the jurisdiction of CPs. Such action would have undoubtedly reduced the considerable mortality that is still affecting seabirds (particularly albatrosses and petrels) that breed within the Convention Area but which are killed in fisheries outside CCAMLR waters. Similarly, constraining regulatory control of transhipment activities solely to the Convention Area provides the obvious loophole that reefer vessels (including such vessels flagged to CPs) can position themselves just outside the Convention Area and, with impunity, receive catches, legal or otherwise, taken from CCAMLR waters.

47. Improvements in bilateral cooperation, reporting more widely across a range of activities, including provision of VMS information (in relation to vessels authorised to fish CCAMLR waters) outside the Convention Area and greater transparency on port inspection, could all benefit from a similar approach.

Review Panel conclusions:

48. As individual elements of MCS, the existing CMs have variable effectiveness. In the RP's view this could be enhanced by the adoption of a more comprehensive and integrated approach, for example, through:

(a) linking reported catch data with both the CDS and C-VMS
(b) integrating the C-VMS with surveillance and inspection operations.

Review Panel recommendations:

1. The CDS should be amended to provide for the linkage of daily catch data with DCDs and that should definitions be revised to ensure there is no ambiguity as to when and where catch can be landed or transhipped (i.e. a clear definition of both 'in port' and 'at sea'). This may well require an explicit prohibition of all transhipments except under the control of an appropriate port or flag authority.

2. C-VMS data for all fisheries be reported directly to the Secretariat in real time.

3. There be unhindered access to real-time VMS data for surveillance and inspection activities (both in terms of their planning and implementation).

4. CCAMLR should review the approach to inspections adopted in RFMOs so as to develop a more effective and contemporary inspection regime.

5. Greater use should be made of multilateral inspections employing CCAMLR-designated inspectors from two or more Members. This would not only enhance the cooperation foreseen by Article XXIV, but sharing inspection platforms would also reduce associated costs.

6. There should be consistency in management and enforcement measures (including in the operation of the C-VMS) for finfish and other fisheries (including krill).

7. The effectiveness of CCAMLR would be increased if CPs were prepared, in certain instances, to apply CCAMLR provisions to, for example, their flag vessels operating north of CCAMLR waters in the high seas, or to areas subject to their jurisdiction. Alternatively, CCAMLR could consider tackling this issue through agreements (e.g. MOUs) to achieve similar outcomes.

4.4 Follow-up on infringements

4.4.1 Extent to which CCAMLR, its Members and Contracting Parties follow-up on infringements to management measures

49. Specific CMs and the System of Inspection place obligations on CPs to take action, in respect of infringements, and to report to the Commission on any sanctions they have imposed. Such reports have been provided on a number of occasions. However, no quantifiable assessment can be made as to the proportion of infringements that have attracted sanctions and that are then reported on.

Review Panel conclusions:

50. Good practice suggests that where infringements occur they should be reported in a timely manner to enhance transparency of operation and demonstrate that CPs are fully implementing their obligations.

Review Panel recommendations:

1. The various reporting mechanisms within CMs, in relation to infringements, should be reviewed to ensure that the mechanisms of reporting are clear, concise and consistent between measures.

2. In respect of legal sanctions, reports should provide a link, preferably by electronic means, to the findings of the court (or equivalent) giving details of the penalty and sanction imposed. Such details should be archived by the Secretariat.

Readily available information on CPs' domestic legislation would further aide transparency.

3. CCAMLR should create a 'library' within the Secretariat of relevant national legislation enacted by CPs. Such information should be updated as and when such domestic legislation is amended.

4.5 Cooperative mechanisms to detect and deter non-compliance

4.5.1 Extent to which CCAMLR has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance)

51. Cooperative arrangements rely on, and work best when, the voluntary cooperation of the Parties is maximised. As CCAMLR has no dedicated surveillance and enforcement capability of its own, it must rely on CPs to provide information and services. There is, however, an important linking and facilitating role which CCAMLR must play in order to maximise the contribution of CPs in this regard.

CCAMLR experience

52. Direct references to cooperation between CPs within the Convention and related key texts are not numerous but include, for example, its preamble and Articles XV and XXIV.

53. CCAMLR recognised the importance of assessing compliance early on through the creation in 1987 of SCOI. This Standing Committee reported directly to the Commission with its findings and recommendations. Following a review of the scope and content of the Standing Committee's tasks, and in recognition of the increasing workload that it faced, the Commission refocused attention on compliance and inspection by replacing SCOI with SCIC under terms of reference adopted in 2002. The work of SCIC occupies a significant proportion of the time available to the annual meetings of CCAMLR.

54. In theory, the institutional procedures afforded to SCIC provide it with a ready means of sharing between CPs information on all aspects of compliance (and non-compliance). The Committee, at its annual meetings, has before it considerable information and data which have been submitted by both Members and by the Secretariat. The latter in particular provides the Committee with synthesised data and feedback on all aspects relating to the Committee's agenda. These include reports, as appropriate, on such matters as;

- inspections, including at-sea and port inspections (under the System of Inspection and CM 10-03 respectively);
- assessments of the extent of IUU fishing throughout the Convention Area;
- sightings of presumed IUU vessels within CCAMLR waters;
- implementation of CMs 10-06 and 10-07, along with provisional IUU lists;
- the effectiveness of C-VMS (under CM 10-04);
- the effectiveness of the CDS (under CM 10-05).

55. CCAMLR has, through CM 10-02, established a list of vessels licensed to fish in CCAMLR waters (a 'white-list'). This list, along with comprehensive information on each vessel and colour photographs, is accessible through the CCAMLR website. This mechanism enables CPs to cooperate through information-sharing on licensed vessels.

56. Through the adoption of CMs 10-06 and 10-07, CCAMLR has also provided the means to draw up 'black-lists' of CP and NCP vessels respectively, engaged in IUU fishing. The procedures set out in CMs 10-06 and 10-07 are comprehensive and unambiguous and are, to some extent, operating well by providing useful information on IUU fishing vessels as well as setting out actions that might be taken against such vessels. However, whilst the lists produced via these procedures are accurate at a given time, they can quickly become obsolete. By their very nature, IUU fishing activities are dynamic. A characteristic of IUU operators is their ability rapidly to change flag, port of operation, company structure and beneficial ownership, vessel name and even the physical appearance and structure of a vessel in response to changing circumstances. CCAMLR may wish to give consideration to further streamlining the procedures used to establish these lists and to updating them more frequently. While the information relating to the CM 10-06/10-07 lists is publicly available via the

website, CCAMLR should also consider providing this information directly to other bodies, for example, the FAO Global Record (FAO, 2008b) once it is operational, or other more comprehensive IUU lists, so that the information can be disseminated widely.

57. It would appear to the RP that cooperation under CM 10-06 is far from working to best effect with consequent implications for effective actions against incidents of non-compliance. It was noted that CM 10-06 had been negotiated, and adopted in 2002 by all Parties without dissent. No formal reservations had been made on the CM under Article IX by any Member subsequent to its adoption.

58. A logical implication of CM 10-06 was that the vessel of any CP to the Convention might be incorporated into the IUU list. The RP was concerned to learn that effective implementation of this measure was being impaired by certain Members denying consensus that would see their flag vessels so listed. Such actions appeared to the RP to be contrary to justice (when the vested interests of any one Member had the ability to block a decision of the rest of the Commission), undermined the effectiveness of the measure and therefore in effect severely eroded the ability of CCAMLR to deal with IUU activities. In a wider context, the credibility of CCAMLR had been significantly impaired by such action. The RP recommended CCAMLR remedy the situation as a matter of priority.

59. The RP did not have sufficient information available to it to make any comment on the sharing of information on non-compliance. However, if as is evident in relation to other areas, information is not shared or not shared in a timely manner, then CCAMLR might wish to consider what enhancements need to be made to streamline these processes and enhance the information flows.

60. The RP considered that CCAMLR has established 'adequate' cooperative mechanisms. SCIC has comprehensive terms of reference and a wide remit. Advice available to the RP, however, suggests that it may struggle to meet all these requirements due to the resources and time available, and the increasing number of items requiring attention (see more detailed comments below).

4.5.2 Extent to which these mechanisms are being effectively utilised

61. The degree to which cooperation is affected is difficult to determine in any quantifiable sense. A few examples do exist, for example, some of the States with sovereign territory within the Convention Area are cooperating in a reciprocal way through bilateral or trilateral agreements on surveillance and at-sea inspection activities. Such activities are, it is understood, undertaken both within respective areas of maritime jurisdiction as well as on the high seas. The terms and extent of such cooperative agreements amongst Members has not to date, however, been shared with Parties more widely.

62. More generally, the practice of undertaking cooperative multilateral at-sea inspections under the System of Inspection has not been utilised widely by CPs (see also the comments under Criterion 4.3.1 above). This may be as a result of differing interpretation as to what is permitted under the System of Inspection. As part of the review of the System of Inspection, the RP recommended that this aspect be clarified.

63. The reappraisal in 2002 of the role of compliance under SCOI, and the constituting of SCIC through wider terms of reference than had been afforded to SCOI, provide CCAMLR with the appropriate opportunity to ensure that the important issue of compliance is addressed comprehensively.

64. In the view of the RP, that opportunity has not been realised fully. Despite an ever-expanding agenda, SCIC has continued to operate in much the same way as SCOI did 10–15 years ago. Its work is invariably conducted through the plenary of the Standing Committee; there is little or no delegation of elements of work to subsidiary groups. The overall time available to SCIC is moreover limited, and the practice of the Commission revisiting much of SCIC's agenda in the second week of a CCAMLR meeting has the tendency to encourage lack of agreement within SCIC, particularly on more crucial or contentious matters. Lack of consensus by SCIC would appear at times to be a mechanism utilised by some Parties to ensure re-engagement of debate within the Commission itself. But when this occurs it reflects, in effect, a failure by Parties to employ fully the powers delegated to SCIC and arrive, through cooperation, at collective decisions.

65. The RP noted the decision of the Commission in 2007 to provide full interpretation facilities to SCIC and believed that this would undoubtedly enhance the effectiveness of the Standing Committee. But the RP is of the view that the importance of compliance issues was such that CCAMLR should give further consideration to the operation of SCIC and its relationship to the Commission. The RP believed that the status quo in relation to SCIC was not a tenable option.

66. Matters which the RP considers might warrant review were:

(a) Whether the amount of time available to SCIC is adequate to meet its expanding agenda (bearing in mind that scientific/technical matters dealt with by, for example, the Working Groups of the Scientific Committee, were catered for by far longer meetings). Consideration could be given to, for example, extending the time available to SCIC either by bringing forward the start date of its meetings, holding meetings intersessionally, or conducting some elements of its work electronically.

(b) Rationalising the working practices of SCIC by, for example, delegating more work (e.g. on discrete technical matters) to subsidiary groups. Again, more work by such groups could also be undertaken intersessionally by electronic means.

(c) Ensuring that greater synthesis of information on compliance matters is undertaken by the Secretariat before such information is brought before SCIC; in effect empowering and resourcing the Secretariat to undertake more of this work.

(d) Reviewing the relationship between SCIC and the Commission. In the view of the RP, the objective should be to reduce or eliminate the existing practice of the Commission re-engaging (and thus repeating) substantive debate held in SCIC. In this respect, the RP noted that the status of SCIC differs considerably from that of the Scientific Committee. Whilst the latter is advisory, and thus requires

its advice to be scrutinised by the Commission, SCIC is in effect an inherent component of the Commission itself. It could be granted strengthened delegated authority of decision-making by the Commission, if that was the wish.

Review Panel recommendations:

1. CCAMLR should review and augment (as necessary) the resources available to, and the *modus operandi* of, SCIC to ensure it is able to function effectively.

2. CCAMLR should review the format, consistency and timing of reports necessary to monitor compliance and detect and deter non-compliance (e.g. catch data, CDS, C-VMS and port inspection reports).

3. In relation to CMs 10-06 and 10-07, CCAMLR should review the process (including the need for consensus), timing and frequency with which vessels are added or removed from the IUU vessel list. It should also consider how this information can be more widely disseminated.

4.6 Market-related measures

4.6.1 Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Market States for Antarctic marine living resources

67. CCAMLR took decisive action in 1999 in developing and implementing the CDS. This is a significant compliance and market measure. It allows product to be tracked from point of landing through to the final market, although it was noted that it does not trigger at point-of-capture, nor does it integrate with catch data reporting. These issues have been discussed in more detail above. Information available to the RP suggested that the vast majority of CDS information is now submitted using the E-CDS which has improved the flow of information, reduced potential errors and reduced the scope for fraudulent activity.

68. A number of fisheries and fishery-related schemes now use chain-of-custody arrangements to ensure the integrity of management arrangements and respond to increasing demands from wholesalers and retailers that the product has been harvested from a sustainable fishery and does not include any IUU catch. The RP believed such an approach has considerable merit and understood that at least one fishery in the Convention Area already operates such a scheme. In terms of continuous improvement, and ensuring that CCAMLR maintains a lead in embracing best practice, it would seem appropriate that SCIC be asked to advise CCAMLR on the feasibility of introducing similar chain-of-custody arrangements in other toothfish fisheries in the Convention Area. Such an approach would be in line with current best practice, and would give Market States greater confidence in the origins of the product.

69. Another way in which Market States might be able to assist in the fight against IUU fishing is through enactment and implementation of 'Lacey Act' style legislation (e.g. Ortiz, 2005). The Lacey Act is a US statute that is aimed directly at illicit trade in illegally caught

fish and wildlife. The Act makes it unlawful for any person subject to the jurisdiction of the USA to 'import, export, transport, sell, receive, acquire, or purchase … any fish or wildlife taken, possessed, transported or sold in violation of any law or regulation of any State or in violation of any foreign law'. Both criminal and civil sanctions are available under the Act, as well as forfeiture of the illegally caught fish. US prosecutors have used the Lacey Act's provisions extensively to deal with importations of illegally caught fish. In Guam and American Samoa – important ports for offloading tuna – the Lacey Act has been used effectively to prosecute for violations of the laws of a number of Pacific Island States.

Review Panel conclusions:

70. Consideration should be given to exploring the use of 'Lacey Act' style legislation more widely amongst CPs and Market States. This would provide greater opportunities for Market States to engage in a more cooperative way with CPs and others where fish may have been taken illegally to pursue and prosecute the offenders through the courts.

Review Panel recommendations:

1. E-CDS should become mandatory with immediate effect.

2. To improve the integrity of the CDS, the scheme should commence from the point of capture (rather than shipment or transfer) and it should be integrated with catch reporting. The task of undertaking such integration and reconciliation should be delegated to the Secretariat.

3. SCIC should review, and report on, the possible development and implementation of a more sophisticated electronic chain-of-custody regime. Such a regime could augment and, in due course, might supersede the existing CDS.

Chapter 5

Decision-Making and Dispute Settlement

5.1 Decision-making

5.1.1 Efficiency of Commission meetings and Working Groups in addressing critical issues in a timely and effective manner

1. CCAMLR's decision-making mechanism essentially consists of the consensus rule set up in Article XII of the Convention for matters of substance[25]. This mechanism is derived from the Antarctic Treaty[26]. It is based on the particular nature of Antarctic arrangements and the need to accommodate different positions with regard to it. It is this consensus approach that has made possible the harmonisation of contrasting views between Members, so enabling common positions to be created in relation to the governance of Antarctica and its surrounding waters. This link with the ATS clearly differentiates CCAMLR from RFMOs.

2. Consensus has worked for CCAMLR over a long period of time. At first sight, consensus can appear as an obstacle to effective and prompt decision-making. The RP noted, however, that this has not been the case with regard to CCAMLR. Key decisions have been adopted in similar timeframes as in RFMOs. For instance, the CDS took 18 months[27]; the precautionary catch limit required about two years[28]; the measure concerning nationals of CPs was adopted in a year[29]. CCAMLR's System of Inspection took more than two years to be adopted, but it anticipated the schemes that other international instruments adopted long after[30]. The need for consensus on matters of substance has not prevented CCAMLR from addressing any important issues. It appears that no measure has not been addressed because of the existence of the consensus rule.

3. In most situations, consensus has been used responsibly and fairly by Members. It has been understood as being something more than the absence of an objection. Consensus brings with it a strong sense of cooperation and in most cases compromises have been reached on matters of difference. It has also helped to adopt a serious negotiating effort and to create a better climate for the respect and self-enforcement of decisions.

4. As will be detailed in the next section, the RP observed that the consensus rule in the implementation of some CMs has nevertheless created problems. The potential for conflict is growing in this respect. CCAMLR must therefore take action as soon as possible, in order to be equipped with the appropriate tools to deal with conflict before it emerges. The Convention already provides CCAMLR with the necessary means to deal with this issue (see

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25 See also Rule 4 of the Rules of Procedure of the Commission and Rule 3 of the Rules of Procedure of the Scientific Committee (CCAMLR, 2007).

26 See Article IV, paragraph 4 of the Antarctic Treaty (www.state.gov/documents/organization/15272.pdf).

27 CM 10-05 Catch Documentation Scheme for *Dissostichus* spp.

28 CM 51-01 Precautionary catch limitations on *Euphausia superba* in Statistical Subareas 48.1, 48.2, 48.3 and 48.4.

29 CM 10-08 Scheme to promote compliance by Contracting Party nationals with CCAMLR conservation measures.

30 CCAMLR-VII, paragraph 124.

proposals below), without any need to trigger the consensual mechanism of settlement of disputes provided by Article XXV or to envisage the initiation of what would inevitably be a difficult process of amending the Convention as set out in Article XXX (see Item 4.2). In particular, it should be noted that nothing prevents Member States from deciding by consensus that decisions concerning the implementation of certain measures can be adopted by majority.

5. CMs are obligatory on Members by virtue of Article IX.6(b) of the Convention. Nevertheless, paragraphs (c) and (d) provide an opt-out mechanism regarding those measures for any particular Member. Notwithstanding this possibility, it does not appear that this provision has been used capriciously, as it has only been deployed twice in the past 28 years.

Review Panel recommendations:

1. Consensus decision-making has worked for CCAMLR over a long period of time. This is very positive but, as for any decision-making mechanism, there may have been costs associated with it. A distinction must be drawn between substantive issues and matters of implementation. While decisions possessing normative and regulatory effects must continue to be addressed on the basis of consensus, determining how such decisions were implemented could be submitted to a different procedure. Within the existing framework of the Convention, this can be achieved through:

(a) the provision by CMs that decisions regarding their implementation will be adopted by majority rule, or that any State concerned will abstain from participating in the decision, or that these decisions are not matters of substance (hence not requiring consensus), as envisaged by Article XII.2 of the Convention;

(b) in accordance with Article XIII.6 of the Convention, CCAMLR creating, as a subsidiary body, a panel composed of independent experts to deal with the determination of factual matters, such as compliance with a CM, i.e. the inclusion of a vessel on the IUU vessel list[31]. The decision of such a panel would be binding. Another possibility that the Commission could consider is that panel decisions would be binding unless a negative consensus is reached subsequently by CCAMLR. This procedure would follow the example of the WTO dispute settlement mechanism, which allows the political body (DSB) to cast a decision of the Appellate Body in the last resort[32]. This means that a panel decision on the interpretation or the application of a CM would be binding, provided that CCAMLR does not decide by consensus not to accept it. This system has the advantage of been quasi-judicial, in the sense that the decision by the impartial organ will generally be binding, but it would nevertheless still give the political

[31] CM 10-06 Scheme to promote compliance by Contracting Party vessels with CCAMLR conservation measures.

[32] See Article 16, paragraph 4 and Article 17, paragraph 14 of WTO 1986–1994 the Dispute Settlement Understanding of the World Trade Organisation (www.wto.org/english/tratop_e/dispu_e/dsu_e.htm#16) (www.wto.org/english/tratop_e/dispu_e/dsu_e.htm#17).

organ (the Commission) the ability – which would likely be exceptional – to decide otherwise in the last resort. This would only be the case if the circumstances demanded it; even then consensus would be required.

