

REPORT OF THE CCAMLR WORKSHOP ON MARINE PROTECTED AREAS
(Silver Spring, MD, USA, 29 August to 1 September 2005)

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REPORT OF THE CCAMLR WORKSHOP ON MARINE PROTECTED AREAS (Silver Spring, MD, USA, 29 August to 1 September 2005)

INTRODUCTION

At CCAMLR-XXIII held in 2004, the Commission addressed the topic on Marine Protected Areas (MPAs¹) and urged the Scientific Committee to proceed with this work as a matter of priority. It also reaffirmed the need to develop advice on MPAs commensurate with Articles II and IX of the Convention (CCAMLR-XXIII, paragraph 4.13).

2. The Scientific Committee endorsed in principle the concept of a CCAMLR workshop on MPAs, developed its draft terms of reference and requested that the Chair of the WG-EMM Subgroup on Protected Areas, Dr P. Penhale (USA), act as Convener for the workshop (SC-CAMLR-XXIII, paragraphs 3.52 and 3.53). Intersessional tasks included the creation of a steering committee to develop the agenda and the suggested papers, as well as to identify the appropriate venue and timing of the workshop. The Scientific Committee also recommended that the workshop include invited experts, to take advantage of the large body of MPA knowledge that could be used to promote the goals of CCAMLR (SC-CAMLR-XXIII, paragraph 3.51).

3. The Steering Committee worked during the intersessional period. Based on the view of the Steering Committee, the Convener suggested that the workshop be held in 2005 before CCAMLR-XXIV. The proposal was circulated both to Members of the Commission and the Scientific Committee and received no objections. The workshop was held from 29 August to 1 September 2005 (NOAA National Marine Fisheries Service, Silver Spring, MD, USA).

OPENING OF THE WORKSHOP

4. Dr S. Murawski, Chief Science Adviser to the NOAA National Marine Fisheries Service, welcomed participants of the workshop. He highlighted the unique opportunity and challenges for CCAMLR to further its objective by applying MPAs not only as a tool for conservation and management of resources but also for monitoring general response of the Antarctic ecosystem to environmental and human-induced changes. In particular, the use of MPAs by CCAMLR would be most important in the light of the CCAMLR approach to ecosystem management.

ADOPTION OF AGENDA AND WORKSHOP ORGANISATION

5. The workshop Convener, Dr Penhale, advised participants on the workshop organisation. The draft agenda of the workshop was considered and adopted (see Appendix I). The agenda addressed all items listed in the workshop terms of reference agreed

¹ In the general context provided by IUCN: 'any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment'.

by the Scientific Committee (SC-CAMLR-XXIII, paragraph 3.52). The lists of workshop participants and papers considered are appended (see Appendix II and Appendix III respectively). Ms L. Kimball (IUCN) participated in the workshop as an invited expert. The workshop report was prepared by Dr A. Constable (Australia), Dr N. Gilbert and Miss J. McCabe (New Zealand), Prof. J. Croxall and Ms S. Grant (UK), Dr R. Holt and Ms P. Toschik (USA) and Dr E. Sabourenkov (Secretariat).

WORKSHOP OBJECTIVES

6. The following terms of reference for the workshop were agreed by the Scientific Committee (SC-CAMLR-XXIII, paragraph 3.52):

- (i) to review current principles and practices related to the establishment of MPAs;
- (ii) to discuss how the use of MPAs could be used to contribute to furthering the objectives of CCAMLR;
- (iii) to consider proposals that are currently under development or in a conceptual phase that relate to MPAs in the Convention Area;
- (iv) to discuss the types of scientific information that may be required for the development of MPAs to further the objectives of CCAMLR, including the identification of biophysical regions across the Convention Area.

7. The Convener reiterated that the workshop was organised to develop advice to the Scientific Committee on the application of MPAs commensurate with Articles II and IX of the Convention.

REVIEW OF CURRENT PRINCIPLES AND PRACTICES RELATED TO THE ESTABLISHMENT OF MPAS

General principles and guidelines

8. The workshop considered several papers that had been presented (WS-MPA-05/4, 05/6, 05/14 and COFI/2005/8). The workshop noted in particular that IUCN's paper on MPAs in the CCAMLR context (WS-MPA-05/4), which was introduced by Ms Kimball, provided helpful guidance and background information on many of the issues under consideration, including definitions of MPAs, and the international context for MPA designation.

9. Ms Grant presented WS-MPA-05/13 which reported on the SCAR Biology Symposium MPA workshop (July 2005, Curitiba, Brazil). This workshop highlighted, in particular, the potential for SCAR to contribute toward the collation of scientific data for the development of MPAs. The importance of monitoring programs in contributing towards an improved understanding of the potential benefits of MPAs was also noted.

10. Against the background of IUCN's paper, the workshop discussed the meaning of the term 'marine protected area' and agreed that it encompassed a range of mechanisms that could be used to help meet the objectives of Article II of CCAMLR. These included provisions available under CCAMLR and the Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol).

11. Dr R. Brock (USA) introduced 'Issues to Consider Before Jumping on the MPA Bandwagon' (WS-MPA-05/14) which provided practical advice on the process for MPA creation. This highlighted the importance of clearly articulating objectives for MPA designation, and of early consultation with a broad range of stakeholders. The paper also suggested that a successful MPA should be of sufficient size to achieve its goals, and its design should incorporate mechanisms to ensure effective monitoring and enforcement. The paper also noted that in order to ensure flexibility and to incorporate all stakeholders' views, the drawing of MPA boundaries might well be the final stage in the process.

12. Dr Constable introduced 'Guidelines for Establishing the Australian National Representative System of Marine Protected Areas (NRSMPA)' (WS-MPA-05/6). He noted that the notion of regional marine planning was a direct result of Australia's Oceans Policy and indicated that the NRSMPA had three key elements, referred to as the CAR system:

- Comprehensiveness – the need to include the full range of ecosystems across each bioregion;
- Adequacy – appropriately sized MPAs to ensure protection of ecological viability and integrity of populations, species and communities;
- Representativeness – sufficient MPAs to reflect the biotic diversity of marine ecosystems.

13. Dr Constable highlighted the importance of the precautionary approach built into the principles for developing the NRSMPA, and noted that the absence of scientific certainty was not considered sufficient reason to avoid designating MPAs. He also drew attention to the criteria contained in the NRSMPA for the identification and selection of MPAs (see WS-MPA-05/6, pp. 10 and 11).

14. The workshop agreed that the NRSMPA, and in particular the CAR principles, provided a candidate approach to the designation of MPAs that may have application in terms of principles and criteria, to CCAMLR's consideration of MPAs in the Southern Ocean.

15. The workshop considered two papers that provided worked examples of processes that had been followed to establish MPAs in the Southern Ocean. WS-MPA-05/7, submitted by Australia, provided information on the establishment of an MPA around Heard Island and McDonald Islands (HIMI), and WS-MPA-05/15, submitted by South Africa, provided information on the Prince Edward Islands MPA. The workshop agreed that these provided useful case studies on the establishment of MPAs within the CCAMLR Convention Area, albeit within existing EEZs.

16. Within the CCAMLR context, the workshop recognised the need to develop a strategic approach to MPA design and implementation throughout the Convention Area, notably in relation to a system of protected areas developed later in the report (paragraphs 66 to 70).