2. These alternatives are preferable to the triggering of procedures under Article XXV in the case of a dispute as to the implementation of a measure. The mechanism established by this article depends in the last resort on the consent of the interested States to the use of a particular means of settlement of disputes, with the real possibility that a concerned State can then block the settlement of the dispute if it does not agree to submit the matter to the ICJ or to arbitration.

5.1.2 Extent to which CCAMLR has transparent and consistent decision-making procedures that facilitate the adoption of conservation measures in a timely and effective manner

6. The consensus procedure followed by CCAMLR can be considered as transparent and consistent. It is difficult to imagine that measures, such as MCS CMs, should not be adopted by consensus. Most CMs are considered and adopted by consensus without problem, albeit their drafts required amendment in many circumstances. Moreover, they are adopted in a timeframe that can be considered reasonable.

7. As explained above, consensus can create problems and prevent or delay decisions on the *implementation* of some CMs, such as the inclusion of a vessel flying the flag of a Member State in the IUU list. The State concerned can object to that inclusion.

8. Adoption of CMs, and the work of CCAMLR in general, is likely to become more difficult over time for practical reasons, such as the workload of a number of the Committees and the need for a range of inputs across issues. The fact that some decisions are negotiated at late hours without all the necessary input may produce a consensus decision, but it does not necessarily produce a sound and effective outcome.

Review Panel recommendations:

1. Decisions regarding the implementation of CMs can be submitted to one of the procedures envisaged in the preceding section.

5.1.3 Existence of an informal mechanism of cooperation between Members based on reciprocities

9. The RP found it difficult to determine which particular mechanism the Commission had in mind in raising this question. Any mechanism of cooperation in support of CCAMLR and its objectives, and in conformity with international law, is to be welcomed. If cooperation between Members detracts from CCAMLR processes, decisions and objectives, and pursues the establishment of 'coalitions' inside CCAMLR pursuing particular interests, it deserves

strong criticism. This is even more so, if such inter-Member cooperation is based on 'reciprocities'. The RP did not have sufficient information about this practice to comment on it in any greater detail.

Review Panel recommendations:

> **1. The RP supported informal mechanisms of cooperation that are for the benefit of CCAMLR, and in conformity with the Convention and general international law. By contrast, any inter-Member States' cooperation based on reciprocity in order to pursue particular interests must be avoided, and should be condemned.**

5.2 Dispute settlement

10. Article XXV sets up a dispute settlement mechanism relating to interpretation or application of the Convention that has never been effectively used. The mechanism is derived from the Antarctic Treaty[33] and is based on the notion of consultation between the Parties to a dispute, with a view to having it solved through one of the traditional peaceful means of settlement of disputes. If it is not resolved in this way, 'the consent in each case' of all the Parties concerned is needed in order to allow that either the ICJ or an arbitral tribunal can settle the dispute. Clearly, this mechanism does not add anything to the general obligation to settle disputes by peaceful means, as it exists in general international law, and does not envisage any compulsory means. As a result, the current dispute mechanism is intrinsically weak.

11. This mechanism is also clearly unsatisfactory, as it prevents the dispute being considered if a State is not willing to submit it to a third-party resolution. Whilst this kind of soft mechanism has not created major problems with regard to the Antarctic Treaty, the same cannot necessarily be advanced with regard to the Convention, given the essential fact that natural resources are at stake[34]. Hence, there is a need to update the system outlined in Article XXV of the Convention. The RP was aware that this would require an amendment of the Convention, as foreseen in its Article XXX, and that such a change would doubtless take a considerable time to be operational. The adoption of a Protocol to the Convention setting up a compulsory dispute settlement mechanism would not, in the view of the RP, be a viable solution, since this could be considered as a second-tier option given the maintenance of the original mechanism.

12. As a matter of course, Article XXV or any modification thereof, is not applicable to NCPs. In particular, IUU fishing in the Convention Area by NCP flag vessels falls outside this mechanism. This then requires that Member States envisage the use of other existing mechanisms for the settlement of disputes, when available. CCAMLR, as such, cannot stand in for Member States either before the ICJ or ITLOS, nor can it launch the arbitral procedure available in UNCLOS. Consequently, an active role for Members – either individually or collectively – aimed at using all available legal tools to combat illegal fishing, must be expected and should be encouraged.

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[33] See Article XI of the Antarctic Treaty (www.state.gov/documents/organization/15272.pdf).
[34] See p. 244 of Joyner (1992).

13. It is generally acknowledged that a system of a compulsory jurisdiction entailing binding decisions, such as established by UNCLOS and followed by UNFSA, appears to be the most appropriate mechanism for dealing with dispute settlement. This would appear to be particularly so for CCAMLR, given that it deals with natural resources[35].

Review Panel recommendations:

1. The CCAMLR dispute settlement mechanisms appear to be unsatisfactory. There is an urgent need to take action to address this situation. In this regard, the binding procedures for dispute settlement set out in Part XV of UNCLOS could be considered by CPs in a two-fold manner:

(a) As a benchmark that should be followed for an eventual amendment of Article XXV of the Convention. This could allow for compulsory procedures entailing binding decisions to be followed if no agreement can be reached. This implies the possibility of submission of a dispute to the ICJ, the ITLOS or an arbitral tribunal, if no agreement is reached or any other means are not followed or did not produce an outcome. In the case of disagreement as to the procedure to be followed, CPs are deemed to have accepted arbitration as the residual procedure[36]. Equally, Part XV of UNCLOS provides for an efficient provisional measures mechanism during dispute proceedings, that protects the rights of the Parties, fish stocks and the marine environment[37]. This mechanism should be employed or copied in any modification of the dispute settlement scheme of CCAMLR.

(b) As a possibility to be used between CPs that are also Parties to UNCLOS pending an amendment to the Convention, and by those CPs with regard to NCPs being also Parties to UNCLOS whose vessels are engaged in illegal fishing in CCAMLR waters.

2. The Annex for an Arbitral Tribunal appended to the Convention contains some particularities that should be maintained, notably with regard to other Parties' intervention in the proceedings (Articles 4 and 5 of the Annex). Given the particular nature of the obligations at stake, which are of common interest, this particularity of the system is to be commended and should be maintained.

3. As mentioned above (Criterion 4.1.1), in matters related to the interpretation or application of CMs, the establishment of a panel constituted by independent experts as a subsidiary organ of CCAMLR, with capacity to adopt binding decisions, should be envisaged. The possibility of casting a decision by such a panel through a 'negative' consensus of CCAMLR, following the WTO dispute settlement mechanism, could also be envisaged as a possible alternative.

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35 See Lodge et al. (2007), Executive Summary, Point F, 3.

36 See Article 287, paragraphs 3 and 5 of UNCLOS: (www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm).

37 See Article 290 of UNCLOS: (www.un.org/depts/los/convention_agreements/texts/unclos/UNCLOS-TOC.htm).

Chapter 6

International Cooperation

6.1 Transparency

6.1.1 Extent to which CCAMLR is operating in a transparent manner, taking into account the Code of Conduct for Responsible Fisheries Article 7.1.9

1. Article 7.1.9 of the FAO Code of Conduct notes that 'States and RFMOs should ensure transparency in fisheries management and decision-making'. As a measure of CCAMLR's transparency, the RP noted that a growing number of Observers (including Acceding States, NCPs, IGOs and NGOs) are invited routinely to attend meetings of the Commission and its Scientific Committee. With regard to its engagement with NCPs, CCAMLR is ahead of the ATCM which has no such mechanism for inviting NCPs to attend its meetings. However, the extent to which such invitations to attend CCAMLR are acted upon varies considerably, with only around 50% of the Observers invited actually attending CCAMLR meetings.

2. With the increasingly constrained time available during the annual CCAMLR meetings, managing the participation of a significant (and potentially growing) number of Observers remains a challenge, particularly in providing adequate time for the presentation and discussion of Observer reports and for the participation of Observers more actively in the meeting overall.

3. The RP had little information available to it to assess the perspectives of Observers with respect to their engagement with CCAMLR or their participation in CCAMLR meetings. Nevertheless, an assessment of Observer involvement indicates that, on the plus side, much of the CCAMLR website (though not all) is available to Observers. Observers may submit information documents to the meeting (Rule of Procedure 35(a)), although these are not usually translated.

4. On the down side, Observers may be restricted from certain agenda items (Rule of Procedure 33(b)) (although this practice has been used less in recent years); Members can veto the right of an Observer to address the meeting, and the practice of informal negotiation of CMs appears to be exclusive of Observers.

5. On matters of detail, the RP noted a difference between the Rules of Procedure of the Commission and the Rules of Procedure of the Scientific Committee with respect to Observers. Whilst the Commission's rules allow restricted sessions to be attended by State Observers (and other Observers, provided no Member objects), the Scientific Committee's rules do not provide for any Observers to attend such restricted sessions[38]. The justification for this difference between the respective Rules of Procedure was not apparent to the RP.

[38] Rule 33 of the Commission's Rules of Procedure and Rule 22 of the Scientific Committee's Rules of Procedure refer (CCAMLR, 2007).

6. Further, the Commission's Rules of Procedure (Rules of Procedure 30 to 35) variably refer to Observers attending, addressing or being present at meetings; terms which tend to imply rather passive engagement. In only one case (Rule of Procedure 30(a)) do the Rules more proactively provide for Observer 'participation'.

Review Panel recommendations:

1. The RP acknowledged CCAMLR's efforts to engage with a wide range of Observers and encouraged CCAMLR to continue its efforts to maximise its transparency and seek broader input to decision-making, particularly through the engagement of Observers at its annual meetings. Options to improve transparency with respect to the engagement of Observers might include:

(a) reviewing and, as appropriate, amending the relevant Rules of Procedure of the Commission (Rules 30 to 35). More specifically, subparagraphs (b) to (e) of Rule 30 might extend the notion of participation to all Observers (rather than only to Observers held under Rule 30(a)). Such a review might also re-examine the issue of restricting attendance of Observers (Rule 33(b)), as well as the right of veto contained in Rule 34(a);

(b) consideration as to the appropriate timing for Observer reports to be taken, as well as providing explicit advice to Observers on the expected nature and scope of their reports.

2. CCAMLR may also wish to consider aligning the Rules of Procedure of the Scientific Committee with those of the Commission with regard to the participation of Observers in restricted sessions.

6.1.2 Extent to which CCAMLR decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion

7. CCAMLR, and in particular its Secretariat, should be commended for the speed and efficiency with which CCAMLR material is made publicly available after its various meetings, including meetings of the Commission, Scientific Committee, its Working Groups, and associated workshops.

8. However, this outcome clearly comes at a cost. The ability of the Secretariat to maintain existing high standards, and do so in a timely fashion, is already placing a significant burden on the Secretariat. This could be severely tested if the reports of the various meetings continue to increase in length. In this regard, the RP noted the circa 700-page document of the most recent report of the Scientific Committee (including the fisheries reports) and the costs and staff-time associated with its production and translation.

9. Over its 26-year history, CCAMLR's work has clearly expanded, both in terms of its breadth and complexity. This is likely to continue into the future. Against this trend, it will

be essential for greater attention to be given to ensuring that meeting reports are delivered in a more synthesised fashion. Unless greater brevity can be achieved, the timely production and distribution of such material may well be jeopardised.

10. The RP considered that the CCAMLR website, as a vehicle for disseminating information among Members (such as communication circulars (COMM CIRCS and SC CIRCS) and meeting documents), could be regarded as adequate. However, for those with a limited knowledge of CCAMLR's organisation (around which the website is structured), including the general public, the website is less than easy to navigate. Given the increasing importance of websites as a communication tool, re-development of the website may be required, to ensure that it adequately fulfils its function as a major portal to support the internal workings of CCAMLR, as well as providing an important educational and outreach tool.

Review Panel recommendations:

1. The RP commended CCAMLR, and in particular the Secretariat, on the considerable effort that it has made to ensure that material, such as meeting reports, are made available to Members, Observers and the public in a timely manner.

2. However, this efficiency will likely deteriorate unless either (i) greater focus is made on ensuring the succinctness of meeting reports, or (ii) considerably more resources are made available to the Secretariat to enable it to continue to meet the current timelines for report production and distribution. The RP favoured the former of these two options.

3. Furthermore, the RP saw virtue in CCAMLR agreeing a more 'streamlined' structure for its reports (as had been done for the SCAF Report in 2002).

4. The RP recommended a redevelopment of the website so as to improve its utility in supporting CCAMLR's work and its accessibility as a tool for education and broader outreach purposes.

6.2 Relationship to non-Contracting Parties cooperating with various CCAMLR measures

6.2.1 Extent to which CCAMLR facilitates cooperation between Members and non-Members, including through encouraging non-Contracting Parties to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures

11. CCAMLR has demonstrated a commendably proactive approach to engaging with NCPs, as demonstrated through its Policy to Enhance Cooperation Between CCAMLR and

NCPs[39]. This is designed to encourage and build capacity of NCPs to cooperate with CCAMLR. That said, the extent of uptake by CCAMLR Members of this policy has not been widespread. The development and implementation of the CDS has provided for engagement with NCPs and has effectively enabled such Parties to be granted the status of 'an NCP cooperating with CCAMLR by participating in the CDS'. Such engagement has, in two instances, led to third-party States then acceding to the Convention; with one State subsequently becoming a full Member of the Commission.

12. Clearly, increasing the number of CPs in this way will increase the proportion of States whose interests relate purely to fishing or to the trade in fish, and such Parties may have no traditional affiliation or understanding of the ATS. Whilst such expansion of CCAMLR membership is not at all inappropriate given the need for wider engagement to ensure adequate controls over the harvesting and trade of Antarctic finfish, the RP nevertheless recalled its proposals set out under Criterion 2.1.1.

Review Panel recommendations:

1. The RP encouraged CCAMLR to maintain its proactive approach of engaging with NCPs so as to ensure the effectiveness of its CMs, especially the CDS. The RP also reiterated its suggestions made with respect to ensuring that new Parties (or prospective Parties) are made fully aware of their obligations with respect to Articles III, V (and IV.1) of the Convention.

6.3 Relationship to non-cooperating non-Contracting Parties

6.3.1 Extent to which CCAMLR provides for action in accordance with international law against non-Contracting Parties undermining the objectives of the Convention, as well as measures to deter such activities, as well as encouraging them to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures

13. Article X of the Convention provides for the Commission to draw to the attention of any NCP State, actions undertaken by its nationals or vessels which affect the implementation of the objectives of the Convention. By means of diplomatic initiatives, including correspondence, action has been taken by CPs, individually and collectively, as well as by the Secretariat, with third-party States. In addition, CCAMLR has in place a number of measures directed at, or affecting, NCP vessels, as well as measures, including the CDS, that are implemented voluntarily by cooperating non-Members (e.g. Resolutions 14/XIX, 15/XII and 16/XIX). Such measures also include Resolution 25/XXV on IUU activities undertaken by flag vessels of NCPs, and Resolution 19/XXI on flags of non-compliance.

14. CCAMLR also annually reviews information on IUU fishing activities in the Convention Area and, in accordance with CM 10-07, has established a list of NCP IUU vessels (in parallel to a similar list for CPs' vessels under CM 10-06).

[39] Adopted at CCAMLR-XVIII and amended at CCAMLR-XXV (p. 171 of the *Schedule of Conservation Measures in Force, 2006/07* (CCAMLR, 1997–2007).

15. This suite of measures reflects CCAMLR's determination and innovation to engage with NCPs in an attempt to achieve greater regulation of the vessels of those Parties.

16. The RP noted that the Valdivia Symposium (Anon., 2005a, 2005b), had proposed that CCAMLR should commission a legal review of high-seas enforcement capacity, to determine if legal action [by CPs] could be taken under [Part 15 of] UNCLOS against NCPs fishing in the Convention Area. With international legal expertise available to it, the RP confirmed that such action could indeed be an option, and made proposals in this regard in the previous chapter[40].

17. An alternative might be for CCAMLR to seek an advisory opinion of the ICJ with respect to legal action that might be taken by CPs against NCP-flagged vessels fishing in CCAMLR waters.

18. As a statement of its concern over IUU practices in the CAMLR Convention Area, including by NCP vessels, CCAMLR might give consideration to a formal declaration by the Commission with respect to the applicability of Part 15 of UNCLOS to NCPs, which are Parties to UNCLOS, and whose vessels are fishing in CCAMLR waters.

Review Panel recommendations:

1. CCAMLR may wish to ensure that the details of its engagement with third-party States in respect of Article X of the Convention are, on a regular basis, formally brought to the attention of FAO and any other relevant international organisation.

2. CCAMLR may wish to consider establishing an expert panel to examine the feasibility and likely success of a range of actions that might be taken against non-cooperating NCPs. One of those options might include a formal Declaration on the applicability of Part XV of UNCLOS to [vessels of] NCPs, that are Parties to UNCLOS, fishing within CCAMLR waters.

6.4 Cooperation with other international organisations

6.4.1 Extent to which CCAMLR cooperates with other international organisations

19. The Chatham House Report on Recommended Best Practices for Regional Fisheries Management Organisations (Lodge et al., 2007) notes that 'effective ecosystem-based management requires informed interaction between RFMOs and other organisations or arrangements with region-specific or species-specific mandates'.

20. Although in ecosystem terms CCAMLR is largely self sufficient, there are clear examples where cooperative mechanisms with other bodies outside the Convention Area might add value. For example, some key CCAMLR fish species, including toothfish, extend well north in their distribution from CCAMLR waters, whereas other species such as tuna, the

[40] See Criterion 5.1.1, recommendation 1(b).

responsibility of the CCSBT and other tuna RFMOs, can be found in CCAMLR waters. The globally important populations of seabirds (particularly albatrosses and petrels) which breed within the Convention Area disperse widely throughout the southern hemisphere and are impacted by fishing activities both in high seas and coastal waters. In consequence, there is virtue in regular and constructive dialogue about such issues both with RFMOs and other IGOs.

21. In accordance with Article XXIII.3 of the Convention, CCAMLR has developed a dialogue with NCPs, IGOs and NGOs and other organisations, including inviting some RFMOs (e.g. CCSBT, IATTC, ICCAT, SEAFO and WCPFC), as well as other key international organisations (e.g. ACAP, CITES, CPPS, FAO, IUCN, IWC, SCAR and UNEP), to attend its annual meetings. The Joint CCAMLR-IWC Workshop held in June 2008 was also noted by the RP as a further example of cooperation with international organisations.

22. This observer role is, however, not necessarily extended to the workings of the Scientific Committee and its subsidiary groups, and as noted above, the frequency of attendance of these States or organisations is variable. Furthermore, due to time pressures during CCAMLR meetings, the degree of dialogue between the Commission and Observers may be somewhat superficial and largely restricted to a one-off opportunity during the meeting.

23. Article XXIII.4 of the Convention provides the opportunity for CCAMLR to enter into agreements with other organisations. However, in the history of the Commission no such agreements have been concluded. That said, exchanges have taken place in recent years with the CCSBT and WCPFC though it appears no substantive progress has been made.

24. Despite the procedures available to engage with Observers (States, IGOs, NGOs etc.), it was not apparent to the RP that this mechanism was delivering effective results. The means of entering into agreements through Article XXIII.4 has not been used.

Review Panel recommendations:

1. In relation to Observers, CCAMLR should now critically re-examine its relationship with a range of organisations providing Observers to ensure that of the exchange of information is maximised and the working relationship with the bodies they represent is transparent, effective and dynamic.

2. CCAMLR should heighten the priority of examining the need for, and concluding agreements with, other organisations to enhance its own effectiveness and pursue its objectives. Possible candidates could include SEAFO, SWIOFC, tuna RFMOs (in particular CCSBT) and environmental organisations such as ACAP and CITES.

3. At routine intervals, CCAMLR should examine its own regulatory provisions against contemporary developments either in RFMOs or in wider instruments applicable to fisheries, environment and broader governance to ensure to the extent possible best practice continues to be adopted and achieved by CCAMLR.