17. The workshop also recognised that there was a strong need for collaboration at technical and policy levels to further develop the MPA concept in the Convention Area. Relevant bodies in such a dialogue would include key elements of the Treaty System (CEP and the ATCM) as well as SCAR, SCOR, Observers to CCAMLR, intergovernmental and non-governmental organisations. It was also noted that, in many cases, CCAMLR Parties were also Parties to other international arrangements within which the issue of high-seas MPAs was being considered and that opportunities therefore existed to exchange information and expertise with such external agencies and organisations.

Economics of MPAs

18. Prof. Croxall introduced this topic and referred to a paper by the Royal Society for the Protection of Birds (WS-MPA-05/08) on the economics of MPAs. Participants were also directed to a paper on the worldwide cost of MPAs (Balmford et al., 2004 – see Appendix III). The workshop agreed that the Scientific Committee should be aware of the background material available on economic aspects of MPAs.

19. The workshop noted that costs associated with MPAs lay firstly with their selection and designation and secondly with their management and enforcement. It was agreed that, potentially, considerable additional costs could be associated with the acquisition of scientific data for the designation of MPAs as well as with the implementation of monitoring programs associated with MPAs. However, it was also recognised that current CCAMLR initiatives already involved compliance and enforcement and so additional costs might not be substantial.

20. The workshop noted also that it might be possible to harness funding through initiatives such as the World Bank and the Global Environmental Facility to assist with the research necessary to underpin MPA selection and designation.

Current instruments and agreements

21. Dr Gilbert presented WS-MPA-05/12 on legal considerations surrounding the designation of MPAs in Antarctica. Mr E. McIvor (Australia) presented WS-MPA-05/9 on the process for the establishment of MPAs by CCAMLR and the Antarctic Treaty Parties. This paper also included a proposal to establish a geographical reference line (e.g. 1 n mile from the coast or the 100 m isobath) to assist in determining whether ASPA or ASMA proposals under Annex V to the Protocol needed to be submitted to CCAMLR.

22. However, the workshop suggested that establishing a harmonised regime for the protection of the Antarctic marine environment across the ATS should be the primary aim but recognised that there would need to be a division between ATCM and CCAMLR on the management of different human activities in the region.

23. The workshop noted the applicability of current ATS instruments to the designation of MPAs in the Southern Ocean and the relationship between those provisions under Annex V to the Protocol and those under Article IX of CCAMLR. The workshop recalled that ATCM Decision 9 (2005) set out the criteria under which protected area proposals under the Protocol

that included a marine component needed to be submitted to CCAMLR for approval. However, it was recognised that the conditions under which these criteria were triggered needed further consideration and coordination.

24. Ms Grant introduced a paper which was previously submitted to WG-EMM and the Scientific Committee (SC-CAMLR-XXIII/BG/30) and later revised for publication. It discussed the applicability of international conservation agreements to the establishment of MPAs in Antarctica. Certain commitments and decisions from agreements such as the Convention on Biological Diversity (CBD) and the World Summit on Sustainable Development (WSSD) have relevance to MPA development under CCAMLR, particularly with regard to the commitments of most CCAMLR Members under these instruments. Specific decisions relate to the development of guidelines and criteria for MPAs, and improved processes for their implementation. Other species-specific agreements such as ACAP may also have relevance in providing mechanisms to strengthen protection for particular species.

25. Participants noted that additional background could be found in the IUCN's publication on international oceans governance and the 2005 information paper prepared by the IUCN on the international legal regime on the high seas and seabed beyond the limits of national jurisdiction (Kimball, 2001 – see Appendix III).

Research papers/summary papers/abstracts

26. The workshop also noted a number of other papers provided as background to its discussion (see Appendix III, List of Documents).

THE USE OF MPAS TO FURTHERING THE OBJECTIVES OF CCAMLR

Principles involved in the identification of potential MPAs
in the Convention Area

27. The objectives of CCAMLR, for which the use of MPAs (in the broadest sense) could be appropriate, derive principally from Articles II and IX of the Convention.

28. Article II establishes the basic objective of CCAMLR as the conservation of Antarctic marine living resources (where conservation includes rational use) and sets out the principles by which harvesting and associated activities shall be carried out.

29. Article IX further specifies the ways to give effect to the objective and principles of Article II. This Article relates particularly to the development and use of conservation measures, specifically including 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.

30. Under this provision, CCAMLR has used closed areas to support its precautionary approach to managing finfish fisheries. These have been established for specific purposes not related to MPAs.

31. Article IX also enjoins CCAMLR: (i) to take such other measures as necessary to fulfil the objective of the Convention, including those concerning the effects of harvesting and associated activities on components of the marine ecosystem other than harvested populations (e.g. dependent and associated species); (ii) to take full account of any relevant measures in regulations established or recommended by ATCMs pursuant to Article IX of the Antarctic Treaty.

32. In general, and particularly in the CCAMLR context, there is widespread evidence of the known or potential benefits of MPAs for, *inter alia*, the: (i) conservation (including restoration) of biodiversity; (ii) minimisation of detrimental effects of harvesting on non-target species; and (iii) protection (including restoration) of age classes, life-history stages, stocks and populations of species targeted by harvesting.

33. In addition, the workshop recognised that, in common with other international organisations with responsibility for the conservation and management of marine living resources on the high seas, CCAMLR had particular responsibility (not least as an organisation with the attributes of a regional fisheries management organisation but with a wider conservation mandate) for participating in the current international discussions on the use of MPAs to further such objectives.

34. Furthermore the workshop noted: (i) the existing commitments (e.g. in respect of WSSD, CBD, World Parks Congress etc.) of many, if not most, Members of CCAMLR to the establishment of representative networks of MPAs; (ii) the agreement of FAO to assist its members to achieve the WSSD target with respect to representative networks of MPAs and to develop technical guidelines for defining, implementing and testing of MPAs; (iii) the obligations of all Members of CCAMLR in respect of the Madrid Protocol.

35. Annex V (Article 3.2) of the Madrid Protocol contains the requirement to establish a system of ASPAs to include, *inter alia*:

- (i) areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;
- (ii) representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;
- (iii) areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;
- (iv) the type locality or only known habitat of any species;
- (v) areas of particular interest to ongoing or planned scientific research.

36. Overall, therefore, the workshop concluded that MPAs had considerable potential for furthering CCAMLR's objective in applications ranging from protection of ecosystem processes, habitats and biodiversity, to protection of species (including population and life history stages).

37. However, it was recognised that, given the diversity of potential benefits deriving from MPAs and the variety of different types of MPA (including the many different management practices that they could include), considerable clarity would be needed in specifying the precise objectives of using MPAs in the Convention Area.

38. In the specific context of fishery-related MPAs, the advice in the FAO COFI paper (COFI/2005/8), particularly in paragraphs 5 to 7, should be carefully considered, together with assessments deriving from MPA reviews by other relevant bodies.

39. Given the nature and scale of many processes and systems in the Southern Ocean, the emphasis of any attempt to create networks protecting ecosystem processes, representative areas, species or populations, is likely to require approaches that are flexible and medium to large scale, and that involve specific management measures relevant to the requirements of populations with substantial seasonal movements or changes in abundance. It will be particularly challenging to develop systems and networks to address the requirements of wide-ranging, long-lived taxa with complex life cycles and breeding systems.

40. However, there may be a need for CCAMLR to consider the adequacy of arrangements for the appropriate protection of certain spatially-restricted habitats with unique and/or highly diverse biological assemblages, such as seamounts (SC-CAMLR-XXIII, paragraph 3.31).

41. In this context it was noted that WS-MPA-05/4 contained a reference to a decision by NEAFC to close to fishing with all types of bottom fishing gears certain seamounts within its area of application. Details of the selection and designation procedure used by NEAFC, and by other relevant organisations, may be of relevance to CCAMLR.

42. Dr Constable noted that consideration of measures to mitigate impacts on benthic assemblages needed to include all bottom fishing practices, including trawling and longlining.

Examples of protected areas in the Convention Area

43. The workshop considered various general and specific examples of protected areas currently in force in the Convention Area.

44. Ms Grant introduced a paper which was previously submitted to WG-EMM and the Scientific Committee (SC-CAMLR-XXIII/BG/28) and later revised for publication. It listed current and proposed MPAs within the CCAMLR Convention Area. This paper demonstrates that almost all existing ASPAs and ASMAs are small, coastal areas that do not contribute to the objectives of CCAMLR, and have little relevance to CCAMLR-related activities. Furthermore, these existing areas make little contribution to the development of a representative system of MPAs under the requirements of the Madrid Protocol.

45. However, terrestrial or nearshore sites of scientific interest to CCAMLR (i.e. CEMP sites) highlight the importance of joint consideration by both CCAMLR and CEP.

46. The workshop also noted that the IWC has extended the designation of its Southern Ocean Sanctuary to 2014.

47. The workshop agreed that, overall, when viewed in relation to the IUCN categories of protected areas, the Convention Area as a whole would qualify as Category IV (Habitat/Species Management Area: protected area managed mainly for conservation through management intervention). This is defined as an area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

48. Dr Constable presented WS-MPA-05/7, outlining the process undertaken by the Australian Government to identify and declare the HIMI Marine Reserve an IUCN Category I protected area, under the Australian Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

49. In preparing a report on the conservation values of the HIMI EEZ, the Australian Antarctic Division had reviewed available, though in some cases limited, physical and biological data to define 13 biophysical units within the EEZ (report summary appended to the paper). The report identified that the HIMI region contains conservation values of global importance, and values which are unique within the Australian EEZ, including benthic habitat, the foraging range of land-based marine predators and nursery grounds for commercial fish species.

50. With consideration given to known and potential threats to the conservation values, the Australian NRSMPA principles (comprehensive, adequate and representative) and criteria for identification of MPAs (outlined in WS-MPA-05/6) were used to identify a possible reserve configuration that would:

- provide for protection of the marine and terrestrial conservation values;
- contribute to integrated and ecologically sustainable management of the HIMI region;
- provide scientific reference areas;
- add to the NRSMPA.

51. Consultation on the Reserve proposal with government, conservation groups and fishing industry stakeholders indicated the need for further investigation of particular areas where there was insufficient data to make a definite case for protection or fishing access. This resulted in the declaration of a conservation zone under the EPBC Act and the establishment of a three-year program, overseen by stakeholders, to provide protection of those areas while studies are undertaken to further assess the conservation values and fisheries resource potential of the area. On completion of the assessment, a decision will be made by the Minister for the Environment and Heritage over whether to add the conservation zone areas to the Reserve.

52. The conservation report also identified a number of questions for further investigation, including to consider the effects of current and future activities in the area, to determine the need to refine the Reserve configuration to better facilitate protection of the values.

53. The process to establish the Reserve was referred to the workshop as a model for CCAMLR consideration, because:

- (i) the Reserve is in the CCAMLR Convention Area (Division 58.5.2), and was declared as part of a representative system of MPAs (the NRSMPA) within a substantial marine jurisdiction (Australian);

- (ii) the Reserve and adjacent comprehensively managed (IUCN Category 'IV+' protected area equivalent) commercial fishery effectively collectively comprise a multiple-use MPA;
- (iii) the declaration process involved comprehensive and transparent consultation throughout with relevant stakeholders, government agencies, conservation and industry non-governmental organisations;
- (iv) Reserve compliance is supported by comprehensive regional, national and international arrangements for compliance and enforcement.

54. Mr McIvor referred the workshop to the HIMI website www.heardisland.aq for further information regarding the Reserve and its management plan and the HIMI Conservation Zone.

55. The workshop commended the specific procedures and frameworks for planning biodiversity conservation outlined in the Guidelines for Establishing the Australian National Representative System of MPAs, which had underpinned the establishment of the HIMI Marine Reserve. It recognised that the principles involved, notably those relating to CAR, together with the use of precautionary approaches and wide consultation with appropriate interest groups, combined with flexible decision-making and review procedures, and the capacity to designate areas for interim protection, were fundamental to the development of protected area networks in regional seas. Such principles were recognised as being fundamental to similar undertakings in high-seas areas.

56. The specific example of the process leading to the declaration of the HIMI Marine Reserve was also recognised to be a model of the practical implementation of the relevant procedures. The workshop noted that this approach should have widespread applicability to any part of the Convention Area wherein the application of MPAs (in the widest sense) was deemed appropriate.

57. It was noted that, in relation to IUCN protected area categories, the marine reserve within HIMI is an IUCN Category I. The remainder of the area would be equivalent to at least Category IV with conservation zones incorporating additional provisions.

58. Dr D. Nel (South Africa) indicated that South Africa had made considerable use of the framework provided by the HIMI example in developing its approaches to the designation of MPAs around the Prince Edward Islands. He enquired whether the CAR approach was able to incorporate consideration of maintenance of ecological processes, as well as contribute to the long-term sustainability of the fishery in the area.

59. Dr Constable indicated that the Australian NRSMPA explicitly incorporates maintenance of ecosystem processes as part of its primary goal. The sustainability of fishing is covered across a number of legal jurisdictions. It is intended that the NRSMPA contribute to a formal management framework for a broad spectrum of human activities, one of which is fisheries.

60. The workshop noted that the approaches developed by Australia offered advantages that may be useful to the development of approaches to establishing a network of MPAs within the Convention Area. These include: (i) flexibility, including the development of interim measures and provisions, recognising the benefit of improved scientific data on which

to develop more permanent designations and provisions; (ii) wide and continuing consultation with all interest groups, in particular to ensure appropriate balance between the sustainable use of marine living resources and minimising the effects of known or potential environmentally damaging activities; and (iii) matching levels of constraint on access to, and operation within, MPAs to the perceived importance of the conservation and/or biodiversity values of the area and to the level of scientific data available.

61. The workshop agreed that conservation outcomes appropriate for achieving the objectives in CCAMLR Article II would include the maintenance of biological diversity² as well as the maintenance of ecosystem processes.

62. It was agreed that attention may need to be given to the need for, *inter alia*, protection of:

- (i) representative areas³;
- (ii) scientific areas to assist with distinguishing between the effects of harvesting and other activities from natural ecosystem changes as well as providing opportunities for understanding the Antarctic marine ecosystem without interference;
- (iii) areas potentially vulnerable to impacts by human activities, to mitigate those impacts and/or ensure the sustainability of the rational use of marine living resources.