6.5 Special requirements of Developing States

6.5.1 Extent to which CCAMLR recognises the special needs of Developing States and pursues forms of cooperation with Developing States, taking into account the Code of Conduct for Responsible Fisheries Article 5

6.5.2 Extent to which CCAMLR Members, individually or through the Commission, provide relevant assistance to Developing States

25. As previously noted, CCAMLR has put commendable effort into engaging and developing cooperation with NCPs, which includes a number of Developing States. Such initiatives include efforts by CCAMLR (through the Secretariat) and by Members individually to provide training in, for example, the CCAMLR CDS and MCS.

26. It was noted that the Secretariat had provided assistance for one NCP Developing State to attend a CCAMLR meeting in 2006 (CCAMLR-XXV/8).

27. With the entry into force of the CCAMLR CDS in 2001, CCAMLR has invited a number of developing and third-party Flag States to attend its annual meetings. Only one request for assistance in accessing the UNFSA Assistance Fund[41] has been made to aid attendance at a CCAMLR meeting, although this was not followed up by the State in question, as it had not ratified the UNFSA and was therefore ineligible to access the Assistance Fund.

28. However, CCAMLR has few provisions in place targeted specifically at supporting Developing States in areas addressed by Article 5 of the FAO Code of Conduct, which includes assistance with access to fisheries as well as financial aid. Neither Article XIX.3 of the Convention, nor Financial Regulation 5 treat Developing States any differently to other States with respect to financial contributions. Nor does the Cooperation Enhancement Program[42] make particular reference to cooperating with Developing States.

Review Panel recommendations:

1. CCAMLR may wish to give consideration to new means for providing support to Developing States. These might include, but need not be limited to:

(a) establishing a dedicated fund to support Developing States, and referencing the establishment and accessibility to such a fund in its literature and website, including the Cooperation Enhancement Program;

[41] Established under UNFSA, Article VII: (www.un.org/Depts/los/convention_agreements/convention_overview_fish_stocks.htm).

[42] Policy to Enhance Cooperation Between CCAMLR and NCPs: (www.ccamlr.org/pu/e/e_pubs/cm/07-08/coop.pdf).

(b) identifying current best practice and existing arrangements elsewhere, particularly within RFMOs, in relation to Developing States;

(c) exploring and making available information on other funding sources to assist Developing States who wish to engage with CCAMLR.

Chapter 7

Financial and Administrative Issues

7.1 Availability of resources for activities

7.1.1 Extent to which financial and other resources are made available to achieve the aims of CCAMLR and to implement CCAMLR's decisions

Background information

CCAMLR's and SC-CCAMLR's budgets

1. Part 6 of *CCAMLR Basic Documents 2007* (CCAMLR, 2007) includes the Financial Regulations that govern the financial administration of the Commission and the Scientific Committee.

2. In accordance with Article XIX.1 of the text of the Convention, the Commission adopts its budget and the budget of the Scientific Committee by consensus at each annual meeting.

3. SCAF was established by CCAMLR in accordance with Article XIII.6 of the Convention. SCAF examines the audited[43] financial statements of the Commission for the previous year, the operation of the budget for the current year and the draft budget for the ensuing year.

4. In 2002, SCAF noted that the basis of accounting that had been used for the Commission's budget was no longer in line with that used by the majority of Member governments. It then recommended that the Commission adopt a full accrual basis of accounting for future budgets, commencing with 2003.

5. The Executive Secretary is in charge of preparing and submitting to all Members of the Commission, a draft budget comprising estimates of receipts by the Commission and of expenditures by the Commission and the Scientific Committee for the ensuing financial year. Submission of the draft budget must be made at least 60 days prior to the annual meeting of the Commission.

6. At the same time, and in the same form as the draft budget, the Executive Secretary prepares and submits to all Members, a forecast budget for the subsequent financial year.

7. On approval of the budget for a financial year, the Executive Secretary sends a copy to all Members notifying them of their contributions and requesting them to remit their contributions due.

[43] Current financial regulations require that the annual financial statements be subject to a full or review audit depending on the Commission's decision. Since the establishment of the Commission, the post of auditor has been held by the official auditor of the Australian Government.

Members' contributions

8. Each Member contributes to the annual budget in accordance with an agreed formula. As required by the Convention, the formula takes into account both the fishing activities of Members and an equal sharing among all Members. The current formula used for calculating contributions was agreed by the Commission in 2004 and will continue to be applied until a review is requested by a Member. There are no special arrangements for Developing States. A new Member joining the Commission pays an initial pro-rated amount based on the normal Member contribution, determined according to it becoming a Member in the first or second six months of the financial year.

9. The CCAMLR Financial Year commences on 1 January. Member contributions are due for payment on the first day of the financial year and should be paid not later than 60 days after that date. The Commission has the authority to permit extensions to the due date of up to 90 days for any individual Member who is unable to comply with this regulation due to the timing of the financial year of their government. In 2007, in order to improve the timing of payments, SCAF recommended that Members be given an incentive to pay their annual contribution by the due date by applying a 10% additional charge on any amount outstanding of the total required contribution. This would take effect on 1 September in the year the payment is due. The Commission agreed with SCAF that the problem of late payments needed to be addressed, and requested that a possible solution be discussed at the 2008 meeting of SCAF.

10. A Member of the Commission that fails to pay its contributions for two consecutive years loses the right to participate in decision-making during the period of its default.

11. The surplus for any year is the excess of income over expenditure for that year. Current financial regulations require any surplus to be returned to Members, rather than retained in a general reserve. This is achieved by carrying forward the surplus from one year to the surplus income account in the following year, thereby reducing the Member contributions required in the latter year.

Funds

12. A *General Fund* has been established for the purpose of accounting for the income and expenditure of the Commission and Scientific Committee and any subsidiary bodies established pursuant to the Convention.

13. Contributions paid by Members and all other sources of income, such as voluntary contributions above and beyond Members' budget contributions, are credited to the General Fund.

14. *Trust* and *Special Funds* may be established by the Commission for the purpose of receiving funds and making payments for purposes not covered by the regular budget of the Commission. Special Funds cannot be used directly for general expenditure and are subject to specific authorisation rules. Competency for determining expenditure from all funds, including Special Funds, remains with the Commission. Examples of such Special Funds are the Compliance and Enforcement Special Fund and the CDS Special Fund. The latter was created by the Commission at its 2000 meeting to receive from Members any net proceeds

from the sale of confiscated illegal catches or shipments, if they so decided. The Science Special Fund was set up in 2004 to enable deferral of funds allocated to the Scientific Committee from year to year.

15. At its 2001 meeting, the Commission established a Contingency Fund, intended to be used for unforeseen and extraordinary expenditure which had not been specifically authorised by the Commission at the time of its previous meeting. Definitions of such expenditure and terms of use of the Fund were proposed by SCAF. 'Unforeseen expenditure' is expenditure which the Commission had been unaware of at the time of its previous meeting, but which is considered necessary for the fulfilment of tasks required by the Commission to be performed. 'Extraordinary expenditure' is expenditure the nature of which was known by the Commission at its previous meeting, but the extent of which is far greater than had been anticipated at that time. In 2006 the Commission reaffirmed the size of the Contingency Fund at A$110 000.

16. In 2002 SCAF recognised the continuing concern of the Commission and Scientific Committee on the high number of applications received for new and exploratory fisheries and, in particular, those applications which were not subsequently prosecuted. A proposal on the possibility of charging for each application, with a proportional refund if it was prosecuted, was considered. Although a number of potential practical issues were raised, which could not be resolved at that time, the principle of cost recovery for new and exploratory fisheries was generally accepted.

17. The following year, SCAF considered the possibility of requiring payment for the processing of notifications for new and exploratory fisheries and recommended that the Commission consider the adoption of such a scheme, incorporating the following characteristics:

(a) A notification is characterised in terms of a single submission by an individual Member in respect of a single year, a single species group and one subarea/division.

(b) For the submission of an application for a new and exploratory fishery by a CP, the fishing company intending to pursue the fishery would be charged an amount comprising a minimum fee (A$3 000) and a guarantee (A$ 5 000) which would be refunded when the Commission has approved the notification, the Member concerned has authorised it, and the fishery has been undertaken.

(c) A notification would not be considered until the payment has been received by the Secretariat. Such payment should be conveyed directly to the Secretariat by whatever means applicable.

18. SCAF recommended that fees collected should be accounted for in the General Fund and that any income from forfeited guarantees should be paid into the Contingency Fund. In 2005, in response to the Commission's request, the Secretariat submitted a paper comparing the non-refundable portion of the notification fee to relevant processing costs incurred.

19. The Secretariat informed the RP that, as a result of strong cash inflows from new and exploratory fisheries applications in recent years, variable annual surpluses have become

more frequent. For instance, in 2007 a New Member Contribution was received from the People's Republic of China following it becoming a Commission Member on 2 October 2007, and an additional income of A$40 000 was received from unbudgeted forfeited funds from new and exploratory applications received in 2006 and transferred through the Contingency Fund, along with a surplus of A$177 225 from 2006.

20. In 2002 the Commission adopted the budget presentation format currently in use. It noted that this format better facilitates allocation of resources between functions as identified in the Secretariat Strategic Plan. Appendix V, provided by the Secretariat, illustrates the successive stages involved in the Commission's budgetary procedures and the different income sources and expenditure items mentioned above.

The concept of zero real growth budget

21. The difference between expenditure and other items of income is funded by Members' contributions. In order to keep Members' annual contributions at the previous year's level, adjusted for inflation only, the CCAMLR budget is based on zero real growth. Although every effort is made not to exceed this limit, this is sometimes not possible due to exceptional economic conditions or substantial increases in CCAMLR's overall workload.

22. In 1995 SCAF recognised that the majority of proposals for budgetary increases in recent years had been the result of initiatives of the Scientific Committee that had affected both the Scientific Committee and other components of the budget. SCAF then recommended in 1996 that the Commission request the Scientific Committee to consider the Commission's aim of a zero-increase budget when making its proposals for expenditure in the Commission's 1997 budget.

23. In the following years, SCAF and the Commission repeatedly recognised that zero growth in the budget after adjusting for inflation was a reasonable target in normal circumstances. It was noted that a special account should be used in cases where there were increasing amounts of work to be done, *inter alia*, in the case of a significant increase of scientific data which have to be managed. Therefore, it was noted that a certain degree of flexibility for budget increases should be allowed in a disciplined manner, including the consideration of all cost-saving possibilities.

24. In adopting the 2004 budget, and while reconfirming the general principle of zero real growth, the Commission noted that the significant increase in the Scientific Committee's budget for 2004 was due to increasing workloads and acknowledged the importance of the Scientific Committee's work to the Commission's decision-making process. The Commission noted that increases in activities of the Scientific Committee in 2004 could only be accommodated within the zero real growth limitation by the inclusion of savings generated through the implementation of a cost-recovery policy. It agreed that opportunities for cost savings should continue to be investigated and, in particular, directed Members and the Secretariat to identify ways to shorten and reduce the number and size of reports and meeting documents.

25. At its 2007 meeting the Commission noted that, while still adhering to the principle of zero real growth, it was not possible to limit the growth of the revised 2008 budget.

Consequently, Members' contributions could not be held to zero real growth, and the Executive Secretary was directed to explore all opportunities for cost savings during 2008 (CCAMLR-XXVI, paragraph 3.23).

Review Panel conclusions:

26. The RP recognised that it is obviously necessary to maintain tight fiscal control over expenditures. In that respect, the objective of a nominal zero growth of the budget, commendable as it is as a general principle, seems unrealistic, particularly when viewed against the ever-increasing demands being placed on the Commission. A brief review of Chapter 3 'Conservation and Management' quickly reveals a significant number of recommendations which, if implemented, will require a substantial increase in funding.

27. In the context of increasing demands on CCAMLR's financial resources, the RP discussed the merits of expanding the use of cost recovery to more fully reflect the costs incurred in providing fishing operators with access to CCAMLR marine resources. This discussion was very much in line with the broader community discussion (both in fisheries and elsewhere) which has now occurred over many years on the desirability of the beneficiaries of services paying for those services. The discussion did not specifically address the more complex issue of imposing a charge for access to community-owned resources for private gain.

28. The RP understands that there are charges imposed for consideration of, and access to, new and exploratory fisheries, although it did not have detailed information on the actual costs that they cover. The RP considers that there is merit in CCAMLR considering the broader question of cost recovery for all fisheries within the Convention Area and that there would be a range of associated benefits which might flow from the introduction of full cost-recovery arrangements. An analysis undertaken by the Organisation for Economic Cooperation and Development (OECD) in 2003 on the Costs of Managing Fisheries found that that there are efficiency and cost effectiveness benefits flowing to both governments and the fishing industry where cost-recovery arrangements have been implemented. The RP considers that a system which reflects the full cost of fishing operations (including all associated management costs under an ecosystem approach to fishery management) will result in greater transparency and better decision-making by CPs and operators (where these services are not subsidised by CPs) and hopefully rational decisions on the level and intensity of fishing operations (see also Item 3.6 'Capacity management').

Review Panel recommendations:

1. The RP considered that CCAMLR will increasingly come under financial pressure in pursuing the Convention's objectives. This Review has highlighted many areas which will require greater attention and financial resources over coming years. In addition, it appears that the growth in fishing operations (if not for finfish then certainly for krill) will continue. In these circumstances, the RP saw significant merit in the Commission seeking to expand its financial base through identifying and charging for the full cost of services which are provided for commercial fishing operations. This will require the development of a cost-recovery policy and an assessment of how this should be implemented.

2. The RP further recommended that:

(a) CCAMLR establishes an expert group to develop a cost-recovery policy which would be applied to all commercial fishing operations;

(b) the expert group be asked to review CCAMLR services and decide which services relate directly to fishing operations under the ecosystem approach to management pursued by CCAMLR (and would thus be chargeable) and which relate to the broader conservation objectives and would continue to be funded from general funds.

3. The RP also recommended that special consideration be given to the distinction between developing and developed States when establishing the amount of each Member's contribution to the budget. The RP was, however, conscious that such an approach might well require amendments to both the Financial Regulations, as well as to the text of the Convention itself (Article XIX.3).

7.2 Efficiency and cost-effectiveness

7.2.1 Extent to which CCAMLR is efficiently and effectively managing its human and financial resources, including those of the Secretariat

Background information

29. In 1997, the Commission asked a Group of Experts to perform a Management Review of the Secretariat to appraise the Secretariat's work falling within the scope of the Executive Secretary's authority.

30. A number of recommendations concerned human resources (e.g. that the Secretariat should include anticipated expenditure devoted to training in the presentation of each annual budget; that in-house training be developed, particularly in the translation area, so that staff could benefit from available technical expertise etc.). The Group of Experts also recommended that technical aspects of the Science Officer's current workload, such as those involved in the editorial work of CCAMLR publications and documentation, should be removed from his duties to provide him with more time for strategic planning of scientific work and more opportunities for scientific analysis to support the work of the Scientific Committee. As regards financial and administrative matters, the Group of Experts proposed a new functional budget structure to the Commission. They also pointed out the need to prepare a medium/long-term Acquisition Plan, to include a full computer upgrade package.

31. SCAF recommended that the Executive Secretary should report annually at the Commission meetings on the progress made in the implementation of relevant recommendations from this Management Review. While a number of relevant recommendations were subsequently implemented, it was not until the current Executive Secretary assumed office that all the key recommendations were addressed and resolved. The most notable developments included, *inter alia*, the finalisation of the Secretariat Strategic Plan, and the development of a Staff Performance Appraisal Scheme.

32. In 2002 the Commission approved the Secretariat's Strategic Plan that is being fully implemented at present. The Executive Secretary reports on progress against this Plan at each annual meeting. A Staff Manual has been finalised to facilitate the Plan's implementation.

33. With the establishment of the Secretariat Strategic Plan and the related proposed format of the annual budget, the Commission was provided with sufficient information to determine and monitor the total amounts and allocations of staff resources. Special consideration was given to functional and tactical concerns within the structural constraints imposed, particularly by prevailing budgetary considerations. As a result, SCAF recommended that the Commission recognise the Executive Secretary's authority to revise the gradings of individual General Service staff positions, subject to the approved budget allocations.

34. The establishment of a Secretariat Strategic Plan had positive implications for the continuing ability of the Secretariat to support the work of the Commission and Scientific Committee. The Commission considered that this plan completed all remaining outstanding matters resulting from the 1997 Management Review of the Secretariat and that it should be used for future annual appraisals of the performance of the Executive Secretary.

35. The CPMAS was finalised in May 2004. The CPMAS aligns the Staff Regulations with the functional requirements of the Secretariat Strategic Plan, the Staff Contract Schedule and the various tasks identified by the Commission and Scientific Committee from time to time. The CPMAS constitutes the final step in addressing the outstanding Secretariat administrative matters identified by the 1997 Secretariat Management Review. In 2004/05 it was used for the first time to appraise staff performance and identify training needs. In 2006/07 the CPMAS was again used with the same purpose.

36. Secretariat Staff training has proven essential to sustaining the Secretariat's efficiency and high workplace standards. Both the Strategic Plan and CPMAS allow individual staff to access specialised training for their assigned functional responsibilities.

37. The Executive Secretary's annual reports from 2003 to 2007 have persistently highlighted the difficulties faced as the Secretariat is being assigned more tasks and responsibilities while subject to a zero real growth budget and no additional staff being appointed. The situation is well illustrated in the Executive Secretary's 2007 report which prompted the Commission to agree that, as the Secretariat's tasks continue to grow in complexity and content, there may be a concomitant need to strategically evaluate Secretariat staffing levels and funding, with prioritisation of task assignments also being necessary.

Review Panel conclusions:

38. The RP recognised the work done by the Secretariat in the preparation of the annual budget with the goal of maximising the efficient and effective use of resources to complete the work required by the Commission and its Scientific Committee. The RP is also supportive of initiatives aimed at cost-effective use of resources, such as the project designed to transform CCAMLR's archives and filing system to an electronic-based system for easier and more user-friendly access. Despite the fact that the Secretariat Strategic Plan facilitates planning and prioritisation of work, the growing workload delegated by the Commission and its Scientific Committee continues to be addressed with no increase in staff. The Secretariat

has shown great competence in coping with this growing pressure on available human and financial resources. However, it could be anticipated that, if this situation is not corrected, some breakdown in functionality and efficiency may manifest itself in the foreseeable future.

39. The RP noted that a number of senior and long-serving Secretariat staff members were approaching retirement age. In the present circumstances with increasing task demands under a zero real growth budget scheme, it is necessary to address the issue of functional continuity to preserve the corporate memory that is fundamental to ensuring continuity and efficiency. Inevitably, acquisition of such essential institutional skills and knowledge takes time and requires that substantial allowances are made for the hand-over of expertise and experience on a senior staff member's departure.

40. The RP noted that although budgets are approved on a yearly basis, many aspects of the work of the Commission are performed for far longer periods. As a result, funding requirements may need to be based on a much longer time horizon than has been the case to date. However, it has sometimes been necessary to sacrifice longer-term efficiency in the execution of particular tasks in order to avoid exceeding zero growth in the CCAMLR budget. This needs to be considered by the Commission when making such decisions.

41. The RP expressed concern in relation to the decreasing number of scientists engaged in CCAMLR science. This seems particularly problematic at a time when the amount and diversity of the scientific advice required are both significantly increasing (see discussion under Item 3.4 'Quality and provision of scientific advice').

42. The RP also noted that there is, at present, an over-reliance on relatively few Members who undertake the relevant scientific research needed to support the work of CCAMLR.

Review Panel recommendations:

1. Although current resources may be sufficient to cope with CCAMLR's core operations, major new initiatives and the recommendations of this RP in such areas as Conservation and Management and Compliance and Enforcement, will inevitably have additional resource implications. This matter needs to be considered against the ongoing policy of zero real growth. There may well be instances which require additional Member contributions to meet such priorities. Alternatively, as it has become customary in recent years, it may be necessary for the Commission to identify high-priority items and then allocate additional funds for these items specifically in excess of the zero-growth threshold. Without such an approach, the RP considered that CCAMLR's capacity to address new initiatives may well be constrained.