63. It was noted that some areas in the Southern Ocean may have predictable features that are critical to the function of local ecosystems. The workshop agreed that such areas would be appropriate to be included in a system of protected areas. Some participants felt that this should be considered as an objective in its own right, as follows:

The protection or maintenance of important ecosystem processes, in locations where those processes are amenable to spatial protection.

64. The workshop also considered the need for the Commission to achieve satisfactory fishery outcomes in terms of sustainable rational use. The process for establishing a system of protected areas will need to have regard for this objective of the Commission.

65. In the context of the discussion below an area would need to be defined according to geographic coordinates as well as depth. This is because some areas may not need to encompass the entire water column in order to achieve their objectives.

66. The conservation outcomes listed in paragraphs 62 and 63 are consistent with the criteria identified in the Madrid Protocol, Annex V, Article 3 that might be used to establish ASPAs, and with CCAMLR Article II. Protection of these areas would need to be indefinite or for a sufficiently long term to satisfy their objectives, such as for scientific reference areas. These areas would be equivalent to IUCN Category I areas. Recalling the discussion on the

² 'Biological diversity' means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (Convention on Biological Diversity).

³ A system of representative areas would aim to provide a comprehensive, adequate and representative system of MPAs to contribute to the long-term ecological viability of marine systems, to maintain ecological processes and systems, and to protect the Antarctic marine biological diversity at all levels.

HIMI Marine Reserve and the Australian NRSMPA (paragraphs 48 to 60), the workshop agreed that there was a need for the use of protected areas to satisfy the general CAR requirements.

67. For the purposes of this workshop, such areas are termed ‘Specially Protected Areas’. This term and those used below for other types of areas have meanings in other forums that are not the same meanings as those used here. The workshop recommended that the Scientific Committee or Commission consider the terms to be used for the different forms of closed areas (as in CCAMLR Article IX) identified here. It also noted that the Commission will need to correspond with the ATCM over how to harmonise the implementation of CCAMLR closed areas as discussed here.

68. In addition to Specially Protected Areas, some areas may be identified as candidates for special protection but need more information before a conclusion on protection can be reached. In this case, the workshop agreed that interim protection would be needed to implement CCAMLR’s precautionary approach. During this period, fisheries exploration and scientific activity would be limited to that needed to obtain data required to finalise consideration of its need for protection. Such interim protection would not be indefinite but should be sufficient to ensure protection of future options while the process is completed. Here, these areas are termed ‘Conservation Zones’. Such interim protection could be short or long term, according to the agreed period required to decide on protection.

69. Closed areas, specifically for achieving outcomes for fisheries, would be considered separately to this process by the respective working groups of the Scientific Committee. These areas are termed ‘Fisheries Closed Areas’.

70. The general objectives for which protected areas may be established and the types of protection that could be given in accordance with CCAMLR Article IX are illustrated in Table 1. These types of areas could be applied anywhere within the Convention Area.

PROPOSALS THAT ARE CURRENTLY UNDER DEVELOPMENT OR IN A CONCEPTUAL PHASE THAT RELATE TO MPAS IN THE CONVENTION AREA

71. Several papers were submitted to the workshop addressing MPAs in the Convention Area currently under development or in a conceptual phase.

Area around Prince Edward Islands

72. Dr Nel introduced WG-MPA-05/15, submitted by South Africa, which provided an update on the status of outlining the development process and status of an MPA around the Prince Edward Islands.

73. The development of the Prince Edwards Islands MPA benefited from the example of the HIMI Marine Reserve, and Dr Nel commended Australia for its excellent work.

74. The Prince Edward Islands area suffered huge impacts from IUU fishing in late 1990s due to the lack of offshore enforcement capacity. This led to a movement to extend the special nature reserve from the low-water mark to include a no-fishing marine area, which currently extends out to 12 n miles. An MPA including and extending beyond 12 n miles will be established to combat IUU fishing and allow ecosystem recovery; increased compliance and patrols will help enforce the MPA.

75. South Africa is implementing a three-phase conservation plan. The initial phase was the creation of a geographic information system with relevant data layers. This was followed by a stakeholder consultation workshop in June 2005, where important biological and physical processes and habitats were identified. Currently South Africa is conducting analyses of the data and is creating a final conservation plan. South Africa noted it is taking a phased approach for the MPA declaration, additional information regarding the MPA will be announced during the next year.

76. Objectives for this MPA include reduction of IUU fishing, allowing Patagonian toothfish to recover from overexploitation, reducing threats to albatrosses and petrels, reducing and avoiding impacts to the benthic habitat from destructive fishing practices, and setting aside reference habitat to inform future management. These objectives support CCAMLR principles by conserving representative habitats, ecosystem integrity, reducing impacts of IUU fishing, providing a fisheries replenishment zone, and providing a source of scientific benchmarks.

77. Participants agreed that this proposal clearly stated the objectives for the MPA and these objectives were consistent with CCAMLR principles.

78. Consistent with the modern concept of zoning in MPAs, complete protection from all extractive impacts will be identified for some areas in the Prince Edwards Islands, while others will be zoned with various levels of protection.

79. Participants agreed that to be successful in establishing MPAs, support from organisations in adjacent areas is essential. Support from CCAMLR in the case of EEZ-based MPAs would be useful. MPAs will also need the support of other agencies internationally, e.g. those that impact seabirds and foraging grounds outside the CAMLR Convention Area.

80. The ecosystem processes being conserved in the Prince Edward Islands MPA extend outside the South African EEZ to the high seas and the EEZs of other CCAMLR Members. South Africa noted it would welcome complementary efforts to extend the protected area.

81. The workshop commended the South African approach in designing the Prince Edward Islands MPA.

82. South Africa will conduct further biodiversity surveys in the area during 2006/07.

Area around Anvers Island, Antarctic Peninsula

83. Ms Toschik introduced WS-MPA-05/10, submitted by the USA, which summarised a conceptual phase proposal for an ASMA in the Anvers Island area, which may include a large

marine component. This paper led to discussion on the specific area around Anvers Island, the generic process of MPA development, and creation of a checklist to aid in interpretation of ATCM Decision 9 (2005).

84. The workshop noted that it would be useful for CCAMLR Members with data relevant to the Anvers Island marine area to share these data with the originators of the proposal in order for them to decide whether to submit the MPA proposal to CCAMLR or not.

85. However, it was noted that, in respect of krill, a very small portion of the krill population range in the South Atlantic would likely be included within an Anvers Island ASMA. Even when considered at the SSMU level, only a small portion of the area utilised by krill would be encompassed. Consequently, establishment of an ASMA in the Anvers Island area would be unlikely to impact krill fishing at all and therefore would not be of interest to CCAMLR.

86. Ms Toschik noted the desire of the USA to prevent duplication of effort and streamline the plan for both ATCM and CCAMLR requirements, if submission to both organisations is necessary.

87. Several participants wondered if an Anvers Island ASMA would be of interest to CCAMLR based on ATCM Decision 9 (2005). However, the size of the ASMA has not yet been defined.

88. The workshop noted that an Anvers Island ASMA may be of relevance to CCAMLR in terms of future CEMP sites, based on the long-term research in the area. However, the establishment of an ASMA now would not preclude the establishment of an overlapping CEMP site in the future. It was noted that data from this region have been submitted to the CEMP database in the past, although it was never designated a CEMP site.