2. The Commission should consider how it might provide enhanced support to the work undertaken by SC-CAMLR. At present there is an over-reliance on relatively few Members who undertake the relevant scientific research needed to support the work of CCAMLR. This situation may mean that CCAMLR's capacity to meet future research requirements will be limited. To offset this, it is recommended that CCAMLR should investigate the means to ensure a more equitable contribution to scientific research from all CCAMLR Members.

3. CCAMLR Members should renew efforts to encourage their scientists to engage in SC-CAMLR and in research in the Convention Area. The adoption and implementation of a significant number of recommendations from this Review will necessarily require a substantial increase in the allocation of financial and human resources.

4. The Commission should consider how it might address the issue of succession planning to ensure the continuity of function and the transfer of essential institutional knowledge when senior and long-serving Secretariat staff members leave the organisation.

7.2.2 Extent to which the schedule and organisation of the meetings could be improved

Review Panel conclusions:

43. The RP noted that the Secretariat is being asked to provide more meeting support as the number of Working Groups and intersessional activities grow. In this context, data holdings and intersessional communications have also increased significantly.

44. The RP recognised the efforts made by the Secretariat since 2002 to promote cost savings through the reduction and shortening of scientific papers and Working Group reports (Figure 2 below). However, the information from the Secretariat shows clear evidence of continued growth in the number of Commission and Scientific Committee circulars (Figure 3 below).

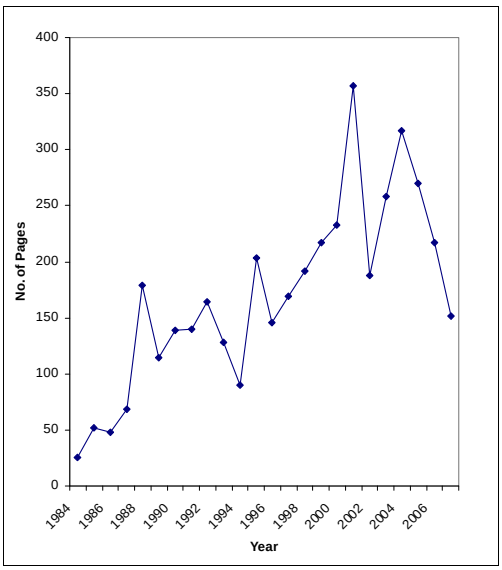

Figure 2[44]: WG-FSA report pages, 1984–2007 (2002 – background paper describing analyses included; 2004 – Fishery Reports included; 2005+ – Fishery Reports published online only; post-2006 – WG-IMAF report not included in WG-FSA report).

[44] Provided by the Secretariat.

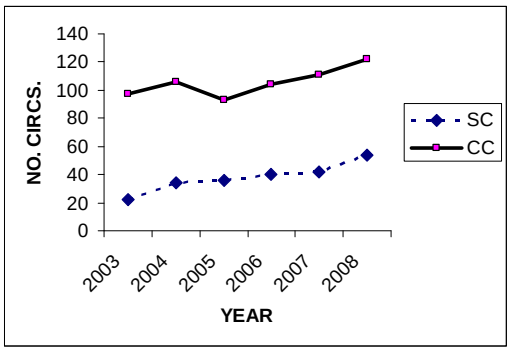

Figure 3[45]: Number of Commission (CC) and Scientific Committee (SC) circulars (number of circulars for period 1 January to 12 September each year).

45. The RP recognised that the continued growth in the number and size of formal documents, reports and correspondence, necessarily implies an increased demand for translation, and continues to place considerable and growing demands on the Secretariat's resources, including staff time.

46. The RP discussed practical measures to improve the administrative mechanisms of CCAMLR meetings, to avoid duplication of work carried out by the Standing Committees and the Plenary of the Commission and to upgrade the work of the Standing Committees and minimise duplication in the discussions in the Commission's Plenary.

Review Panel recommendations:

As stated above, any future reorganisation or expansion of the Commission or the Scientific Committee's work will have serious implications for how the Secretariat should go about organising its support and day-to-day activities to ensure the level of operational efficiency currently shown. The efficient application of staff and financial resources will require a further prioritisation of activities demanded of the Secretariat. However, new initiatives will inevitably have additional resource implications.

1. To guarantee equality, transparency and the widest participation possible at meetings, the RP recommended that the current budget assigned to translation and interpretation work must be maintained and if necessary increased.

2. In order to improve the administrative mechanisms of CCAMLR meetings, the RP was of the view that any duplication of work carried out by the Standing Committees and the Plenary of the Commission should be avoided.

3. The Standing Committees of the Commission should be given increased delegation to address issues. Reports from Standing Committees should be forwarded to Plenary for endorsement on the understanding that such reports and their recommendations have been read by Commission Members. There

[45] Provided by the Secretariat.

should be a strong resistance against such reports being reviewed, or matters addressed by these reports being reopened by the Plenary in substance. This should only occur in exceptional circumstances when a Party (or Parties) specifically requests reconsideration of a specific item.

4. Following the example of the ATCM's CEP, far more work on detailed or technical matters should be delegated by the Standing Committees to subsidiary groups. These may then undertake their work during intersessional periods by electronic or other means. This working method should enable a more focused approach to be undertaken by the Standing Committees at their annual meetings.

5. Discussions in the Commission's Plenary would also be improved by a more rigorous approach to report content and format. In relation to this, the RP recommended that: (i) a common format for all reports should be adopted; (ii) reports should provide collective and constructive views, rather than particular views from individuals; (iii) executive summaries of conclusions and recommendations should be included; and (iv) more detailed analyses of issues should be confined to annexes.

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APPENDICES

APPENDIX I

CCAMLR DECISION TO UNDERTAKE A PERFORMANCE REVIEW OF THE ORGANISATION

The Commission for the Conservation of the Antarctic Living Marine Resources (CCAMLR),

Recalling Article II of the CAMLR Convention which states that the objective of the Convention is the conservation of the Antarctic marine living resources and that, for the purpose of the Convention, the term 'conservation' includes rational use,

Also recalling Article V of the CAMLR Convention, which highlights the special obligations and responsibilities of Antarctic Treaty Consultative Parties for the protection and preservation of the environment of the Antarctic Treaty Area,

Further recalling that any harvesting and associated activities in the CAMLR Convention Area are to be conducted in accordance with the provisions of the Convention and with principles of conservation as set forth in the Convention,

Noting the discussions held at the CCAMLR Symposium in Valdivia, Chile, from 5 to 8 April 2005,

Considering the recent calls of the international community to organisations with management and conservation responsibilities with respect to fisheries and marine living resources to strengthen their efforts to attain their objectives and to implement adequate approaches to fisheries management,

Further considering the 2006 UN General Assembly Resolution 61/105 calling for Regional Fisheries Management Organisations and arrangements with management and conservation responsibilities on fisheries and marine living resources, to undertake urgently a Performance Review,

Deciding that it would be appropriate to undertake for itself such a Performance Review,

decides, in accordance with Article IX, paragraph 1:

1. That a Performance Review of CCAMLR shall be conducted during the 2007/08 intersessional period and a final report shall be submitted to the Contracting Parties at the 2008 annual meeting.

2. The Review shall be carried out on the basis of the attached list of criteria.

   The Review Panel may consider adding criteria, if needed. The Panel may take into consideration the discussions held at the Valdivia Symposium referred to above.

3. The Review Panel will be composed of nine persons, as follows:

(i) four internationally recognised persons who have experience in the CCAMLR context and a thorough understanding of the CAMLR Convention, and who shall reflect the composition of the Members of CCAMLR;

(ii) the Chair of the Committee for Environmental Protection (CEP);

(iii) an expert from a CCAMLR non-governmental organisation (NGO) observer;

(iv) three external experts, among whom there is experience in relevant areas of science, fisheries management and legal matters (including compliance and enforcement issues).

The Review Panel shall be appointed by the Commission.

The external experts shall be internationally recognised in their field, but shall have no involvement or direct experience with CCAMLR.

The Panel members shall be independent and participate in their personal capacity.

The Review Panel Chair shall be a Panel member selected by the Panel.

4. CCAMLR Members may provide in writing two names, each accompanied by a one-paragraph curriculum vitae (CV), for each category ((i) internal members, (ii) external expert in science, (iii) external expert in fisheries management, (iv) external expert in legal matters related to international law) to the Chair of the Commission, through the Secretariat, by 31 December 2007.

The Chair of the Commission shall provide to Members, by 15 January 2008, four lists, containing the names proposed by the Members for the appointment of:

(i) the four persons who have experience in the CCAMLR context; and
(ii) the three external experts to the Review Panel.

The Members shall immediately acknowledge receipt of the communication. Members may respond in writing to the Chair of the Commission within 30 days indicating preferences for two persons from each list.

The Chair of the Commission, at the end of the 30-day period shall, through the Secretariat, inform Members of the names of the persons for whom preference has been expressed through the selection process described above.

Once these persons have been identified, the Secretariat shall write to each person selected by the Members for appointment to the Review Panel, indicating CCAMLR's desire to appoint him or her and seeking their positive response.

5. The NGO expert will be recommended to the Commission by the NGOs accredited as official observers to CCAMLR by 31 December 2007. The name of the NGO expert selected will be communicated to the Chair of the Commission through the Secretariat.

The Chair of the Commission will provide the name of the NGO expert to the Members of the Commission together with the four lists of candidates mentioned above.

6. The Review Panel will meet at the CCAMLR Headquarters during May/June 2008.

7. The CCAMLR Secretariat shall provide logistical support and information to the Review Panel and shall not form part of this Panel.

8. The Review Panel shall decide by consensus. In the event consensus cannot be reached, individual members of the Panel may include their views in the Panel's report.

9. Travel and accommodation costs for the participants in the Review Panel meeting shall be borne by the CCAMLR budget, except for the NGO representative.

10. The report and the conclusions (including recommendations) of the Performance Review shall be communicated by the Panel Chair to CCAMLR Members, the Chair of the Commission and the Executive Secretary 45 days in advance of the 2008 annual meeting at which they will be considered firstly by SCIC, SCAF and the Scientific Committee and then by the Commission for discussion and action, if needed.

    SCIC, SCAF and the Scientific Committee shall report to the Commission the results of their discussions on this issue.

    The Report and the conclusions shall also be distributed to Contracting Parties and observers at the 2008 annual meeting, and shall be placed on the CCAMLR website.

11. Following the first review, subsequent reviews may be conducted if deemed appropriate by the Commission.

APPENDIX II

CRITERIA FOR REVIEWING THE PERFORMANCE OF CCAMLR

Area	General criteria	Detailed criteria
1. Role of CCAMLR within the Antarctic Treaty System	Relationship with the Antarctic Treaty System	• Extent to which CCAMLR effectively implements its obligations under Articles III and V of the Convention.
	Environmental protection	• Extent to which CCAMLR has effectively observed measures, resolutions and decisions of the Antarctic Treaty Consultative meetings related to the protection of Antarctic marine living resources.
	Conservation	• Extent to which CCAMLR has taken into account the effects of harvesting, research, conservation and associated activities on the marine ecosystem, the known or potential effects of environmental changes in its management of Antarctic marine living resources, and the risks and effects of the introduction of alien species.
	Protected areas	• Effectiveness of CCAMLR's relationship with the ATCM in considering proposals for ASPAs and ASMAs with marine components and providing advice to the ATCM. • What management and administrative tools are available to build up a system of protected areas. • Extent to which CCAMLR has made progress to respond to the WSSD target to establish a representative network of marine protected areas by 2012.
	Marine pollution	• Effectiveness of CCAMLR to implement measures to provide for protection of the Southern Ocean and Antarctic environment from the impacts of vessels engaged in harvesting, research, conservation and associated activities, including measures relating to marine pollution and vessel safety.
2. Conservation and management	Status of living marine resources	• Status of Antarctic marine living resources under the purview of CCAMLR. • Trends in the status of those resources. • Status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted Antarctic marine living resources. • Trends in the status of those species.
	Ecosystem approach	• Extent to which CCAMLR decisions take account of and incorporate an ecosystem approach to management.

Area	General criteria	Detailed criteria
2. Conservation and management (continued)	Data collection and sharing	• Extent to which CCAMLR has agreed formats, specifications and timeframes for data submissions. • Extent to which CCAMLR Members and Contracting Parties, individually or through CCAMLR, collect and share complete and accurate data concerning Antarctic marine living resources and other relevant data in a timely manner. • Extent to which fishing and research data and fishing vessel and research vessel data are gathered by CCAMLR and shared among Members. • Extent to which CCAMLR is addressing any gaps in the collection and sharing of data as required.
	Quality and provision of scientific advice	• Extent to which CCAMLR receives and acts on the basis of the best scientific advice relevant to the Antarctic marine living resources under its purview, as well as to the effects of harvesting, research, conservation and associated activities, on the marine ecosystem.
	Adoption of conservation and management measures	• Extent to which CCAMLR has adopted conservation and management measures for Antarctic marine living resources that ensure the conservation, including rational use, of those resources and are based on the best scientific evidence available. • Extent to which CCAMLR has applied a precautionary approach as set forth in the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points. • Extent to which CCAMLR is applying uniform principles and procedures to all species in the Antarctic ecosystem. • Extent to which CCAMLR has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries. • Extent to which CCAMLR has taken due account of the need to conserve marine biological diversity and minimise harmful impacts of harvesting, research, conservation and associated activities on marine living resources and marine ecosystems. • Extent to which CCAMLR has adopted measures to minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target Antarctic marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.
	Capacity management	• Extent to which CCAMLR has identified fishing capacity levels commensurate with the conservation, including rational use, of Antarctic marine living resources. • Extent to which CCAMLR has taken actions to prevent or eliminate excess fishing capacity and effort. • Extent to which CCAMLR monitors the levels of fishing effort, including taking into account annual notifications for participation by Contracting Parties.
3. Compliance and enforcement	Flag State duties	• Extent to which CCAMLR Members are fulfilling their duties as Flag States under the treaty establishing CCAMLR, pursuant to measures adopted by CCAMLR, and under other international instruments, including, *inter alia*, the 1982 Law of the Sea Convention and the 1993 FAO Compliance Agreement, as applicable.

Area	General criteria	Detailed criteria
3. Compliance and enforcement (continued)	Port State measures	• Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Port States, as reflected in the Code of Conduct for Responsible Fisheries Article 8.3. • Extent to which these measures are effectively implemented.
	Monitoring, control and surveillance (MCS)	• Extent to which CCAMLR has adopted integrated MCS measures (e.g. required use of VMS, observers, catch documentation and trade tracking schemes, restrictions on transhipment, boarding and inspection schemes). • Extent to which these measures are effectively implemented.
	Follow-up on infringements	• Extent to which CCAMLR, its Members and Contracting Parties follow up on infringements to management measures.
	Cooperative mechanisms to detect and deter non-compliance	• Extent to which CCAMLR has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance). • Extent to which these mechanisms are being effectively utilised.
	Market-related measures	• Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Market States for Antarctic marine living resources.
4. Decision-making and dispute settlement	Decision-making	• Efficiency of Commission meetings and working groups in addressing critical issues in a timely and effective manner. • Extent to which CCAMLR has transparent and consistent decision-making procedures that facilitate the adoption of conservation measures in a timely and effective manner. • Existence of an informal mechanism of cooperation between Members based on reciprocities.
	Dispute settlement	• Extent to which CCAMLR has established adequate mechanisms for resolving disputes.
5. International cooperation	Transparency	• Extent to which CCAMLR is operating in a transparent manner, taking into account the Code of Conduct for Responsible Fisheries Article 7.1.9. • Extent to which CCAMLR decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.
	Relationship to non-Contracting Parties cooperating with various CCAMLR measures	• Extent to which CCAMLR facilitates cooperation between Members and non-Members, including through encouraging non-Contracting Parties to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures.
	Relationship to non-cooperating non-Contracting Parties	• Extent to which CCAMLR provides for action in accordance with international law against non-Contracting Parties undermining the objective of the Convention, as well as measures to deter such activities, as well as encouraging them to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures.

Area	General criteria	Detailed criteria
5. International cooperation (continued)	Cooperation with other international organisations	• Extent to which CCAMLR cooperates with other international organisations.
	Special requirements of Developing States	• Extent to which CCAMLR recognises the special needs of Developing States and pursues forms of cooperation with Developing States, taking into account the Code of Conduct for Responsible Fisheries Article 5. • Extent to which CCAMLR Members, individually or through the Commission, provide relevant assistance to Developing States.
6. Financial and administrative issues	Availability of resources for activities	• Extent to which financial and other resources are made available to achieve the aims of CCAMLR and to implement CCAMLR's decisions.
	Efficiency and cost-effectiveness	• Extent to which CCAMLR is efficiently and effectively managing its human and financial resources, including those of the Secretariat. • Extent to which the schedule and organisation of the meetings could be improved.

APPENDIX III

SUMMARY STATUS OF ALL CURRENTLY FISHED STOCKS IN THE CAMLR CONVENTION AREA

Contents

1. *Dissostichus eleginoides* in Subarea 48.3 (assessed fishery)

Table III.1a: *Dissostichus eleginoides* assessment history in Subarea 48.3. SSB_0: median pre-exploitation spawning stock biomass; B_0: pre-exploitation biomass; SSB: median current spawning stock biomass; Range: 95% CI; GYM: Generalised Yield Model; CASAL: C++ Algorithmic Stock Assessment Laboratory (Integrated Assessment).

Year of assessment (model used)	Pre-exploration		Current SSB ($x10^3$ tonnes)	Escapement SSB/B_0 or SSB/SSB_0	Reference WG-FSA report (SC-CAMLR, Annex 5)
	Parameter	Estimate ($x10^3$ tonnes)			
1992				-	
1993 (Diff. Eqn.)				-	XII (6.20 to 6.23)
1994 (none)				-	XIII (4.39)
1995 (GYM)	SSB_0		100–200	0.74	XIV (5.69)
1996 (GYM)	SSB_0			0.53	XV (4.75 to 4.80)
1997 (GYM)	SSB_0			0.59	XVI (4.161 and 4.162)
1998 (GYM)	SSB_0			0.53	XVII (4.104 to 4.107)
1999 (GYM)	SSB_0			0.574	XVIII (4.136 to 4.138)
2000 (GYM)	SSB_0			0.546	XIX (4.143 to 4.152)
2001 (GYM)	SSB_0			0.54	XIX (4.106 to 4.114)
2002 (GYM)	SSB_0			0.519	XXI (Table 5.11)
2003 (GYM)	SSB_0			-	XXII (5.122)
2004 (GYM)	SSB_0			0.697	XXIII (Table 5.30)
2005 (CASAL)	B_0*	177.3 (157.7–202.1)	124.0 (104.6–148.7)	0.69 (0.66–0.74)	XXIV (Appendix G)
2006 (CASAL)	B_0	102.8 (96.3–109.4)	57.8 (51.2–64.4)	0.56 (0.53–0.59)	XXV (Appendix L)
2007 (CASAL)	B_0	112 (98.7–125)	67.1 (52.9–79.9)	0.59 (0.54–0.64)	XXVI (Appendix J)

* For CASAL, SSB_0 was interpreted as the estimate of B_0 for each Monte Carlo sample (see SC-CAMLR-XXV, Appendix L, paragraph 50).

Table III.1b: SC-CAMLR recommendations for *Dissostichus eleginoides* in Subarea 48.3.