89. Participants generally agreed that an ASMA around Anvers Island would be more appropriate than solely a CEMP site designation, because it will include terrestrial and marine components, and it is necessary to balance science, tourism, and fishing interests in the area.

Interpretation of ATCM Decision 9 (2005)

90. The workshop agreed on the need to further elaborate on ATCM Decision 9 (2005) with clear guidelines for determining if a protected area will be of interest to CCAMLR. This would help prevent the referral to CCAMLR of proposals for areas which would not have a discernable impact on CCAMLR interests.

91. Unlike proposals in the past, the proposal for Anvers Island has an area overlapping with the range of krill, in order to encompass penguin foraging areas. As a result there may have been a perceived impact on the fishing range of the krill fishery. The workshop agreed that if the range of krill within a CCAMLR statistical unit taken up in protected areas was only small, then it was unlikely to impact on the rational use of krill in that statistical area. It therefore agreed that it would be useful if general guidelines could be developed to indicate what percentage of the range of krill could be covered by protected areas within a statistical unit before CCAMLR would need to determine if a proposed protected area might impact on rational use. This same approach could also be used for other target species.

92. The workshop agreed that experiences with recent and current proposals could be used to develop a whole set of guidelines. CCAMLR Members could be asked to indicate whether or not those proposals should have been submitted to CCAMLR, and this information could then be used to help develop the guidelines. This would allow CCAMLR to continue the review of proposals for protected areas, but would generate clearer guidance for the review of future proposals, and consequently reduce the workload of CCAMLR.

Balleny Islands area

93. Dr B. Sharp (New Zealand) introduced WS-MPA-05/11, submitted by New Zealand, which presented scientific justification for an MPA around the Balleny Islands. Dr Sharp clarified that this paper was not a proposal, but rather a scientific justification for an MPA around the Balleny Islands.

94. The paper provided scientific justification for an MPA to protect ecosystem structure and function as well as representative habitats. It noted the presence of regionally important top predator populations foraging in the vicinity of the islands, and the existence of tightly coupled trophic relationships in the larger regional ecosystem. The paper further noted that the area has high krill production, and provides regionally important habitat for both juvenile krill and juvenile toothfish. The establishment of an MPA in the area was therefore seen as a means of protecting key predator foraging resources (especially during breeding season), and safeguarding the integrity of ecosystem processes in an area that contributes to the function and value of the regional fisheries and wider ecosystem.

95. Dr K. Shust (Russia) noted that the Balleny Islands do not have broad continental shelves, and they have a steep slope that is not good for bottom trawling or longlining. A longline prohibition is already in place for 10 n miles around the islands, and the area does not currently have a strong fishery. He noted that this ecosystem is not directly linked with the Ross Sea. He also noted that the islands and surrounding waters are covered with ice, making the area difficult to access not only for tourists, but also for scientists. For these reasons, he did not foresee negative impacts on this ecosystem.

96. Dr Shust also asked for further justification for the suggested 50 n mile boundary.

97. Dr Sharp clarified that the 50 n mile boundary was a general approximation, based on foraging ranges of high trophic level marine predators, not a definitive decision. This distance may shift as the scientific information available is further considered.

98. Dr M. Naganobu (Japan) was strongly concerned about the concept introduced in the New Zealand paper. He requested that the workshop consider the following three points:

- (i) There is not much survey data around Balleny Islands compared to the South Shetland Islands and South Georgia. Japan has interests and has conducted research in the area around the Balleny Islands and the Ross Sea. He suggested that New Zealand should continue to survey around the Balleny Islands, similar to research programs such as US AMLR long-term surveys, and UK long-term surveys in the South Shetland Islands and South Georgia, where very detailed data have been collected.

- (ii) The value of fishing grounds and other human-use values around the Balleny Islands should be considered in the context of developing an MPA in the area. Reports regarding krill density and fish stocks could be referenced. The area around the Balleny Islands has potential value as a fishing resource for humans. This resource should be considered under the concept of rational use in CCAMLR Article II.
- (iii) An MPA around the Balleny Islands would differ from past ASPA projects in that it is not closely associated with centres of intense scientific research.

99. It was noted that the Balleny Islands MPA concept is the first time CCAMLR has considered a substantial initiative for a relatively large area within the Convention Area but outside an EEZ.

100. The workshop also recognised that there may be merit in considering interim protection for the values New Zealand seeks to protect, and to provide time for further assessment, as demonstrated with zoning in the HIMI Marine Reserve.

101. Participants agreed that what constitutes sufficient data needs to be specified, and measures that can be taken in the interim while data collection is ongoing should be identified. It was also noted that those calling for additional data collection and research should clearly identify the objectives and criteria for such work.

102. Prof. C. Moreno (Chile) noted that when an ecosystem/community is perturbed, it is never restored to exactly the same condition as it was in the past. To conserve this area is a mechanism to retain the actual essence of ecosystem processes. An MPA in the Balleny Islands area could help the fishery in the area to be sustainable in the long term, and to maintain elements of the ecosystem that are under threat from increasing human activities. It was noted that the scientific justification provided by New Zealand contained most of the elements that science offers for people to take a position on this problem.

103. Some participants noted that protection of the Balleny Islands would protect the recruitment zone for toothfish and krill, which has not happened in any other Antarctic fishery.

104. Many participants congratulated New Zealand on its excellent paper. Dr Gilbert noted his appreciation for the feedback provided and, following a suggestion, agreed to form an informal contact group to meet at the upcoming CCAMLR meetings with interested parties to discuss the options for further developing an MPA in the vicinity of the Balleny Islands.

105. Dr Naganobu expressed concern about the proposed informal consultations because a definite proposal by New Zealand has not yet been made.

106. However, the workshop noted that it is important to engage interested parties and generate as much feedback as possible at this early stage of MPA consideration, and it was noted that no additional formal meetings were planned, although an informal contact group will be formed.

SCIENTIFIC INFORMATION REQUIRED FOR THE DEVELOPMENT OF MPAS AND IDENTIFICATION OF BIOPHYSICAL REGIONS ACROSS THE CONVENTION AREA

107. The workshop considered the scientific work needed for considering a system of protected areas to assist CCAMLR in achieving its broader conservation objectives. The key tasks in this process (not necessarily to be undertaken sequentially) would be:

- a broad-scale bioregionalisation⁴ of the Southern Ocean;
- a fine-scale subdivision of biogeographic provinces, which may include hierarchies of spatial characteristics and features within regions⁵, giving particular attention to areas identified in the bioregionalisation;
- identification of areas that might be used to achieve the conservation objectives identified in paragraph 62;
- determination of areas requiring interim protection.

108. The workshop agreed that these tasks should be attempted with a ‘desktop study’⁶ in the first instance. It was noted that a number of organisations and individuals are already proceeding with analyses that might facilitate the large-scale bioregionalisation as well as small-scale delineation of provinces, such as for Heard Island and McDonald Islands, Prince Edward Islands and the Ross Sea. It also agreed that the designation of protected areas need not wait for an entire system to be specified.