Year of meeting	Recommended yield (tonnes)	Associated advice	Reference (SC-CAMLR report)	
1990	1200–8000	Use lower part of range pending improved assessments	IX	(3.59)
1991	794–8819	Concern about IMAF	X	(4.63 to 4.67)
1992	750–5370	Limit the number of vessels	XI	(3.79 and 3.80)
1993	900–1700	Concern about uncertainty	XII	(3.34 to 3.39)
1994	-	Reviewed range of possible yields, no agreement	XIII	(2.20 to 2.29)
1995	4000	Restrict to longliners	XIV	(4.52)
1996	5000	Change fishing period to reduce IMAF	XV	(4.57)
1997	Less than 3540		XVI	(5.54)
1998	Less than 3616		XVII	(5.54 to 5.57)
1999	5310		XVIII	(5.69 to 5.77)
2000	4500	Assessment revised during SC meeting	XIX	(5.48 to 5.50)
2001	5820		XX	(5.35 and 5.36)
2002	7810		XXI	(4.55 to 4.57)
2003	4420	SC unable to advise	XXII	(4.73 to 4.76)
2004	-	Unable to advise, divide catch limit into three regions	XXIII	(4.57 to 4.61)
2005	3556	WG-FSA unable to advise on appropriate base case (GYM vs ASPM)	XXIV	(4.59 to 4.62)
2006	3554	Divide catch limit into three regions	XXV	(4.71 and 4.72)
2007	3920		XXVI	(4.57 to 4.59)

Table III.1c: Commission decisions for *Dissostichus eleginoides* in Subarea 48.3.

Year of meeting	Agreed catch limit (tonnes/season)	Associated advice	Reference (conservation measure)
1990	2500		24/IX
1991	3500		35/X
1992	3350	No increase in the number of vessels	55/XI
1993	1300	Special area for protective and scientific study; limit divided evenly amongst five fishing periods; research plan; scientific observers	69/XII
1994	2800	Scientific observers	80/XIII
1995	4000	Longliners only; scientific observers	93/XIV
1996	5000	+Season 1 March to 31 August	102/XV
1997	3300	+Season 1 April to 31 August	124/XVI
1998	3500	+Season 15 April to 31 August	154/XVII
1999	5310	+Season 1 May to 31 August	179/XVIII
2000	4500	Same as previous season	196/XIX
2001	5820	Same as previous season	221/XX
2002	7810	Same as previous season	41-02 (2002)
2003	4420	Same as previous season	41-02 (2003)
2004	3050	Limit divided amongst three areas	41-02 (2004)
2005	3556	Same as previous season	41-02 (2005)
2006	3554	Same as previous season	41-02 (2006)
2007	3920	Same as previous season	41-02 (2007)

Table III.1d: Catch history for *Dissostichus eleginoides* in Subarea 48.3. SGSR: South Georgia–Shag Rocks stock; West: area outside SGSR stock area.

Season	Regulated fishery			Estimated IUU catch (tonnes)	Total removals (tonnes)		
	Effort (No. vessels)	*D. eleginoides* catch (tonnes)			SGSR	West	Subarea
		Limit	Reported				
1984/85	1	-	521	0	517	4	521
1985/86	1	-	733	0	733	0	733
1986/87	1	-	1954	0	1954	0	1954
1987/88	2	-	876	0	876	0	876
1988/89	3	-	7060	144	6963	241	7204
1989/90	2	-	6785	437	6838	384	7222
1990/91	1	2500	1756	1775	3531	0	3531
1991/92	23	3500	3809	3066	6864	11	6875
1992/93	18	3350	3020	4019	7039	0	7039
1993/94	4	1300	658	4780	5246	191	5438
1994/95	13	2800	3371	1674	4972	73	5045
1995/96	13	4000	3602	0	3530	72	3602
1996/97	10	5000	3812	0	3808	4	3812
1997/98	9	3300	3201	146	3347	0	3347
1998/99	12	3500	3636	667	4303	0	4303
1999/00	17	5310	4904	1015	5910	9	5919
2000/01	18	4500	4047	196	4232	11	4243
2001/02	17	5820	5742	3	5717	29	5745
2002/03	19	7810	7528	0	7510	18	7528
2003/04	17	4420	4497	0	4460	37	4497
2004/05	8	3050	3039	23	3062	0	3062
2005/06	11	3556	3535	0	3535	0	3535
2006/07	10	3554	3535	0	3535	0	3535

2. *Dissostichus* spp. in the Ross Sea (exploratory fishery)

Note: The information summarised below relates to the assessment of *Dissostichus* spp. in the Ross Sea. The Ross Sea is located in Subarea 88.1 and Subarea 88.2 east of 150°W (SSRUs 882A and 882B). The Commission currently manages the exploratory fishery for *Dissostichus* spp. in the Ross Sea by setting limits in Subarea 88.1 (CM 41-09) and closing SSRUs 882A and 882B in Subarea 88.2 (Conservation Measure 41-10).

Table III.2a: *Dissostichus* spp.: Assessment history in Subarea 88.1 and SSRUs 882A and 882B (Ross Sea). B_0: pre-exploitation biomass; SSB: median current spawning stock biomass; Range: 95% CI; CASAL: C++ Algorithmic Stock Assessment Laboratory (Integrated Assessment).

Year of assessment (model used)	Pre-exploration B_0* ($x10^3$ tonnes)		Current SSB ($x10^3$ tonnes)		Escapement SSB/B_0		Reference WG-FSA Report (SC-CAMLR, Annex 5)	
1996 (483analogy)**						-	XV	(4.20 to 4.34)
1997 (483analogy)						-	XVI	(4.127 to 4.130)
1998 (483analogy)						-	XVII	(4.73 to 4.83)
1999 (483analogy)						-	XVIII	(4.76 to 4.87)
2000 (483analogy)						-	XIX	(4.20 to 4.33, 4.77)
2001 (483analogy)						-	XX	(4.25 to 4.48)
2002 (483analogy)						-	XXI	(5.32 to 5.34)
2003 (483analogy)						-	XXII	(5.30 to 5.35)
2004 (prelimCASAL)						-	XXIII	(5.69 to 5.71)
2005 (CASAL)	69.42	(47.69–111.93)	61.28	(39.56–103.79)	0.883	(0.829–0.927)	XXIV	(Appendix F)
2006 (CASAL)	80.51	(59.92–119.92)	69.79	(49.21–101.19)	0.867	(0.821–0.904)	XXV	(Appendix F)
2007 (CASAL)	71.2	(59.57–87.9)	58.32	(46.7–75.01)	0.819	(0.784–0.854)	XXVI	(Appendix I)

* For CASAL, median pre-exploitation spawning stock biomass was interpreted as the estimate of B_0 for each Monte Carlo sample (see SC-CAMLR-XXV, Appendix L, paragraph 50).

** 483analogy: yields were estimated by relating the CPUE, biological parameters and fishable seabed area for *D. mawsoni* to the CPUE, biological parameters, yield estimates and fishable seabed area for *D. eleginoides* in Subarea 48.3 (see SC-CAMLR-XIX, Annex 5, paragraphs 4.20 to 4.33).

Table III.2b: SC-CAMLR recommendations for *Dissostichus* spp. in Subarea 88.1 and SSRUs 882A and 882B from 2005 onwards.

Year of meeting	Recommended yield (tonnes)	Associated advice	Reference (SC-CAMLR report)
1996	2 200	Conservative potential yield for each subarea and division	XV (8.36 to 8.39)
1997	1 510	Apply discount factor, with 100 tonne limit in each fine-scale rectangle, consideration of IMAF	XVI (9.60 to 9.62)
1998	2 010	Same as previous season	XVII (9.44 to 9.50, Table 8)
1999	-	Retain previous limits, apply discount factor, develop fishery-based research	XVIII (9.44 to 9.49)
2000	3 778	Apply discount factor of 0.25–0.5, fishery-based research	XIX (9.20)
2001	5 016	Apply discount factor of 0.5	XX (9.9 and 9.10)
2002	13 882	Apply discount factor of 0.3–0.5, tagging	XXI (4.110 to 4.114)
2003	-	Retain previous limits, 483 analogy should no longer be used	XXII (4.184 to 4.186)
2004	-	Retain previous season limits	XXIII (4.167)
2005	2 964	Limits allocated by SSRU, tagging	XXIV (4.176)
2006	3 072	Same as previous season	XXV (4.204)
2007	2 700	Same as previous season	XXVI (4.157 and 4.158)

Table III.2c: Commission decisions for *Dissostichus* spp. in Subarea 88.1.

Year of meeting	Agreed catch limit (tonnes/season)	Associated advice	Reference (conservation measure)
1996	1980	New fishery, observers and IMAF requirements	112/XV, 115/XV
1997	1510	Exploratory fishery, limits allocated N and S of 65°S, observers and IMAF requirements	143/XVI
1998	2281	Same as previous season	169/XVII
1999	2090	+limits by SSRU, research and data collection plans, prohibition within 10 n miles of Balleny Islands	190/XVIII
2000	2064	Same as previous season	210/XIX
2001	2508	Same as previous season	235/XX
2002	3760	Same as previous season	41-09 (2002)
2003	3250	+reallocation of SSRUs and limits, tagging	41-09 (2003)
2004	3250	Same as previous season	41-09 (2004)
2005	2964	Same as previous season*	41-09 (2005)
2006	3072	Same as previous season	41-09 (2006)
2007	2700	Same as previous season	41-02 (2007)

* The fishery in SSRUs 882A and 882B was closed

Table III.2d: *Dissostichus* spp. catch history in Subarea 88.1. Reported catch includes catch from research fishing.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
1996/97	-	1	1980	0	0	0	0	0
1997/98	-	1	1510	1	41	42	0	42
1998/99	2	2	2281	1	296	297	0	297
1999/00	-	3	2090	0	751	751	0	751
2000/01	6	10	2064	34	626	660	0	660
2001/02	10	3	2508	12	1313	1325	92	1417
2002/03	13	10	3760	26	1805	1831	0	1831
2003/04	26	21	3250	13	2184	2197	240	2437
2004/05	21	10	3250	6	3113	3120	23	3143
2005/06	21	13	2964	1	2968	2969	0	2969
2006/07	21	15	3072*	12	3084	3096	0	3096

* Includes 40 tonnes for research fishing (CCAMLR-XXV, paragraph 12.56).

3. *Euphausia superba* in Area 48 (assessed fishery)

Table III.3a: *Euphausia superba* assessment history in Area 48. B_0: pre-exploitation biomass; KYM: krill yield model; GYM: generalised yield model; DWBA: distorted-wave Born approximation model; SDWBA: stochastic distorted-wave Born approximation model (Demer and Conti, 2003).

Year of assessment (model used)	Pre-exploration B_0* estimate (million tonnes)	Analysis	Reference WG-EMM report (SC-CAMLR, Annex 4)
1991 (KYM)	15.1	BIOMASS data with Greene et al. (1991) target-strength model	Report of WG-Krill, paragraphs 6.31 to 6.59
2000 (KYM)	44.29 (CV 11.38%)	CCAMLR-2000 Survey, method of Jolly and Hampton (1990) with DWBA target-strength model	XIX (Appendix G)
2007 (GYM)	37.29 (CV 21.20%)	CCAMLR-2000 Survey, method of Jolly and Hampton (1990) with SDWBA target-strength model	XXVI (2.67 to 2.80)

* Krill standing stock being estimated and used as a proxy for krill pre-exploitation biomass.

Table III.3b: SC-CAMLR recommendations for *Euphausia superba* in Area 48.

Year of meeting	Recommended yield (tonnes)	Associated advice	Reference (SC-CAMLR report)
1991	2 200 000	Applies to Area 48, with a precautionary catch limit of 1 500 000 tonnes	X (3.71)
2000	4 000 000	Allocated as follows: Subarea 48.1: 1 008 000 tonnes Subarea 48.2: 1 104 000 tonnes Subarea 48.3: 1 056 000 tonnes Subarea 48.4: 832 000 tonnes With trigger limit of 620 000 tonnes	XIX (5.4 and 5.5)
2007	3 470 000	Applies to Subareas 48.1, 48.2, 48.3 and 48.4, should not exceed trigger level of 620 000 tonnes until a procedure is established to allocate overall limit by SSMUs.	XXVI (3.42 to 3.44)

Table III.3c: Commission decisions for *Euphausia superba* in Area 48.

Year of meeting	Agreed catch limit (tonnes/season)	Associated advice	Reference (conservation measure)
1991	1 500 000	Limits applied to subareas, or other basis, if total catch in Subareas 48.1, 48.2 and 48.3 in any season exceeds 620 000 tonnes	32/X
1992	-	If total catch in subareas 48.1, 48.2 and 48.3 in any season exceeds 620000 tonnes then limits as follows: Subarea 48.1: 420 000 tonnes Subarea 48.2: 735 000 tonnes Subarea 48.3: 360 000 tonnes Subarea 48.4: 75 000 tonnes Subarea 48.5: 75 000 tonnes Subarea 48.6: 300 000 tonnes	46/XI
2000	4 000 000	Subarea 48.1: 1 008 000 tonnes Subarea 48.2: 1 104 000 tonnes Subarea 48.3: 1 056 000 tonnes Subarea 48.4: 832 000 tonnes Limits applied to SSMUs, or other basis, if total catch in Area 48 in any season exceeds 620 000 tonnes	32/XIX
2002		Same as previous seasons + data requirement	51-01 (2002)
2006		Same as previous seasons + environmental requirement	51-01 (2006)
2007	3 470 000	Applies to Subareas 48.1, 48.2, 48.3 and 48.4. Limits applied to SSMUs, or on other basis, if total catch in Subareas 48.1, 48.2, 48.3 and 48.4 in any season exceeds 620 000 tonnes.	51-01 (2007)

Table III.3d: Catch history for *Euphausia superba* in Area 48.

Season	Catch (tonnes)
1972/73	59
1973/74*	19 339
1974/75*	41 352
1975/76*	1 552
1976/77*	68 301
1977/78*	78 837
1979/80*	356 821
1980/81*	154 474
1981/82*	326 788
1982/83	65 115
1983/84	40 534
1984/85	212 011
1985/86	378 739
1986/87	400 835
1987/88	388 953
1988/89	352 271
1989/90	376 099
1990/91	331 318
1991/92	257 663
1992/93	60 783
1993/94	84 645
1994/95	134 420
1995/96	91 150
1996/97	75 653
1997/98	90 024
1998/99	101 957
1999/00	114 425
2000/01	104 182
2001/02	125 987
2002/03	117 728
2003/04	118 166
2004/05	128 991
2005/06	106 549
2006/07	104 586

* Season unknown for some catch data, split-year used as an approximation.

4. Catch histories for target species in other CCAMLR fisheries

Exploratory fisheries for *Dissostichus* spp.

Table III.4: *Dissostichus* spp. catch history in Subarea 48.6.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2003/04	6	1	910	7	0	7	-	7
2004/05	3	2	910	49	2	51	-	51
2005/06	2	1	910	100	63	163	-	163
2006/07	4	3	910	78	35	113	-	113

Table III.5: *Dissostichus* spp. catch history in Division 58.4.1.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2003/04	-	0	800	0	0	0	-	0
2004/05	9	7	600	1	480	480	-	480
2005/06	11	6	600	0	421	421	597	1018
2006/07	9	4	600	94	551	645	612	1257

Table III.6: *Dissostichus* spp. catch history in Division 58.4.2.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2002/03	1	1	500	0	117	117	98	215
2003/04	-	1	500	0	20	20	197	217
2004/05	8	4	780	1	125	127	86	213
2005/06	7	3	780	0	163	164	192	356
2006/07	8	3	780	0	123	124	197	321

Table III.7: *Dissostichus* spp. catch history in Division 58.4.3a.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2003/04	6	0	250	0	0	0	-	0
2004/05	3	4	250	100	10	110	98	208
2005/06	4	1	250	88	1	89	0	89
2006/07	3	2	250	2	2	4	0	4

Table III.8: *Dissostichus* spp. catch history in Division 58.4.3b (BANZARE Bank).

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Effort (No. vessels)		*Dissostichus* spp.					
			Catch limit (tonnes)	Reported catch (tonnes)				
	Limit	Reported		*D. eleginoides*	*D. mawsoni*	Total		
2003/04	6	1	300	1	6	7	246	253
2004/05	5	4	300	1	296	297	1015	1312
2005/06	5	4	300	44	317	361	1903	2264
2006/07	6	4	300	75	178	253	2293	2546

Assessed fisheries for *Dissostichus eleginoides*

Table III.9: *Dissostichus eleginoides* catch history in Division 58.5.2.

Season	Regulated fishery						Estimated IUU catch (tonnes)	Total removals (tonnes)
	Reported effort (No. vessels)	Catch limit (tonnes)	Reported catch (tonnes)					
			Longline	Pot	Trawl	Total		
1989/90	-	-	0	0	1	1	0	1
1991/92	-	-	0	0	0	0	0	0
1992/93	-	-	0	0	0	0	0	0
1994/95	-	297	0	0	0	0	0	0
1995/96	-	297	0	0	0	0	300	3000
1996/97	2	3800	0	0	1927	1927	7117	9044
1997/98	3	3700	0	0	3765	3765	4150	7915
1998/99	2	3690	0	0	3547	3547	427	3974
1999/00	2	3585	0	0	3566	3566	1154	4720
2000/01	2	2995	0	0	2980	2980	2004	4984
2001/02	2	2815	0	0	2756	2756	3489	6245
2002/03	3	2879	270	0	2574	2844	1274	4118
2003/04	3	2873	567	0	2296	2864	531	3395
2004/05	3	2787	621	0	2122	2744	265	3009
2005/06	3	2584	659	68	1801	2528	74	2602
2006/07*	2	2427	624	0	1697	2321	0	2321

NB: Three fisheries in the Convention Area are currently excluded from CCAMLR's fishery-related CMs:

- Fishery for *D. eleginoides* in the French EEZ in Division 58.5.1 (Kerguelen Islands) managed by France;
- Fishery for *D. eleginoides* in the French EEZ in Subarea 58.6 (Crozet Islands) managed by France;
- Fishery for *D. eleginoides* in the South African EEZ in Subareas 58.7 and 58.6 and Division 58.4.4 (and also Area 51 outside the Convention Area) (Prince Edward Islands) managed by South Africa.

Assessed fisheries for *Champsocephalus gunnari*

Table III.10: *Champsocephalus gunnari* catch history in Subarea 48.3.

Season	Reported effort (No. vessels)	Catch limit (tonnes)	Reported catch (tonnes)
1976/77	-	-	93 595
1977/78	-	-	7 472
1978/79	-	-	809
1979/80	-	-	8 795
1980/81	-	-	27 903
1981/82	-	-	54 040
1982/83	-	-	178 824
1983/84	-	-	35 743
1984/85	-	-	628
1985/86	-	-	21 008
1986/87	-	-	80 586
1987/88	1	35 000	36 054
1988/89	-	0	3
1989/90	-	8 000	8 135
1990/91	-	26 000	44
1991/92	-	0	5
1992/93	-	9 200	0
1993/94	-	9 200	13
1994/95	-	0	10
1995/96	-	1 000	0
1996/97	-	1 300	0
1997/98	1	4 520	6
1998/99	1	4 840	265
1999/00	2	4 036	4 114
2000/01	5	6 760	960
2001/02	5	5 557	2 667
2002/03	4	2 181	1 986
2003/04	7	2 887	2 683
2004/05	7	3 574	200
2005/06	5	2 244	2 169
2006/07	5	4 337	4 336

Table III.11: *Champsocephalus gunnari* catch history in Division 58.5.2.

Season	Reported effort (No. vessels)	Catch limit (tonnes)	Reported catch (tonnes)
1971/72	-	-	5 860
1973/74	-	-	7 525
1974/75	-	-	9 710
1976/77	-	-	15 201
1977/78	-	-	5 166
1989/90	-	-	2
1991/92	-	-	5
1992/93	-	-	3
1994/95	-	311	0
1995/96	-	311	0
1996/97	1	311	227
1997/98	3	900	115
1998/99	1	1 160	2
1999/00	2	916	137
2000/01	2	1 150	1 136
2001/02	2	885	865
2002/03	2	2 980	2 345
2003/04	2	292	78
2004/05	2	1 864	1 851
2005/06	1	1 210	660
2006/07	1	42	1

NB: Other fisheries have been conducted in the Convention Area, and are currently not being prosecuted.