109. Table 2 lists the types of data that might be used in a process to determine key bioregions and provinces in a bioregionalisation of the Southern Ocean. The table is drawn from Table 1 of WS-MPA-05/15 on the work being undertaken for determining a large MPA around South Africa’s sub-Antarctic Prince Edward Islands. It also draws on the material and approach used in developing the conservation report on the Heard Island region indicated in WS-MPA-05/7. As described in WS-MPA-05/15, these data can be used to delineate

⁴ Bioregionalisation is a process to classify marine areas from a range of data on environmental attributes. The process results in a set of bioregions, each reflecting a unifying set of major environmental influences which shape the occurrence of biota and their interaction with the physical environment. Reference: adapted from ‘Interim biogeographic regionalisation for Australia (IBRA)’ 1997 (www.deh.gov.au/parks/nrs/ibra).

A recent marine bioregionalisation process is described in ‘Australia’s South-east Marine Region: A User’s Guide to Identifying Candidate Areas for a Regional Representative System of Marine Protected Areas’ by Commonwealth of Australia 2003

(www.deh.gov.au/coasts/mpa/southeast/publications/identifying/index.html).

An example of bioregionalisation outcomes can be seen in Butler, A., P. Harris, V. Lyne, A. Heap, V. Passlow and R. Smith. 2001. An interim, draft bioregionalisation for the continental slope and deeper waters of the South-east Marine Region of Australia. Report to the National Oceans Office, CSIRO Marine Research and Geoscience Australia

(www.oceans.gov.au/pdf/SE%20Bioregionalisation%20Final%20Report.pdf).

⁵ See Butler et al. (2001) for a description of the hierarchy of classifications within biogeographic provinces.

⁶ A ‘desktop study’ is the collation and synthesis of existing data and information, including expert knowledge, or undertake analyses and draw conclusions on a topic of interest. It does not include the acquisition of new field data or the undertaking of extensive statistical and modelling development.

important patterns, areas in which important processes occur and areas where pressures may be arising now and/or in the future. The workshop noted that some data may contribute to understanding one or more of the patterns, processes and/or pressures.

110. Dr Gilbert showed how these types of data can be used to create a bioregionalisation by describing the Environmental Domains Analysis of the Antarctic Continent presented to CEP by New Zealand in 2005. The workshop agreed that such an approach would be useful for combining the data into a single analysis but recognised that expert input would be essential.

111. Dr Sharp cautioned that care needs to be taken in the use of particular terrestrial classification algorithms if applied to a bioregionalisation of dynamic marine environments.⁷

112. The workshop agreed that a variety of statistical techniques could be used to integrate the data and that experts in this area would need to correspond to determine an appropriate method for underpinning a bioregionalisation of the Southern Ocean.

113. A difficulty identified by the workshop is that the biological data will not have a universal coverage like data on geomorphology, ocean, climate and ice. It was considered unlikely to restrict the larger-scale bioregionalisation. However, it will be likely that some regions will be able to be subdivided into provinces before others because of differences in availability of small-scale data. Nevertheless, an important task will be to determine areas that may need to be given interim protection so that existing activities do not compromise the long-term conservation of biodiversity while the process elaborated below is undertaken.

114. The workshop agreed that the process identified above will require a Steering Committee, including members of the Scientific Committee and CEP. It would be useful if the work in paragraph 107 could be progressed for a workshop. The aim of the workshop would be to advise on a bioregionalisation of the Southern Ocean, including, where possible, advice on smaller-scale delineation of provinces and potential areas for protection to further the conservation objective of CCAMLR. To that end, the workshop requested the Scientific Committee consider whether this work should be progressed within the work program of WG-EMM or whether it should be an independent process.

115. An important role of the Steering Committee will be to involve appropriate experts from outside the Scientific Committee and CEP that could have data or expertise useful for the bioregionalisation.

116. In developing this work program and recognising the relative expertise of the Scientific Committee and CEP, the workshop suggested that CEP be invited to undertake the initial work necessary to develop a bioregionalisation of the coastal provinces, as an extension of its terrestrial bioregionalisation work, while the Scientific Committee undertakes the initial work needed to delineate the oceanic provinces. Such work would involve examination of both the benthic and pelagic systems in the respective areas.

⁷ A similar algorithm to that used for the Antarctic Environmental Domains Analysis was applied in the New Zealand EEZ. The resulting classification does not always capture the important biological contrasts due to the difficulties involved in the integration of different types of data (e.g. biological versus physical, pattern versus process, large-scale versus small-scale) in an automated process.

117. As a result of these discussions, the workshop identified the following steps in the process leading to a workshop in 2008, noting that some of this work could occur in parallel rather than sequentially:

- (i) collate existing data on coastal provinces, including benthic and pelagic features;
- (ii) collate existing data on oceanic provinces, including benthic and pelagic features;
- (iii) determine the statistical analyses required to facilitate a bioregionalisation, including the use of empirical, model and expert data;
- (iv) develop a broad-scale bioregionalisation based on existing datasets and other datasets possibly available prior to the workshop;
- (v) delineate fine-scale provinces within regions, where possible;
- (vi) establish a procedure for identifying areas for protection to further the conservation objectives of CCAMLR.

118. The workshop recommended that the Steering Committee be given the following terms of reference:

1. To facilitate collaboration between the CCAMLR Scientific Committee and CEP in this work.
2. To facilitate the involvement of appropriate experts in this work.
3. To coordinate and facilitate:
 - (i) collating existing data on coastal provinces, including benthic and pelagic features and processes;
 - (ii) collating existing data on oceanic provinces, including benthic and pelagic features and processes;
 - (iii) determining the analyses required to facilitate a bioregionalisation, including the use of empirical, model and expert data;
 - (iv) developing a broad-scale bioregionalisation based on existing datasets and other datasets possibly available prior to the workshop;
 - (v) delineating fine-scale provinces within regions, where possible;
 - (vi) establishing a procedure for identifying areas for protection to further the conservation objectives of CCAMLR.
4. To organise a workshop to establish a bioregionalisation for the CCAMLR Convention Area and to consolidate advice on a system of protected areas.

119. In discussing these scientific requirements, the workshop noted the potential synergies in the future between this work and work undertaken in WG-FSA and WG-EMM on the spatial components of fisheries and ecosystem function (e.g. areas of high productivity, foraging areas, movement and dispersal patterns).

ADVICE TO THE SCIENTIFIC COMMITTEE

120. In accordance with instructions from the Commission (CCAMLR-XXIII, paragraph 4.13) and the Scientific Committee (SC-CAMLR-XXIII, paragraphs 3.51 to 3.53), the CCAMLR Workshop on Marine Protected Areas met at NOAA National Marine Fisheries Service in Silver Spring, MD, USA, from 29 August to 1 September 2005. Terms of reference are provided in paragraph 6.

121. The workshop agreed that advice on the application of MPAs as related to Articles II and IX of the Convention would be provided to Members at the 2005 meeting of the Scientific Committee.

Term of reference (i) to review current principles and practices related to the establishment of MPAs

122. The workshop agreed that the NRSMPA, which included three elements referred to as the comprehensive, adequate and representative (CAR) system, provided one candidate approach to the designation of MPAs that may have applications in terms of principles and criteria, to CCAMLR's consideration of MPAs in the Southern Ocean (paragraphs 12 to 14).

123. The workshop noted that South Africa's Prince Edward Islands MPA process also provided a useful case study on the establishment of MPAs within the CCAMLR Convention Area (paragraph 15).

124. Within the CCAMLR context, the workshop recognised the need to develop a strategic approach to MPA design and implementation throughout the Southern Ocean notably in relation to a system of protected areas described below (paragraphs 16 and 66 to 70). It also recognised that there was a strong need for collaboration at technical and policy levels to further develop the MPA concept in the Southern Ocean. Relevant bodies in such a dialogue would include key elements of the Treaty System (CEP and the ATCM) as well as SCAR, SCOR, Observers to CCAMLR, intergovernmental and non-governmental organisations (paragraph 17).

125. The workshop suggested that establishing a harmonised regime for the protection of the Antarctic marine environment across the ATS should be the primary aim but recognised that there would need to be a division between ATCM and CCAMLR on the management of different human activities in the region (paragraph 22).

Workshop Term of Reference (ii) to discuss how the use of MPAs could be used to contribute to furthering the objectives of CCAMLR

126. Given the noted benefits of MPAs and the existing commitments of many, if not most, Members of CCAMLR to the establishment of representative networks of MPAs (e.g. in respect of the WSSD, the CBD, World Parks Congress etc.), the workshop concluded that MPAs had considerable potential for furthering CCAMLR's objective in applications ranging from protection of ecosystem processes, habitats and biodiversity, to protection of species (including population and life history stages) (paragraphs 32 to 36).

127. The workshop agreed that, overall, when viewed in relation to the IUCN categories of protected areas, the Convention Area as a whole would qualify as Category IV (Habitat/Species Management Area: protected area managed mainly for conservation through management intervention). This is defined as an area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species (paragraph 47).

128. The workshop commended the specific procedures and frameworks for planning biodiversity conservation outlined in the Guidelines for Establishing the Australian National Representative System of MPAs (NRSMPA), which had underpinned the establishment of the HIMI Marine Reserve. It recognised that the principles involved, notably those relating to CAR, together with the use of precautionary approaches and wide consultation with appropriate interest groups, combined with flexible decision-making and review procedures, and the capacity to designate areas for interim protection, were fundamental to the development of protected area networks in regional seas. They would be equally essential to similar undertakings in high-seas areas (paragraphs 48 to 60).

129. The workshop agreed that conservation outcomes appropriate for achieving the objectives in CCAMLR Article II would include the maintenance of biological diversity as well as the maintenance of ecosystem processes (see paragraphs 61 to 64 for detail).

130. It was agreed (paragraph 62) that attention may need to be given to the need for, *inter alia*, protection of:

- representative areas;
- scientific areas to assist with distinguishing between the effects of harvesting and other activities from natural ecosystem changes as well as providing opportunities for understanding the Antarctic marine ecosystem without interference;
- areas potentially vulnerable to impacts by human activities, to mitigate those impacts and/or ensure the sustainability of the rational use of marine living resources.

131. It was noted that some areas in the Southern Ocean may have predictable features that are critical to the function of local ecosystems. The workshop agreed that such areas would be appropriate to be included in a system of protected areas. Some participants felt that this should be considered as an objective in its own right, as follows (paragraph 63):

The protection or maintenance of important ecosystem processes, in locations where those processes are amenable to spatial protection.

132. The workshop also considered the need for the Commission to achieve satisfactory fishery outcomes in terms of sustainable rational use. The process for establishing a system of protected areas will need to have regard for this objective of the Commission (paragraph 64).

133. The workshop recommended that the Scientific Committee work toward developing a system of protected areas described in paragraphs 61 to 70. The general objectives for which protected areas may be established and the types of protection that could be given in accordance with Article IX are illustrated in Table 1. These types of areas could be applied anywhere within the Convention Area.

134. The workshop advised that some areas may be identified as candidates for special protection but that it needs more information before a conclusion on protection can be reached. In this case, it agreed that interim protection would be needed (paragraph 68).

135. The workshop recognised that the term ‘Specially Protected Areas’ and other similar terms as provided in Table 1 and discussed in paragraphs 66 to 70 have meanings in other forums that are not the same meanings as those used in this report. The workshop recommended that the Scientific Committee or Commission consider the terms to be used for the different forms of closed areas identified and consult with the ATCM over how to harmonise the implementation of CCAMLR closed areas.

Term of reference (iii) to consider proposals that are currently under development or in a conceptual phase that relate to MPAs in the Convention Area

136. The workshop recommended that CCAMLR consider clarifying implementation of ATCM Decision 9 (2005), with clear guidelines for determining if a marine protected area will be of interest to CCAMLR. Identifying guidelines in terms of a percent of area occupied by a known harvestable resource and encompassed in a protected area that would be of interest to CCAMLR would be useful. These guidelines could be incorporated into a whole set of guidelines described below (paragraphs 90 and 91).

137. The workshop agreed that experiences with recent and current proposals could be used to develop a whole set of guidelines. CCAMLR Members could be asked to indicate whether or not those proposals should have been submitted to CCAMLR, and this information could then be used to help develop the guidelines. This would allow CCAMLR to continue the review of proposals for protected areas, but would generate clearer guidance for the review of future proposals, and consequently reduce the workload of CCAMLR (paragraph 92).

Term of Reference (iv) to discuss the types of scientific information that may be required for the development of MPAs to further the objectives of CCAMLR, including the identification of biophysical regions across the Convention Area

138. The workshop identified key tasks needed in considering a system of protected areas to assist CCAMLR in achieving its broader conservation objectives. These are (not necessarily to be undertaken sequentially) (paragraph 107):

- a broad-scale bioregionalisation of the Southern Ocean;
- a fine-scale subdivision of biogeographic provinces, which may include hierarchies of spatial characteristics and features within regions, giving particular attention to areas identified in the bioregionalisation;
- identification of areas that might be used to achieve the conservation objectives identified in paragraphs 61 to 70 (see paragraph 133);
- determination of areas requiring interim protection.

139. The workshop agreed that these tasks should be attempted with a desktop study in the first instance. Finally, Table 2 lists the types of data that might be used in a process to determine key bioregions and provinces in a bioregionalisation of the Southern Ocean (paragraphs 107 to 109).

140. The workshop noted that an important task will be to determine areas that may need to be given interim protection so that existing activities do not compromise the long-term conservation of biodiversity while the process elaborated below is undertaken (paragraph 113).

141. The workshop agreed that the process identified above will require a Steering Committee, including members of the Scientific Committee and CEP. It would be useful if the work in paragraph 107 could be progressed for a workshop. The aim of the workshop would be to advise on a bioregionalisation of the Southern Ocean, including, where possible, advice on smaller-scale delineation of provinces and potential areas for protection to further the conservation objective of CCAMLR. To that end, the workshop requested the Scientific Committee consider whether this work should be progressed within the work program of WG-EMM or whether it should be an independent process (paragraph 114).

142. An important role of the Steering Committee will be to involve appropriate experts from outside the Scientific Committee and CEP that could have data or expertise useful for the bioregionalisation (paragraph 115).

143. In developing this work program and recognising the relative expertise of the Scientific Committee and CEP, the workshop suggested that CEP be invited to undertake the initial work necessary to develop a bioregionalisation of the coastal provinces, as an extension of its terrestrial bioregionalisation work, while the Scientific Committee undertake the initial work needed to delineate the oceanic provinces. Such work would involve examination of both the benthic and pelagic systems in the respective areas (paragraph 116).

144. The workshop recommended (paragraph 118) that the Steering Committee be given the following terms of reference:

1. To facilitate collaboration between the CCAMLR Scientific Committee and CEP in this work.
2. To facilitate the involvement of appropriate experts in this work.