5. IUU catch history for *Dissostichus* spp. in the Convention Area

Table III.12: *Dissostichus* spp. IUU catch history in the Convention Area. IUU fishing was first detected in 1988/89, and estimates are derived from longlining and gillnetting activities. Blank: no estimate; zero: no evidence of IUU fishing. (Source: WG-FSA-07/10 Rev. 5 and SC-CAMLR reports.)

Season	Subarea or division													All areas
	Unknown	48.3	58.4.1	58.4.2	58.4.3a	58.4.3b	58.4.4	58.5.1	58.5.2	58.6	58.7	88.1	88.2	
1988/89		144						0		0				144
1989/90		437						0	0	0				437
1990/91		1 775						0	0	0				1 775
1991/92		3 066						0	0	0				3 066
1992/93		4 019						0	0	0				4 019
1993/94		4 780						0	0	0				4 780
1994/95		1 674						0	0	0				1 674
1995/96		0						833	3 000	7 875	4 958			16 666
1996/97		0					375	6 094	7 117	11 760	7 327	0		32 673
1997/98		1 46					1 298	7 156	4 150	1 758	598	0		15 106
1998/99		667					1 519	1 237	427	1 845	173	0		5 868
1999/00		1 015					1 254	2 600	1 154	1 430	191	0		7 644
2000/01		196					1 247	4 550	2 004	685	120	0		8 802
2001/02		3		295			880	6 300	3 489	720	78	92	0	11 857
2002/03		0		98			110	5 518	1 274	302	120	0	0	7 422
2003/04		0		197		246	0	536	531	380	48	240	0	2 178
2004/05	508	23		86	98	1 015	220	268	265	12	60	23	0	2 578
2005/06	336	0	597	192	0	1 903	104	144	74	55	0	0	15	3 420
2006/07		0	612	197	0	2 293	109	404	0	0	0	0	0	3 615
All seasons	844	17 945	1 209	1 065	98	5 457	7 116	35 640	23 485	26 822	13 673	355	15	133 724

APPENDIX IV

EXAMPLES OF SCIENTIFIC RECOMMENDATIONS FOR KRILL FISHERIES WHICH WERE NOT IMMEDIATELY IMPLEMENTED BY THE COMMISSION

Recommendations from the Scientific Committee		Implementation by the Commission	
Year	Detail	Year	Detail
	Scientific observations		
2000	Recommended the placement of national and/or international scientific observers, following the protocols outlined in the *Scientific Observers Manual* (SC-CAMLR-XIX, paragraph 3.14)		
2001	Reiterated need for detailed data (SC-CAMLR-XX, paragraphs 3.7 to 3.9)	2001	Endorsed the approach (CCAMLR-XX, paragraph 4.14)
2002	Noted the inconsistency in the data requirements for krill fisheries (SC-CAMLR-XXI, paragraphs 4.19 and 4.23)	2002	Noted the inconsistency and the compelling needs for detailed data (CCAMLR-XXI, paragraphs 4.27 and 4.28)
2002	Recognised the importance of data collected regularly by scientific observers (SC-CAMLR-XXI, paragraphs 4.19 and 4.22)		
2003	Implement standard electronic logbooks on krill vessels (SC-CAMLR-XXII, paragraph 2.1)		
2004	Reiterated need for placement of scientific observers on board krill fishing vessels (SC-CAMLR-XXIII, paragraph 2.5)	2004	Noted the need (CCAMLR-XXIII, paragraph 4.5)
2005	Reiterated need for placement of scientific observers on board krill fishing vessels (SC-CAMLR-XXIV, paragraphs 2.7 to 2.10)		
2005	Advised the Commission that the majority of the obstacles to the placement of scientific observers on board krill fishing vessels did not fall within the Scientific Committee's responsibilities (SC-CAMLR-XXIV, paragraphs 2.21 to 2.24)		Noted the advice (CCAMLR-XXIV, paragraphs 9.3 and 9.8)
2005	Advised on new requirements for detailed data and coverage by scientific observers (SC-CAMLR-XXIV, paragraph 4.11)	2005	Noted the need (CCAMLR-XXIV, paragraphs 4.24 and 4.32)
2006	Re-iterated need for scientific observations, with focus on gear selectivity, by-catch of larval fish and IMAF (SC-CAMLR-XXV, paragraphs 2.15, 2.22 and 4.20)	2006	Noted the need (CCAMLR-XXV, paragraphs 4.27 to 4.30 and 10.1 to 10.11)
2007	Reiterated need for the systematic observer coverage in krill fisheries (SC-CAMLR-XXVI, paragraphs 3.13 to 3.16)	2007	Endorsed the approach (CCAMLR-XXVI, paragraph 4.35). Implemented requirement for observers in the fishery in Division 58.4.2 (note: fishery is inactive) (CCAMLR-XXVI, paragraph 4.49; CM 51-03)

Recommendations from the Scientific Committee		Implementation by the Commission	
Year	Detail	Year	Detail
	Fine-scale data		
2001	Urgent need for fine-scale catch and effort data for be reported in a consistent format; most Members agreed to haul-by-haul data (SC-CAMLR-XX, paragraph 5.17)	2001	Acknowledged need for consistent haul-by-haul data (CCAMLR-XX, paragraph 4.15)
2002	Submission of haul-by-haul data is necessary for future assessments (SC-CAMLR-XXI, paragraphs 3.19, 4.6, 4.17 and 4.22)		
2002	Noted the inconsistency in the data requirements for krill fisheries (SC-CAMLR-XXI, paragraphs 4.19 and 4.23)	2002	Noted the inconsistency and the compelling needs for detailed data (CCAMLR-XXI, paragraphs 4.27 and 4.28)
2005	Recommended that haul-by-haul catch and effort data be collected in krill fisheries (SC-CAMLR-XXIV, paragraphs 3.28 and 3.43)		
2005	Advised on new requirements for detailed data (SC-CAMLR-XXIV, paragraph 4.11)	2005	Implemented the requirement for haul-by-haul catch and effort data in krill fisheries (CM 23-06)
2007	Identified the need to report fine-scale biological data (SC-CAMLR-XXVI, paragraph 3.50)	2007	Endorsed the approach, with view of implementing in 2008 (CCAMLR-XXVI, paragraph 4.46)
	In-season monitoring and forecast closures		
2001	Caution on the potential for overshooting the catch limit (SC-CAMLR-XX, paragraph 5.19)	2001	Noted the risk (CCAMLR-XX, paragraph 4.16)
2002	A shorter reporting period than monthly would be required to avoid a potential overshoot of the catch limit by 30% (SC-CAMLR-XXI, paragraph 4.12)	2002	Noted the risk (CCAMLR-XXI, paragraph 4.27)
		2004	Include krill fisheries in the monthly catch and effort reporting system (CMs 23-03, 23-06)
2007	Catch and effort reporting system – need shorter period than monthly (SC-CAMLR-XXVI, paragraph 3.48)	2007	Flag States must switch to 10-day reporting when the reported catch in any season exceed 80% of the trigger level/catch limit (CCAMLR-XXVI, paragraph 4.45)
	Orderly development		
2002	Information/notifications of future plans is generally inadequate to indicate future trends in the krill fishery (SC-CAMLR-XXI, paragraph 4.7)	2002	Noted the inadequacy (CCAMLR-XXI, paragraph 4.27)
2003	Re-iterated need for detailed notifications on future plans for the fishery, and recommended use of a pro forma (SC-CAMLR-XXII, paragraph 4.14)	2003	Urged Members to complete the pro forma and submit to the Secretariat (CCAMLR-XXII, paragraph 4.37)
2004	Noted the utility of the pro forma notification form; however, ability to predict trends in the fishery still hampered by a lack of information on technological and economic developments (SC-CAMLR-XXIII, paragraphs 4.15 to 4.17)	2004	Noted the developments, and agreed that Members intending to fish in the upcoming season should notify the Secretariat (CCAMLR-XXIII, paragraphs 4.28 and 4.29)
		2005	Noted utility of the notification procedure (CCAMLR-XXIV, paragraph 4.31)

Recommendations from the Scientific Committee		Implementation by the Commission	
Year	Detail	Year	Detail
2006	There is still inadequate information from the fishery on which to base management advice (SC-CAMLR-XXV, paragraphs 4.18 and 4.19)	2006	Implemented a formal notification procedure (CM 21-03)
2007	Reiterated the need for the orderly development of krill fisheries (SC-CAMLR-XXVI, paragraphs 4.19 to 4.24)	2007	Endorsed the approach (CCAMLR-XXVI, paragraph 4.35)

APPENDIX V

COMPARISON OF INCOME AND EXPENDITURE BY BUDGET ITEMS AND SUBITEMS

	2005 A$	2006 A$	2007 A$	2008 A$ (estimated)	2009 A$ (estimated)
INCOME					
Members' Annual Contributions	2 580 000	2 657 400	2 726 700	3 160 500	3 068 000
New Members' Contributions	0	0	54 798	0	0
From (to) Special Funds	0	68 863	190 000	180 000	85 000
Interest	75 652	92 475	129 668	120 000	130 000
Staff Assessment Levy	462 277	457 815	466 757	500 000	520 000
Surplus from prior year	122 503	112 976	171 225	364 000	361 000
	3 240 432	3 389 529	3 738 966	4 324 500	4 164 000
EXPENDITURE					
Data Management	512 879	537 618	543 109	643 100	650 000
Science	0	0	0	0	574 000
Compliance	613 275	639 495	710 138	779 900	309 000
Communications	711 206	739 718	806 607	855 500	897 000
Information Services	265 509	282 222	268 108	323 500	325 000
Information Technology	292 053	303 300	345 459	386 300	395 000
Administration	732 534	715 921	701 837	1 097 200	1 014 000
	3 127 456	3 218 274	3 375 258	4 085 500	4 164 000
Expenditure allocated by subitem					
Salaries and Allowances	2 227 107	2 400 241	2 517 150	2 700 000	2 780 000
Equipment	161 098	159 758	167 471	220 000	225 000
Insurance and Maintenance	61 575	93 409	115 891	117 000	125 000
Training	36 519	36 881	18 852	19 000	19 000
Meeting facilities	213 630	215 068	218 866	318 000	330 000
Travel	149 334	117 603	157 338	157 000	305 000
Printing and copying	59 004	54 341	46 133	58 000	61 000
Communication	112 809	70 421	60 320	78 000	81 000
Sundry	106 380	70 552	73 237	296 500	243 000
	3 127 456	3 218 274	3 375 258	4 085 500	4 164 000
Income and Expenditure from end of year Financial Statements since 2006					
Total Income	3 569 343	4 038 589	4 169 509		
Total Expenditure	3 382 733	3 567 531	3 995 998		

FIGURES AND TABLES NOT INCLUDED
IN THE TEXT OF THE REPORT

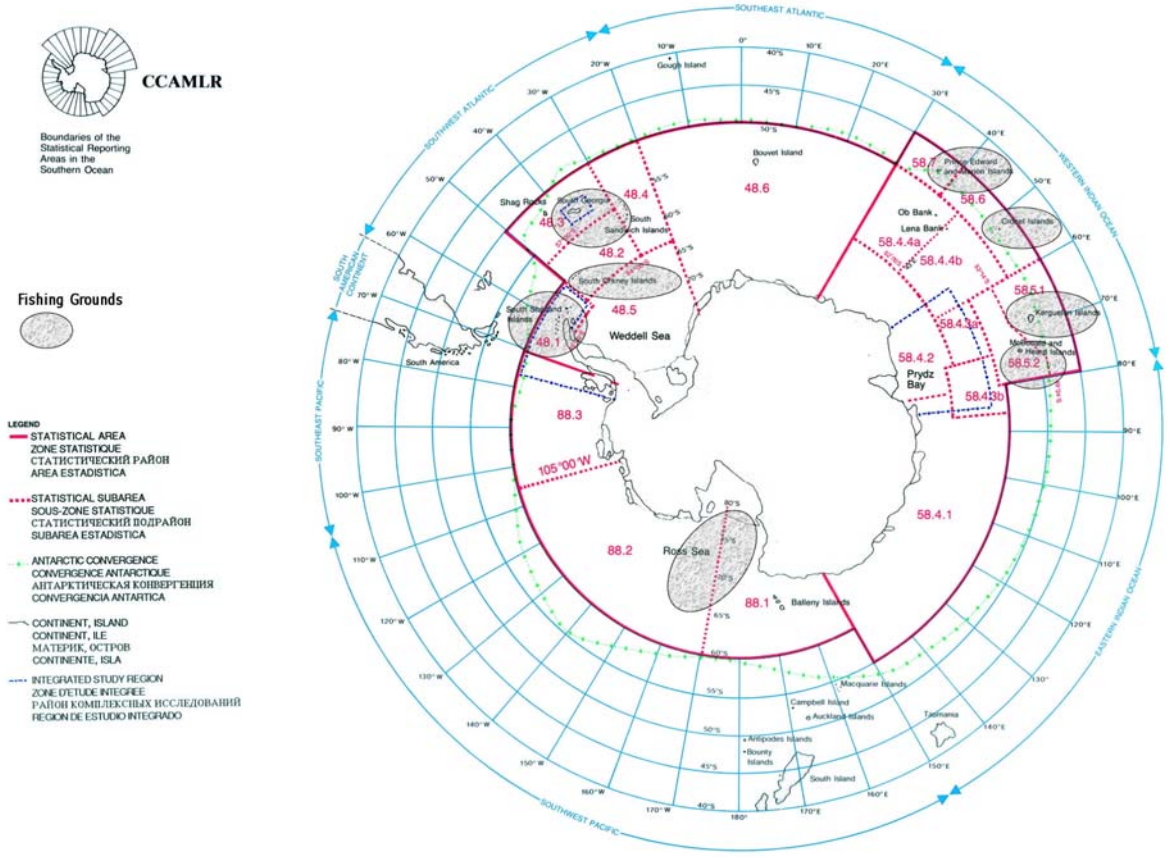

Figure 1: The CAMLR Convention Area showing the location of finfish fishing grounds.

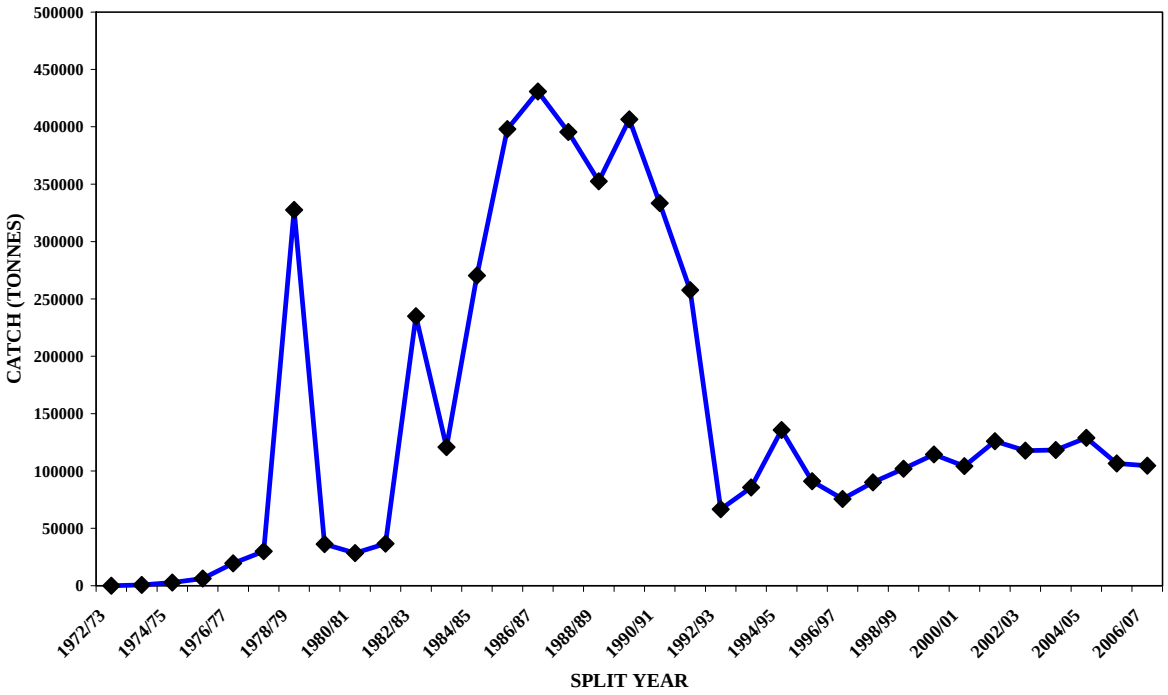

Figure 2: Annual krill catches in the CAMLR Convention Area from 1972/73 to 2006/07 by split-year (1 July one year to 30 June next).

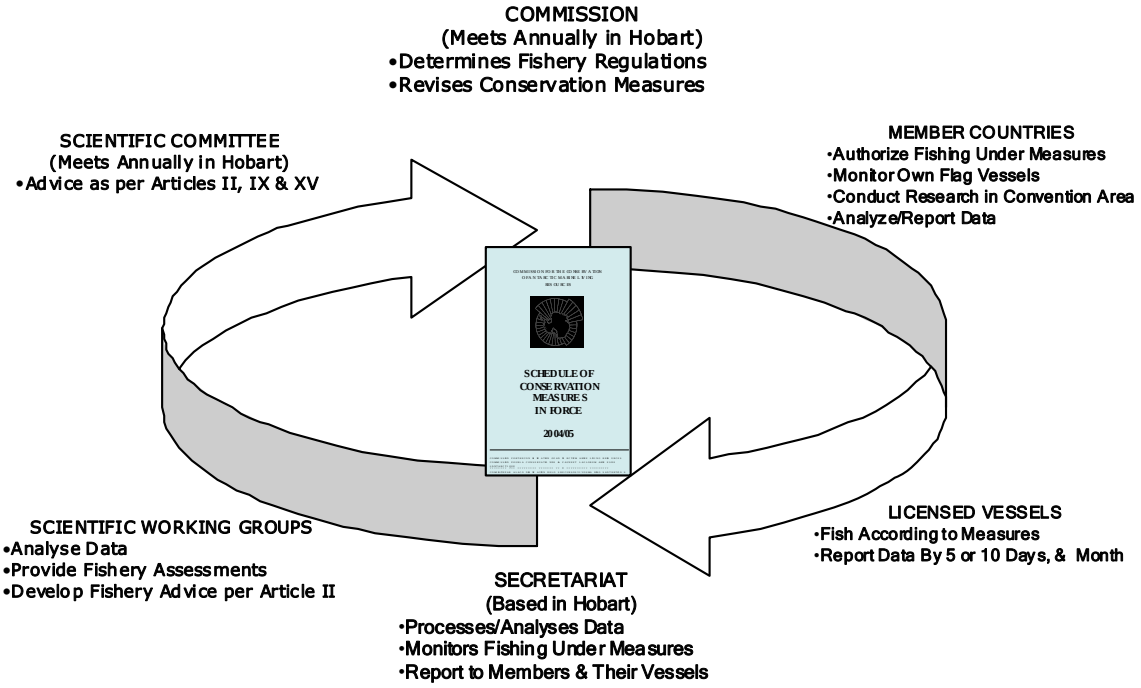

Figure 3: Links between various CCAMLR institutions and annual cycle of management and associated actions.

Table 1: CCAMLR statistical areas, subareas and divisions where finfish (by species) harvesting has occurred.

Location	Common name	Species fished
Statistical Area 48	**Atlantic Ocean sector**	
Subarea 48.1	South Shetland Is	*Notothenia rossii, Chaenocephalus aceratus, Chaenodraco wilsoni, Champsocephalus gunnari, Lepidonotothen* [*Notothenia*] *gibberifrons*
Subarea 48.2	South Orkney Is	*N. rossii, C. aceratus, C. gunnari, Pseudochaenichthys georgianus, Dissostichus eleginoides, L. gibberifrons, L.* [*Notothenia*] *squamifrons*
Subarea 48.3	South Georgia	*N. rossii, D. eleginoides, C. gunnari, Electrona carlsbergi, C. aceratus, P. georgianus, N. gibberifrons, N. squamifrons, Patagonotothen guntheri*
Subarea 48.4	South Sandwich Is	*D. eleginoides*
Statistical Area 58	**Indian Ocean sector**	
Subarea 58.6	Crozet and Prince Edward Is	*D. eleginoides*
Subarea 58.7	Prince Edward Is	*D. eleginoides*
Division 58.4.2		*C. wilsoni, D. mawsoni*
Division 58.4.3	BANZARE and Elan Banks	*D. eleginoides, D. mawsoni*
Division 58.4.4	Ob and Lena Banks	*D. eleginoides, L. squamifrons*
Division 58.5.1	Kerguelen Is	*N. rossii, D. eleginoides, C. gunnari, L. squamifrons*
Division 58.5.2	Heard and McDonald Is	*D. eleginoides, C. gunnari*
Statistical Area 88	**Pacific Ocean sector**	
Subarea 88.1	Ross Sea	*D. mawsoni*
Subarea 88.2	Ross Sea	*D. mawsoni*

Table 2: ATCM decisions (Dec.), recommendations (Rec.) and resolutions (Res.) relating to Antarctic Marine Living Resources (AMLR) and/or CCAMLR.

Recommendation or Resolution	Subject	Status	Category	Topics
Rec. VIII-10 (1975)	Protection and study AMLR	Effective 16/12/1978	AMLR	AMLR general SCAR Scientific cooperation
Rec. IX-2 (1977)	Scientific research AMLR	Effective 08/9/1983	AMLR	CCAMLR AMLR general Oceanography Scientific cooperation
Rec. X-2 (1979)	CCAMLR negotiations	Effective 8/4/1987	AMLR	CCAMLR AMLR general
Rec. XI-2 (1981)	Entry into force CCAMLR	Effective 5/10/1989 Expired Dec. 3 (2002)	AMLR	CCAMLR AMLR general
Dec. 4 (1998)	CCAMLR approved MPAs	Adopted 5/6/1998	Area protection and management	Listed SSSIs
Res. XXIII-3 (1999)	Support for CCAMLR	Adopted 4/6/1999	AMLR	CCAMLR IUU fishing AMLR general
Res. XXII-2 (2000)	Support for CCAMLR CDS	Adopted 15/9/2000	AMLR	CCAMLR IUU fishing AMLR general
Res. XXIV-2 (2001)	Support for CCAMLR CDS	Adopted 20/7/2001	AMLR	CCAMLR IUU fishing AMLR general
Res. XXV-3 (2002)	Support for CCAMLR	Adopted 20/9/2002	AMLR	CCAMLR IUU fishing AMLR general
Dec. 9 (2005)	Marine Protected Areas	Adopted 17/6/2005	Area protection and management	CCAMLR AMLR general Marine Protected Areas Protected Areas general
Res. 1 (2006)	CCAMLR in ATS	Adopted 23/6/2006	AMLR	CCAMLR AMLR general Environmental protection

Table 3: Categories and codes used to classify CCAMLR conservation measures.

Category	2-digit code
Compliance	10
General fishery matters	
Notifications	21
Gear regulations	22
Data reporting	23
Research and experiments	24
Minimisation of incidental mortality	25
Environmental protection	26
Fishery regulation	
General measures	31
Fishing season, closed areas and prohibition of fishing	32
By-catch limits	33
Finfish fisheries	
Toothfish	41
Icefish	42
Other finfish	43
Crustacean fisheries	
Krill	51
Crab	52
Mollusc fisheries	
Squid	61
Protected areas	
CEMP sites	91

Table 4: Some key CCAMLR regulatory conservation measures (CM) and resolutions (R).

Type of measure	Measure
Fishery regulatory measures	
Prohibit directed toothfish fishing in absence of conservation measures	CM 32-09
Advance notification of new fisheries	CM 21-01
Advance notification and conduct of exploratory toothfish fisheries, including data collection and research plans	CMs 21-02 and 41-01
Fishing effort limitation	CMs 41-04 to 41-07
Reporting catch, effort and biological data, including reporting of fine-scale data	CMs 23-01, 23-02, 23-03, 23-04 and 23-05
Placing international scientific observers on vessels targeting toothfish	CM 41-01 and others Scheme of International Scientific Observation
Reducing seabird mortality during longline and trawl fishing	CMs 25-02 and 25-03
Flag State measures	
Contracting Party licensing and inspection obligations for fishing vessels under their flag in Convention Area	CM 10-02
At-sea inspections of Contracting Party fishing vessels	System of Inspection
Marking of fishing vessels and fishing gear	CM 10-01
Deployment satellite-based VMS on vessels (except krill fishery) licensed by CCAMLR Members to fish in Convention Area	CM 10-04
Toothfish Catch Documentation Scheme	CM 10-05
Port State measures	
Port inspections of vessels landing toothfish to ensure compliance with CCAMLR conservation measures	CM 10-03
Scheme promoting compliance by Contracting Party vessels with conservation measures	CM 10-06
Scheme promoting compliance by non-Contracting Party vessels with conservation measures	CM 10-07
Scheme promoting compliance by Contracting Party nationals with conservation measures	CM 10-08
Resolutions	
Harvesting stocks occurring both within and outside the Convention Area, with due respect to CCAMLR conservation measures	R 10/XII
Implementation of Catch Documentation Scheme by Acceding States and non-Contracting Parties	R 14/XIX
Use of ports not implementing Toothfish Catch Documentation Scheme	R 15/XXII
Application of VMS in Catch Documentation Scheme	R 16/XIX
Use of VMS and other measures to verify CDS catch data outside Convention Area, especially in FAO Statistical Area 51	R 17/XX
Harvesting of toothfish outside areas of Coastal State jurisdiction adjacent to Convention Area in FAO Statistical Areas 51 and 57	R 18/XXI
Flags of non-compliance	R 19/XXI
Electronic Catch Documentation Scheme for *Dissostichus* spp.	R 21/XXIII
Non-Contracting Party Cooperation Enhancement Program	R 24/XXIV*
Combating IUU fishing in Convention Area by non-Contracting Party flag vessels	R 25/XXV

* Resolution 24/XXIV has been superseded by the 'Policy to Enhance Cooperation between CCAMLR and non-Contracting Parties' which is included in the *Schedule of Conservation Measures in Force 2008/09*.

Table 5: Some key CCAMLR environmental protection conservation measures (CM) and resolutions (R).

Type of measure	Measure
General environmental protection	
Interim prohibition of deep-sea gillnetting	CM 22-04
Interim restrictions on bottom trawling gear use in high-seas areas within Convention Area, 2006/07 to 2007/08	CM 22-05
General environmental protection during fishing	CM 26-01
Area closure/protection	
Areas closed to directed fishing for finfish in Subareas 48.1 and 48.2	CMs 32-02 and 32-03
Areas closed to directed fishing except under specific conservation measures	CM 32-09
Fishing season	
Definition	CM 32-01
Limit fishing to specific fishing seasons	CMs 41-02.(5), 41-03.(6), 41-04.(3), 41-05.(4), 41-06.(3), 41-07.(3), 41-08.(3), 41-09.(3), 41-10.(3)/(4), 41-11.(4), 42-01.(5), 42-02.(6), 51-01.(5), 51-02.(4), 51-03.(2) and 52-01.(6)
Site protection	
Procedures for, and protection of, CEMP (CCAMLR Ecosystem Monitoring Program) sites	CMs 91-01 to 91-03
Species protection	
Prohibition of directed fishing for certain species	CMs 32-04 to 32-17
Shark conservation	CM 32-18
Incidental mortality mitigation	CMs 25-02, 25-03 and relevant section of numerous fishery regulation CMs
By-catch regulation	CMs 33-01, 33-02, 33-03, 41-01.(4), 41-02.(6–8), 41-05.(7), 41-06.(4), 41-07.(4), 41-08.(4), 41-11.(7), 42-01.(6), 42-02.(7) and 52-01.(7)
International cooperation	
International actions to reduce seabird incidental mortality arising from fishing	R 22/XXV
Fishing gear regulation	
Marking of fishing vessels and gear	CM 10-01
Mesh size regulation	CMs 22-01, 22-02 and 22-03
Fishing gear weighting, construction and operation	CMs 25-02.(2,3), 25-03.(5,6)
Fishing gear testing	CMs 24-02
Maritime safety	
Minimum safe vessel lights during night longlining	CM 25-02.(4) and 25-03.(2)
Safety on board vessels fishing in Convention Area	R 23/XXIII
Ice-strengthening standards in high-latitude fisheries	R 20/XXII

TEXT OF THE CONVENTION ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

STATEMENT BY THE CHAIRMAN OF THE CONFERENCE ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

CONVENTION ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

The Contracting Parties,

RECOGNISING the importance of safeguarding the environment and protecting the integrity of the ecosystem of the seas surrounding Antarctica;

NOTING the concentration of marine living resources found in Antarctic waters and the increased interest in the possibilities offered by the utilisation of these resources as a source of protein;

CONSCIOUS of the urgency of ensuring the conservation of Antarctic marine living resources;

CONSIDERING that it is essential to increase knowledge of the Antarctic marine ecosystem and its components so as to be able to base decisions on harvesting on sound scientific information;

BELIEVING that the conservation of Antarctic marine living resources calls for international co-operation with due regard for the provisions of the Antarctic Treaty and with the active involvement of all States engaged in research or harvesting activities in Antarctic waters;

RECOGNISING the prime responsibilities of the Antarctic Treaty Consultative Parties for the protection and preservation of the Antarctic environment and, in particular, their responsibilities under Article IX, paragraph 1(f) of the Antarctic Treaty in respect of the preservation and conservation of living resources in Antarctica;

RECALLING the action already taken by the Antarctic Treaty Consultative Parties including in particular the Agreed Measures for the Conservation of Antarctic Fauna and Flora, as well as the provisions of the Convention for the Conservation of Antarctic Seals;

BEARING in mind the concern regarding the conservation of Antarctic marine living resources expressed by the Consultative Parties at the Ninth Consultative Meeting of the Antarctic Treaty and the importance of the provisions of Recommendation IX-2 which led to the establishment of the present Convention;

BELIEVING that it is in the interest of all mankind to preserve the waters surrounding the Antarctic continent for peaceful purposes only and to prevent their becoming the scene or object of international discord;

RECOGNISING, in the light of the foregoing, that it is desirable to establish suitable machinery for recommending, promoting, deciding upon and co-ordinating the measures and scientific studies needed to ensure the conservation of Antarctic marine living organisms;

HAVE AGREED as follows:

ARTICLE I

1. This Convention applies to the Antarctic marine living resources of the area south of 60° South latitude and to the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence which form part of the Antarctic marine ecosystem.

2. Antarctic marine living resources means the populations of fin fish, molluscs, crustaceans and all other species of living organisms, including birds, found south of the Antarctic Convergence.

3. The Antarctic marine ecosystem means the complex of relationships of Antarctic marine living resources with each other and with their physical environment.

4. The Antarctic Convergence shall be deemed to be a line joining the following points along parallels of latitude and meridians of longitude:

50°S, 0°; 50°S, 30°E; 45°S, 30°E; 45°S, 80°E; 55°S, 80°E; 55°S, 150°E; 60°S, 150°E; 60°S, 50°W; 50°S, 50°W; 50°S, 0°.

ARTICLE II

1. The objective of this Convention is the conservation of Antarctic marine living resources.

2. For the purposes of this Convention, the term ‘conservation’ includes rational use.

3. Any harvesting and associated activities in the area to which this Convention applies shall be conducted in accordance with the provisions of this Convention and with the following principles of conservation:

(a) prevention of decrease in the size of any harvested population to levels below those which ensure its stable recruitment. For this purpose its size should not be allowed to fall below a level close to that which ensures the greatest net annual increment;

(b) maintenance of the ecological relationships between harvested, dependent and related populations of Antarctic marine living resources and the restoration of depleted populations to the levels defined in sub-paragraph (a) above; and

(c) prevention of changes or minimisation of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades, taking into account the state of available knowledge of the direct and indirect impact of harvesting, the effect of the introduction of alien species, the effects of associated activities on the marine ecosystem and of the effects of environmental changes, with the aim of making possible the sustained conservation of Antarctic marine living resources.

ARTICLE III

The Contracting Parties, whether or not they are Parties to the Antarctic Treaty, agree that they will not engage in any activities in the Antarctic Treaty area contrary to the principles and purposes of that Treaty and that, in their relations with each other, they are bound by the obligations contained in Articles I and V of the Antarctic Treaty.

ARTICLE IV

1. With respect to the Antarctic Treaty area, all Contracting Parties, whether or not they are Parties to the Antarctic Treaty, are bound by Articles IV and VI of the Antarctic Treaty in their relations with each other.

2. Nothing in this Convention and no acts or activities taking place while the present Convention is in force shall:

(a) constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in the Antarctic Treaty area or create any rights of sovereignty in the Antarctic Treaty area;

(b) be interpreted as a renunciation or diminution by any Contracting Party of, or as prejudicing, any right or claim or basis of claim to exercise coastal state jurisdiction under international law within the area to which this Convention applies;

(c) be interpreted as prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any such right, claim or basis of claim;

(d) affect the provision of Article IV, paragraph 2, of the Antarctic Treaty that no new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the Antarctic Treaty is in force.

ARTICLE V

1. The Contracting Parties which are not Parties to the Antarctic Treaty acknowledge the special obligations and responsibilities of the Antarctic Treaty Consultative Parties for the protection and preservation of the environment of the Antarctic Treaty area.

2. The Contracting Parties which are not Parties to the Antarctic Treaty agree that, in their activities in the Antarctic Treaty area, they will observe as and when appropriate the Agreed Measures for the Conservation of Antarctic Fauna and Flora and such other measures as have been recommended by the Antarctic Treaty Consultative Parties in fulfilment of their responsibility for the protection of the Antarctic environment from all forms of harmful human interference.

3. For the purposes of this Convention, 'Antarctic Treaty Consultative Parties' means the Contracting Parties to the Antarctic Treaty whose Representatives participate in meetings under Article IX of the Antarctic Treaty.

ARTICLE VI

Nothing in this Convention shall derogate from the rights and obligations of Contracting Parties under the International Convention for the Regulation of Whaling and the Convention for the Conservation of Antarctic Seals.

ARTICLE VII

1. The Contracting Parties hereby establish and agree to maintain the Commission for the Conservation of Antarctic Marine Living Resources (hereinafter referred to as 'the Commission').

2. Membership in the Commission shall be as follows:

(a) each Contracting Party which participated in the meeting at which this Convention was adopted shall be a Member of the Commission;

(b) each State Party which has acceded to this Convention pursuant to Article XXIX shall be entitled to be a Member of the Commission during such time as that acceding Party is engaged in research or harvesting activities in relation to the marine living resources to which this Convention applies;

(c) each regional economic integration organisation which has acceded to this Convention pursuant to Article XXIX shall be entitled to be a Member of the Commission during such time as its States members are so entitled;

(d) a Contracting Party seeking to participate in the work of the Commission pursuant to sub-paragraphs (b) and (c) above shall notify the Depositary of the basis upon which it seeks to become a Member of the Commission and of its willingness to accept conservation measures in force. The Depositary shall communicate to each Member of the Commission such notification and accompanying information. Within two months of receipt of such communication from the Depositary, any Member of the Commission may request that a special meeting of the Commission be held to consider the matter. Upon receipt of such request, the Depositary shall call such a meeting. If there is no request for a meeting, the Contracting Party submitting the notification shall be deemed to have satisfied the requirements for Commission Membership.

3. Each Member of the Commission shall be represented by one representative who may be accompanied by alternate representatives and advisers.

ARTICLE VIII

The Commission shall have legal personality and shall enjoy in the territory of each of the States Parties such legal capacity as may be necessary to perform its function and achieve the purposes of this Convention. The privileges and immunities to be enjoyed by the Commission and its staff in the territory of a State Party shall be determined by agreement between the Commission and the State Party concerned.

ARTICLE IX

1. The function of the Commission shall be to give effect to the objective and principles set out in Article II of this Convention. To this end, it shall:

   (a) facilitate research into and comprehensive studies of Antarctic marine living resources and of the Antarctic marine ecosystem;

   (b) compile data on the status of and changes in population of Antarctic marine living resources and on factors affecting the distribution, abundance and productivity of harvested species and dependent or related species or populations;

   (c) ensure the acquisition of catch and effort statistics on harvested populations;

   (d) analyse, disseminate and publish the information referred to in sub-paragraphs (b) and (c) above and the reports of the Scientific Committee;

   (e) identify conservation needs and analyse the effectiveness of conservation measures;

   (f) formulate, adopt and revise conservation measures on the basis of the best scientific evidence available, subject to the provisions of paragraph 5 of this Article;

   (g) implement the system of observation and inspection established under Article XXIV of this Convention;

   (h) carry out such other activities as are necessary to fulfil the objective of this Convention.

2. The conservation measures referred to in paragraph 1(f) above include the following:

   (a) the designation of the quantity of any species which may be harvested in the area to which this Convention applies;

   (b) the designation of regions and sub-regions based on the distribution of populations of Antarctic marine living resources;

   (c) the designation of the quantity which may be harvested from the populations of regions and sub-regions;

(d) the designation of protected species;

(e) the designation of the size, age and, as appropriate, sex of species which may be harvested;

(f) the designation of open and closed seasons for harvesting;

(g) 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;

(h) regulation of the effort employed and methods of harvesting, including fishing gear, with a view, inter alia, to avoiding undue concentration of harvesting in any region or sub-region;

(i) the taking of such other conservation measures as the Commission considers necessary for the fulfilment of the objective of this Convention, including measures concerning the effects of harvesting and associated activities on components of the marine ecosystem other than the harvested populations.

3. The Commission shall publish and maintain a record of all conservation measures in force.

4. In exercising its functions under paragraph 1 above, the Commission shall take full account of the recommendations and advice of the Scientific Committee.

5. The Commission shall take full account of any relevant measures or regulations established or recommended by the Consultative Meetings pursuant to Article IX of the Antarctic Treaty or by existing fisheries commissions responsible for species which may enter the area to which this Convention applies, in order that there shall be no inconsistency between the rights and obligations of a Contracting Party under such regulations or measures and conservation measures which may be adopted by the Commission.

6. Conservation measures adopted by the Commission in accordance with this Convention shall be implemented by Members of the Commission in the following manner:

(a) the Commission shall notify conservation measures to all Members of the Commission;

(b) conservation measures shall become binding upon all Members of the Commission 180 days after such notification, except as provided in subparagraphs (c) and (d) below;

(c) if a Member of the Commission, within ninety days following the notification specified in sub-paragraph (a), notifies the Commission that it is unable to accept the conservation measure, in whole or in part, the measure shall not, to the extent stated, be binding upon that Member of the Commission;

(d) in the event that any Member of the Commission invokes the procedure set forth in sub-paragraph (c) above, the Commission shall meet at the request of any Member of the Commission to review the conservation measure. At the time of

such meeting and within thirty days following the meeting, any Member of the Commission shall have the right to declare that it is no longer able to accept the conservation measure, in which case the Member shall no longer be bound by such a measure.

ARTICLE X

1. The Commission shall draw the attention of any State which is not a Party to this Convention to any activity undertaken by its nationals or vessels which, in the opinion of the Commission, affects the implementation of the objective of this Convention.

2. The Commission shall draw the attention of all Contracting Parties to any activity which, in the opinion of the Commission, affects the implementation by a Contracting Party of the objective of this Convention or the compliance by that Contracting Party with its obligations under this Convention.

ARTICLE XI

The Commission shall seek to co-operate with Contracting Parties which may exercise jurisdiction in marine areas adjacent to the area to which this Convention applies in respect of the conservation of any stock or stocks of associated species which occur both within those areas and the area to which this Convention applies, with a view to harmonising the conservation measures adopted in respect of such stocks.

ARTICLE XII

1. Decisions of the Commission on matters of substance shall be taken by consensus. The question of whether a matter is one of substance shall be treated as a matter of substance.