3. To coordinate and facilitate:
 - (i) collating existing data on coastal provinces, including benthic and pelagic features and processes;
 - (ii) collating existing data on oceanic provinces, including benthic and pelagic features and processes;
 - (iii) determining the analyses required to facilitate a bioregionalisation, including the use of empirical, model and expert data;
 - (iv) developing a broad-scale bioregionalisation based on existing datasets and other datasets possibly available prior to the workshop;
 - (v) delineating fine-scale provinces within regions, where possible;
 - (vi) establishing a procedure for identifying areas for protection to further the conservation objectives of CCAMLR.
4. To organise a workshop to establish a bioregionalisation for the CCAMLR Convention Area and to consolidate advice on a system of protected areas.

CLOSE OF THE WORKSHOP

145. The report of the workshop was adopted.

146. Dr Penhale congratulated all participants on the successful conclusion of the workshop and thanked them for their contribution. She especially thanked the rapporteurs for producing the workshop report.

147. The participants joined Prof. Croxall in thanking the US National Science Foundation, the NOAA National Marine Fisheries Service and Dr Penhale and her team, particularly Ms R. Tuttle, Mr R. Williams and Ms Toschik, for organisation and hosting the meeting, and providing outstanding support.

148. The meeting was closed.

Table 1: Illustration of the types of closed areas that could be used by CCAMLR for protection or conservation, noting the need to define areas in geographic coordinates and depth.

Objective	Type of area
Representativeness	Specially Protected Areas Conservation Zones*
Protection of areas vulnerable to human activities	Specially Protected Areas Conservation Zones* Fisheries Closed Areas
Science	Specially Protected Areas Conservation Zones* Fisheries Closed Areas
Protection of ecosystem function	Specially Protected Areas Conservation Zones* Fisheries Closed Areas

* In the application of the CCAMLR precautionary approach, interim measures may be required for candidate areas while being considered; in this case Conservation Zones could be established.

Table 2: List of types of data that might be used in a process to determine key bioregions and provinces in a bioregionalisation of the Southern Ocean. These data can be used to delineate important patterns, areas in which important processes occur and areas where pressures may be arising now and/or in the future.

Category	Specific types of data
Geology and geomorphology	Bathymetry Geological zones – coastal formations, islands, seamounts, plateaus, banks, ridges, canyons Substratum
Ocean	Sea-surface heights Temperature and salinity Biogeochemistry Fronts and gyres Currents (surface, midwater, deep) Upwelling areas
Climate	Wind shear and direction Pressure systems Temperature
Ice	Ice shelves Sea-ice coverage and progression
Biota (distribution, abundance, movement)	Sessile and sedentary benthos including habitat forming features Surface chlorophyll Secondary producers Demersal species (e.g. nototheniids) Small mesopelagic species (krill, myctophids) Large mesopelagic species – finfish (e.g. icefish), squid Marine mammals Birds
Outcomes of dynamic models	Outputs from existing ocean models
Existing and/or potential pressures	Existing fishing patterns Target and by-catch statistics Pollution Climate change Ocean noise Shipping activity Introduced species Tourism and/or national operations potentially impacting on marine species or ecosystems

AGENDA

CCAMLR Workshop on Marine Protected Areas
(Silver Spring, MD, USA, 29 August to 1 September 2005)

Introduction

Opening of the workshop

Welcome to participants

Overview of facilities, computer support, rapporteurs etc.

Adoption of the agenda and organisation of the workshop

Workshop objectives

Terms of reference for the workshop

- (i) to review current principles and practices related to the establishment of MPAs

general principles and guidelines

current instruments/agreements

economics

examples in the Convention Area

research papers/summary papers/abstracts

- (ii) to discuss how the use of MPAs could be used to contribute to furthering the objectives of CCAMLR

Articles II and IX of the Convention

principles involved in the identification of potential MPAs in the Convention Area

examples in the Convention Area

- (iii) to consider proposals that are currently under development or in a conceptual phase that relate to MPAs in the Convention Area

area around Prince Edward Islands

southwest Anvers Island and vicinity

the Balleny Islands and vicinity

- (iv) to discuss the types of scientific information that may be required for the development of MPAs to further the objectives of CCAMLR, including the identification of biophysical regions across the Convention Area

follow-up from discussions in term of reference (iii)

identification of representative marine habitats

Recommendations for future work

Conclusion of the workshop.

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(Silver Spring, MD, USA, 29 August to 1 September 2005)

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LIST OF DOCUMENTS

CCAMLR Workshop on Marine Protected Areas
(Silver Spring, MD, USA, 29 August to 1 September 2005)

WS-MPA-05/1	MPA Workshop Terms of Reference
WS-MPA-05/2	List of participants
WS-MPA-05/3	List of documents
WS-MPA-05/4	Marine protected areas in the context of CCAMLR: a management tool for the Southern Ocean IUCN information paper Submitted by IUCN
WS-MPA-05/5	A compilation of abstracts relating to marine protected areas and fisheries management IUCN information paper Submitted by IUCN
WS-MPA-05/6	Guidelines for establishing the [Australian] National Representative System of Marine Protected Areas Submitted by Australia
WS-MPA-05/7	The Heard and McDonald Islands Marine Reserve Delegation of Australia
WS-MPA-05/8	RSPB – The economics of marine protected areas
WS-MPA-05/9	Improving the process for the establishment of marine protected areas by CCAMLR and Antarctic Treaty Parties Delegation of Australia
WS-MPA-05/10	Progress on an Antarctic Specially Managed Area: Southwest Anvers Island and vicinity Delegation of the USA
WS-MPA-05/11	Scientific justification for a marine protected area designation around the Balleny Islands to protect ecosystem structure and function in the Ross Sea region, Antarctica: progress report Delegation of New Zealand
WS-MPA-05/12	Legal considerations surrounding the establishment of marine protected areas in Antarctica Delegation of New Zealand

- WS-MPA-05/13 SCAR Biology Symposium (Curitiba, Brazil, 25 to 29 July 2005)
Workshop on Marine Protected Areas (27 July)
S. Grant (United Kingdom)
- WS-MPA-05/14 Issues to consider before jumping on the marine protected area
(MPA) bandwagon
R.J. Brock and J.A. Uravitch (USA)
- WS-MPA-05/15 Progress towards the declaration of a large marine protected area
around South Africa's sub-Antarctic Prince Edward Islands
D. Nel, A. Lombard, T. Akkers, J. Cooper and B. Reyers (South
Africa)
- Other CCAMLR documents
- CCAMLR-XXIII/BG/22 Towards the creation of a marine protected area around South
Africa's sub-Antarctic Prince Edward Islands
Delegation of South Africa
- SC-CAMLR-XXIII/BG/28 Summary tables of current and proposed Antarctic marine
(Revised August 2005) protected areas
Delegation of the United Kingdom
- SC-CAMLR-XXIII/BG/29 The biology, ecology and vulnerability of seamount communities
Delegation of the United Kingdom
- SC-CAMLR-XXIII/BG/30 The applicability of international conservation instruments to the
(Revised: in press) establishment of marine protected areas in Antarctica
Delegation of the United Kingdom
- Other papers
- COFI/2005/8 Marine protected areas (MPAs) and fisheries
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C.M. Roberts. 2004. The worldwide cost of marine protected
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