2. Decisions on matters other than those referred to in paragraph 1 above shall be taken by a simple majority of the Members of the Commission present and voting.

3. In Commission consideration of any item requiring a decision, it shall be made clear whether a regional economic integration organisation will participate in the taking of the decision and, if so, whether any of its Member States will also participate. The number of Contracting Parties so participating shall not exceed the number of Member States of the regional economic integration organisation which are Members of the Commission.

4. In the taking of decisions pursuant to this Article, a regional economic integration organisation shall have only one vote.

ARTICLE XIII

1. The headquarters of the Commission shall be established at Hobart, Tasmania, Australia.

2. The Commission shall hold a regular annual meeting. Other meetings shall also be held at the request of one-third of its Members and as otherwise provided in this Convention. The first meeting of the Commission shall be held within three months of the entry into force of this Convention, provided that among the Contracting Parties there are at least two States conducting harvesting activities within the area to which this Convention applies. The first meeting shall, in any event, be held within one year of the entry into force of this Convention. The Depositary shall consult with the signatory States regarding the first Commission meeting, taking into account that a broad representation of such States is necessary for the effective operation of the Commission.

3. The Depositary shall convene the first meeting of the Commission at the headquarters of the Commission. Thereafter, meetings of the Commission shall be held at its headquarters, unless it decides otherwise.

4. The Commission shall elect from among its Members a Chairman and Vice-Chairman, each of whom shall serve for a term of two years and shall be eligible for re-election for one additional term. The first Chairman shall, however, be elected for an initial term of three years. The Chairman and Vice-Chairman shall not be representatives of the same Contracting Party.

5. The Commission shall adopt and amend as necessary the rules of procedure for the conduct of its meetings, except with respect to the matters dealt with in Article XII of this Convention.

6. The Commission may establish such subsidiary bodies as are necessary for the performance of its functions.

ARTICLE XIV

1. The Contracting Parties hereby establish the Scientific Committee for the Conservation of Antarctic Marine Living Resources (hereinafter referred to as 'the Scientific Committee') which shall be a consultative body to the Commission. The Scientific Committee shall normally meet at the headquarters of the Commission unless the Scientific Committee decides otherwise.

2. Each Member of the Commission shall be a Member of the Scientific Committee and shall appoint a representative with suitable scientific qualifications who may be accompanied by other experts and advisers.

3. The Scientific Committee may seek the advice of other scientists and experts as may be required on an *ad hoc* basis.

ARTICLE XV

1. The Scientific Committee shall provide a forum for consultation and co-operation concerning the collection, study and exchange of information with respect to the marine living resources to which this Convention applies. It shall encourage and promote co-operation in the field of scientific research in order to extend knowledge of the marine living resources of the Antarctic marine ecosystem.

2. The Scientific Committee shall conduct such activities as the Commission may direct in pursuance of the objective of this Convention and shall:

(a) establish criteria and methods to be used for determinations concerning the conservation measures referred to in Article IX of this Convention;

(b) regularly assess the status and trends of the populations of Antarctic marine living resources;

(c) analyse data concerning the direct and indirect effects of harvesting on the populations of Antarctic marine living resources;

(d) assess the effects of proposed changes in the methods or levels of harvesting and proposed conservation measures;

(e) transmit assessments, analyses, reports and recommendations to the Commission as requested or on its own initiative regarding measures and research to implement the objective of this Convention;

(f) formulate proposals for the conduct of international and national programs of research into Antarctic marine living resources.

3. In carrying out its functions, the Scientific Committee shall have regard to the work of other relevant technical and scientific organisations and to the scientific activities conducted within the framework of the Antarctic Treaty.

ARTICLE XVI

1. The first meeting of the Scientific Committee shall be held within three months of the first meeting of the Commission. The Scientific Committee shall meet thereafter as often as may be necessary to fulfil its functions.

2. The Scientific Committee shall adopt and amend as necessary its rules of procedure. The rules and any amendments thereto shall be approved by the Commission. The rules shall include procedures for the presentation of minority reports.

3. The Scientific Committee may establish, with the approval of the Commission, such subsidiary bodies as are necessary for the performance of its functions.

ARTICLE XVII

1. The Commission shall appoint an Executive Secretary to serve the Commission and Scientific Committee according to such procedures and on such terms and conditions as the Commission may determine. His term of office shall be for four years and he shall be eligible for re-appointment.

2. The Commission shall authorise such staff establishment for the Secretariat as may be necessary and the Executive Secretary shall appoint, direct and supervise such staff according to such rules, and procedures and on such terms and conditions as the Commission may determine.

3. The Executive Secretary and Secretariat shall perform the functions entrusted to them by the Commission.

ARTICLE XVIII

The official languages of the Commission and of the Scientific Committee shall be English, French, Russian and Spanish.

ARTICLE XIX

1. At each annual meeting, the Commission shall adopt by consensus its budget and the budget of the Scientific Committee.

2. A draft budget for the Commission and the Scientific Committee and any subsidiary bodies shall be prepared by the Executive Secretary and submitted to the Members of the Commission at least sixty days before the annual meeting of the Commission.

3. Each Member of the Commission shall contribute to the budget. Until the expiration of five years after the entry into force of this Convention, the contribution of each Member of the Commission shall be equal. Thereafter the contribution shall be determined in accordance with two criteria: the amount harvested and an equal sharing among all Members of the Commission. The Commission shall determine by consensus the proportion in which these two criteria shall apply.

4. The financial activities of the Commission and Scientific Committee shall be conducted in accordance with financial regulations adopted by the Commission and shall be subject to an annual audit by external auditors selected by the Commission.

5. Each Member of the Commission shall meet its own expenses arising from the attendance at meetings of the Commission and of the Scientific Committee.

6. A Member of the Commission that fails to pay its contributions for two consecutive years shall not, during the period of its default, have the right to participate in the taking of decisions in the Commission.

ARTICLE XX

1. The Members of the Commission shall, to the greatest extent possible, provide annually to the Commission and to the Scientific Committee such statistical, biological and other data and information as the Commission and Scientific Committee may require in the exercise of their functions.

2. The Members of the Commission shall provide, in the manner and at such intervals as may be prescribed, information about their harvesting activities, including fishing areas and vessels, so as to enable reliable catch and effort statistics to be compiled.

3. The Members of the Commission shall provide to the Commission at such intervals as may be prescribed information on steps taken to implement the conservation measures adopted by the Commission.

4. The Members of the Commission agree that in any of their harvesting activities, advantage shall be taken of opportunities to collect data needed to assess the impact of harvesting.

ARTICLE XXI

1. Each Contracting Party shall take appropriate measures within its competence to ensure compliance with the provisions of this Convention and with conservation measures adopted by the Commission to which the Party is bound in accordance with Article IX of this Convention.

2. Each Contracting Party shall transmit to the Commission information on measures taken pursuant to paragraph 1 above, including the imposition of sanctions for any violation.

ARTICLE XXII

1. Each Contracting Party undertakes to exert appropriate efforts, consistent with the Charter of the United Nations, to the end that no one engages in any activity contrary to the objective of this Convention.

2. Each Contracting Party shall notify the Commission of any such activity which comes to its attention.

ARTICLE XXIII

1. The Commission and the Scientific Committee shall co-operate with the Antarctic Treaty Consultative Parties on matters falling within the competence of the latter.

2. The Commission and the Scientific Committee shall co-operate, as appropriate, with the Food and Agriculture Organisation of the United Nations and with other Specialised Agencies.

3. The Commission and the Scientific Committee shall seek to develop co-operative working relationships, as appropriate, with inter-governmental and nongovernmental organisations which could contribute to their work, including the Scientific Committee on Antarctic Research, the Scientific Committee on Oceanic Research and the International Whaling Commission.

4. The Commission may enter into agreements with the organisations referred to in this Article and with other organisations as may be appropriate. The Commission and the Scientific Committee may invite such organisations to send observers to their meetings and to meetings of their subsidiary bodies.

ARTICLE XXIV

1. In order to promote the objective and ensure observance of the provisions of this Convention, the Contracting Parties agree that a system of observation and inspection shall be established.

2. The system of observation and inspection shall be elaborated by the Commission on the basis of the following principles:

(a) Contracting Parties shall co-operate with each other to ensure the effective implementation of the system of observation and inspection, taking account of the existing international practice. This system shall include, inter alia, procedures for boarding and inspection by observers and inspectors designated by the Members of the Commission and procedures for flag state prosecution and sanctions on the basis of evidence resulting from such boarding and inspections. A report of such prosecutions and sanctions imposed shall be included in the information referred to in Article XXI of this Convention;

(b) in order to verify compliance with measures adopted under this Convention, observation and inspection shall be carried out on board vessels engaged in scientific research or harvesting of marine living resources in the area to which this Convention applies, through observers and inspectors designated by the Members of the Commission and operating under terms and conditions to be established by the Commission;

(c) designated observers and inspectors shall remain subject to the jurisdiction of the Contracting Party of which they are nationals. They shall report to the Member of the Commission by which they have been designated which in turn shall report to the Commission.

3. Pending the establishment of the system of observation and inspection, the Members of the Commission shall seek to establish interim arrangements to designate observers and inspectors and such designated observers and inspectors shall be entitled to carry out inspections in accordance with the principles set out in paragraph 2 above.

ARTICLE XXV

1. If any dispute arises between two or more of the Contracting Parties concerning the interpretation or application of this Convention, those Contracting Parties shall consult among themselves with a view to having the dispute resolved by negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement or other peaceful means of their own choice.

2. Any dispute of this character not so resolved shall, with the consent in each case of all Parties to the dispute, be referred for settlement to the International Court of Justice or to arbitration; but failure to reach agreement on reference to the International Court or to arbitration shall not absolve Parties to the dispute from the responsibility of continuing to seek to resolve it by any of the various peaceful means referred to in paragraph 1 above.

3. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Convention.

ARTICLE XXVI

1. This Convention shall be open for signature at Canberra from 1 August to 31 December 1980 by the States participating in the Conference on the Conservation of Antarctic Marine Living Resources held at Canberra from 7 to 20 May 1980.

2. The States which so sign will be the original signatory States of the Convention.

ARTICLE XXVII

1. This Convention is subject to ratification, acceptance or approval by signatory States.

2. Instruments of ratification, acceptance or approval shall be deposited with the Government of Australia, hereby designated as the Depositary.

ARTICLE XXVIII

1. This Convention shall enter into force on the thirtieth day following the date of deposit of the eighth instrument of ratification, acceptance or approval by States referred to in paragraph 1 of Article XXVI of this Convention.

2. With respect to each State or regional economic integration organisation which subsequent to the date of entry into force of this Convention deposits an instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the thirtieth day following such deposit.

ARTICLE XXIX

1. This Convention shall be open for accession by any State interested in research or harvesting activities in relation to the marine living resources to which this Convention applies.

2. This Convention shall be open for accession by regional economic integration organisations constituted by sovereign States which include among their members one or more States Members of the Commission and to which the States members of the organisation have transferred, in whole or in part, competences with regard to the matters covered by this Convention. The accession of such regional economic integration organisations shall be the subject of consultations among Members of the Commission.

ARTICLE XXX

1. This Convention may be amended at any time.

2. If one-third of the Members of the Commission request a meeting to discuss a proposed amendment the Depositary shall call such a meeting.

3. An amendment shall enter into force when the Depositary has received instruments of ratification, acceptance or approval thereof from all the Members of the Commission.

4. Such amendment shall thereafter enter into force as to any other Contracting Party when notice of ratification, acceptance or approval by it has been received by the Depositary. Any such Contracting Party from which no such notice has been received within a period of one year from the date of entry into force of the amendment in accordance with paragraph 3 above shall be deemed to have withdrawn from this Convention.

ARTICLE XXXI

1. Any Contracting Party may withdraw from this Convention on 30 June of any year, by giving written notice not later than 1 January of the same year to the Depositary, which, upon receipt of such a notice, shall communicate it forthwith to the other Contracting Parties.

2. Any other Contracting Party may, within sixty days of the receipt of a copy of such a notice from the Depositary, give written notice of withdrawal to the Depositary in which case the Convention shall cease to be in force on 30 June of the same year with respect to the Contracting Party giving such notice.

3. Withdrawal from this Convention by any Member of the Commission shall not affect its financial obligations under this Convention.

ARTICLE XXXII

The Depositary shall notify all Contracting Parties of the following:

(a) signatures of this Convention and the deposit of instruments of ratification, acceptance, approval or accession;

(b) the date of entry into force of this Convention and of any amendment thereto.

ARTICLE XXXIII

1. This Convention, of which the English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Government of Australia which shall transmit duly certified copies thereof to all signatory and acceding Parties.

2. This Convention shall be registered by the Depositary pursuant to Article 102 of the Charter of the United Nations.

Drawn up at Canberra this twentieth day of May 1980.

ANNEX FOR AN ARBITRAL TRIBUNAL

1. The arbitral tribunal referred to in paragraph 3 of Article XXV shall be composed of three arbitrators who shall be appointed as follows:

(a) The Party commencing proceedings shall communicate the name of an arbitrator to the other Party which, in turn, within a period of forty days following such notification, shall communicate the name of the second arbitrator. The Parties shall, within a period of sixty days following the appointment of the second arbitrator, appoint the third arbitrator, who shall not be a national of either Party and shall not be of the same nationality as either of the first two arbitrators. The third arbitrator shall preside over the tribunal;

(b) If the second arbitrator has not been appointed within the prescribed period, or if the Parties have not reached agreement within the prescribed period on the appointment of the third arbitrator, that arbitrator shall be appointed, at the request of either Party, by the Secretary-General of the Permanent Court of Arbitration, from among persons of international standing not having the nationality of a State which is a Party to this Convention.

2. The arbitral tribunal shall decide where its headquarters will be located and shall adopt its own rules of procedure.

3. The award of the arbitral tribunal shall be made by a majority of its members, who may not abstain from voting.

4. Any Contracting Party which is not a Party to the dispute may intervene in the proceedings with the consent of the arbitral tribunal.

5. The award of the arbitral tribunal shall be final and binding on all Parties to the dispute and on any Party which intervenes in the proceedings and shall be complied with without delay. The arbitral tribunal shall interpret the award at the request of one of the Parties to the dispute or of any intervening Party.

6. Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the expenses of the tribunal, including the remuneration of its members, shall be borne by the Parties to the dispute in equal shares.

STATEMENT BY THE CHAIRMAN OF THE CONFERENCE ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

The Conference on the Conservation of Antarctic Marine Living Resources decided to include in the publication of the Final Act of the Conference the text of the following statement made by the Chairman on 19 May 1980 regarding the application of the Convention on the Conservation of Antarctic Marine Living Resources to the waters adjacent to Kerguelen and Crozet over which France has jurisdiction and to waters adjacent to other islands within the area to which this Convention applies over which the existence of State sovereignty is recognised by all Contracting Parties.

'1. Measures for the conservation of Antarctic marine living resources of the waters adjacent to Kerguelen and Crozet, over which France has jurisdiction, adopted by France prior to the entry into force of the Convention, would remain in force after the entry into force of the Convention until modified by France acting within the framework of the Commission or otherwise.

2. After the Convention has come into force, each time the Commission should undertake examination of the conservation needs of the marine living resources of the general area in which the waters adjacent to Kerguelen and Crozet are to be found, it would be open to France either to agree that the waters in question should be included in the area of application of any specific conservation measure under consideration or to indicate that they should be excluded. In the latter event, the Commission would not proceed to the adoption of the specific conservation measure in a form applicable to the waters in question unless France removed its objection to it. France could also adopt such national measures as it might deem appropriate for the waters in question.

3. Accordingly, when specific conservation measures are considered within the framework of the Commission and with the participation of France, then:

(a) France would be bound by any conservation measures adopted by consensus with its participation for the duration of those measures. This would not prevent France from promulgating national measures that were more strict than the Commission's measures or which dealt with other matters;

(b) in the absence of consensus, France could promulgate any national measures which it might deem appropriate.

4. Conservation measures, whether national measures or measures adopted by the Commission, in respect of the waters adjacent to Kerguelen and Crozet, would be enforced by France. The system of observation and inspection foreseen by the Convention would not be implemented in the waters adjacent to Kerguelen and Crozet except as agreed by France and in the manner so agreed.

5. The understandings, set forth in paragraphs 1 to 4 above, regarding the application of the Convention to waters adjacent to the islands of Kerguelen and Crozet, also apply to waters adjacent to the islands within the area to which this Convention applies over which the existence of State sovereignty is recognised by all Contracting Parties.'

No objection to the statement was made.

LIST OF CONTRACTING PARTIES TO THE CONVENTION ON THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (CCAMLR CONVENTION)

Depositary: Australia – Department of Foreign Affairs and Trade, Canberra, ACT
Signed at Canberra, 20 May 1980
Entry into force: 7 April 1982

Participant	Signature	Ratification Accession (a) Acceptance (A) Succession (s)	Entry into force	Date of becoming a Member
Australia	11 Sep 1980	6 May 1981	7 Apr 1982	7 Apr 1982
Argentina	11 Sep 1980	28 May 1982	27 Jun 1982	27 Jun 1982
Belgium	11 Sep 1980	22 Feb 1984	23 Mar 1984	23 Mar 1984
Brazil		28 Jan 1986 (A)	27 Feb 1986	8 Jul 1986
Bulgaria		1 Sep 1992 (a)	1 Oct 1992	
Canada		1 Jul 1988 (a)	31 Jul 1988	
Chile	11 Sep 1980	22 Jul 1981	7 Apr 1982	7 Apr 1982
China, People's Republic of		19 Sep 2006 (a) 2 Sep 2007 (A)	19 Oct 2006 2 Oct 2007	2 Oct 2007
Cook Islands		20 Oct 2005 (a)	19 Nov 2005	
European Community		21 Apr 1982 (a)	21 May 1982	21 May 1982
Finland		6 Sep 1989 (a)	6 Oct 1989	
France	16 Sep 1980	16 Sep 1982	16 Oct 1982	16 Oct 1982
Germany	11 Sep 1980	23 Apr 1982	23 May 1982	23 May 1982
Greece		12 Feb 1987 (a)	14 Mar 1987	
India		17 Jun 1985 (A)	17 Jul 1985	29 Jun 1986
Italy		29 Mar 1989 (a)	28 Apr 1989	30 Jun 1990
Japan	12 Sep 1980	26 May 1981 (A)	7 Apr 1982	7 Apr 1982
Korea, Republic of		29 Mar 1985 (a)	28 Apr 1989	19 Nov 1985
Mauritius		2 Oct 2004 (a)	1 Nov 2004	
Namibia		29 Jun 2000 (a)	29 Jul 2000	5 Feb 2001
Netherlands		23 Feb 1990 (a)	25 Mar 1990	
New Zealand	11 Sep 1980	8 Mar 1982	7 Apr 1982	7 Apr 1982
Norway	11 Sep 1980	6 Dec 1983	5 Jan 1984	5 Jan 1984
Peru		23 Jun 1989 (a)	23 Jul 1989	
Poland	11 Sep 1980	28 Mar 1984	27 Apr 1984	27 Apr 1984
Russia	11 Sep 1980	26 May 1981	7 Apr 1982	7 Apr 1982
South Africa	11 Sep 1980	23 Jul 1981	7 Apr 1982	7 Apr 1982
Spain		9 Apr 1984 (a)	9 May 1984	21 Oct 1987
Sweden		6 Jun 1984 (a)	6 Jul 1984	30 Dec 1989
Ukraine		22 Apr 1994 (s)	22 May 1994	14 Dec 1994
United Kingdom	11 Sep 1980	31 Aug 1981	7 Apr 1982	7 Apr 1982
United States of America	11 Sep 1980	18 Feb 1982	7 Apr 1982	7 Apr 1982
Uruguay		22 Mar 1985 (a)	21 Apr 1985	21 Apr 1985
Vanuatu		20 Jul 2001 (a)	19 Aug 2001	