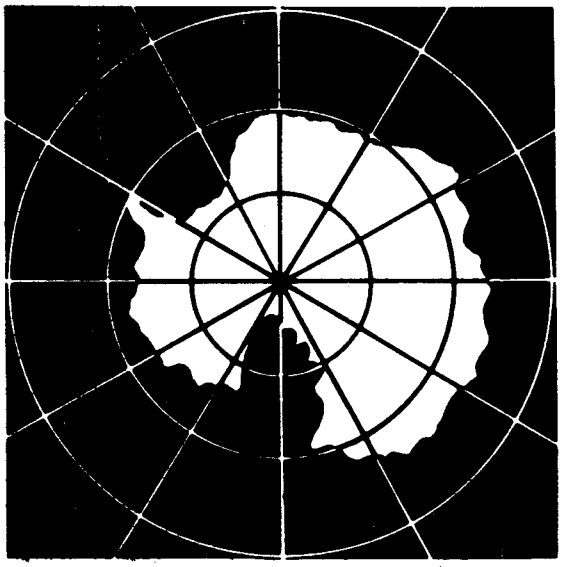

ANTARCTIC TREATY

Final Report of the Fifteenth Antarctic Treaty Consultative Meeting

Paris

9 – 20 October 1989

REPUBLIC OF FRANCE

FINAL REPORT OF THE FIFTEENTH

ANTARCTIC TREATY CONSULTATIVE MEETING

Paris, 9-20 OCTOBER 1989

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PART I

FINAL REPORT OF THE FIFTEENTH ANTARCTIC TREATY CONSULTATIVE MEETING

1. Pursuant to Article IX of the Antarctic Treaty, representatives of the Consultative Parties (Argentina, Australia, Belgium, Brazil, Chile, China, the Federal Republic of Germany, Finland, France, the German Democratic Republic, India, Italy, Japan, New Zealand, Norway, Peru, Poland, the Republic of Korea, South Africa, Spain, Sweden, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Uruguay) met in Paris from 9 to 20 October 1989, for the purpose of exchanging information, holding consultations, and considering and recommending to their Governments measures in furtherance of the principles and objectives of the Treaty.

2. The Meeting was also attended by delegations from Contracting Parties to the Antarctic Treaty which are not Consultative Parties (Austria, Bulgaria, Canada, Colombia, Cuba, Czechoslovakia, Denmark, Ecuador, Greece, Hungary, the Netherlands, the People's Democratic Republic of Korea and Romania).

3. The Chairman of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the President of the Scientific Committee on Antarctic Research (SCAR) were invited to attend the Meeting as observers in accordance with Rule 2 of the revised Rules of Procedure of 1987 (see paragraphs 14 and 15 below).

4. At the Preparatory Meeting held in Paris in May 1989, the Consultative Parties, pursuant to Rule 35 of the revised Rules of Procedure of 1987, had invited several international organizations to appoint experts to assist in discussion of specific agenda items. The following organizations took part in the proceedings:

- the Intergovernmental Oceanographic Commission, (IOC),
- the International Civil Aviation Organization (ICAO),
- the International Maritime Organization (IMO),
- the World Meteorological Organization (WMO),
- the International Union for the Conservation of Nature and Natural Resources, (IUCN),
- the International Hydrographic Organization, (IHO),
- the Scientific Committee on Antarctic Research, (SCAR),
- the Commission for the Conservation of Antarctic Marine Living Resources, (CCAMLR).

The Intergovernmental Panel on Climate Change (IPCC) was invited to attend but was unable to take part.

5. Mr Michel Rocard, Prime Minister of France, accompanied by Mr Brice Lalonde, Secretary of State for the Environment, officially opened the meeting and delivered the opening address which is reproduced at Annex A.

6. Mr Michel Combal, Head of the French Delegation, was elected Chairman of the Meeting. After thanking the delegations for having elected him Chairman, Mr. Combal welcomed the States acknowledged as Consultative Parties at the Eighth Special Antarctic Treaty Consultative Meeting (Spain and Sweden), and at the Ninth Special Consultative Meeting (Finland, Peru, and the Republic of Korea). He also welcomed Canada and Colombia, which had acceded to the Antarctic Treaty, since the last Meeting.

7. The Chairman proposed that Mrs. Brigitte Girardin, of the French Ministry of Foreign Affairs, be appointed Executive Secretary of the Meeting. This proposal was adopted.

8. In order to save time, the Chairman proposed that delegations not deliver opening statements but, instead, provide their texts for circulation and inclusion in the Final Report. This proposal was adopted and the texts are reproduced at Annex A.

9. The following agenda was adopted:

1. Opening of the Meeting.

2. Election of Officers.

3. Opening Addresses.

4. Adoption of the agenda.

5. Operation of the Antarctic Treaty System: Reports.

6. Operation of the Antarctic Treaty System:

   (a) "White Book"

   (b) Organizational aspects

   (c) Public availability of the documents of Consultative Meetings.

7. Comprehensive measures for the protection of the Antarctic environment and dependent and associated ecosystems.

8. The role of Antarctica in understanding and monitoring global change, including the ozone layer.

9. Human Impact on the Antarctic environment:

   (a) Waste disposal

   (b) Marine pollution

   (c) Implementation of environmental impact assessment procedures.

10. The Antarctic Protected Area System:

    (a) Proposals for new Sites of Special Scientific Interest

    (b) Status of Sites of Special Scientific Interest

    (c) Additional protective measures

        (i) Reports of visits to SPAs, SSSIs and HMs

        (ii) Publication of visit reports and data base mechanism

        (iii) Management plans for SPAs

        (iv) New categories of protected area

        (v) Historic monuments.

11. Promotion of international scientific cooperation.

12. Measures for the facilitation of international scientific cooperation:

    (a) Improving the comparability and accessibility of scientific data in Antarctica

    (b) Concentration of siting of stations.

13. Effects of tourism and non-governmental expeditions in the Antarctic Treaty Area.

14. Antarctic meteorology and telecommunications.

15. Marine hydrometeorological services to navigation in the Southern Ocean.

16. Cooperation in the hydrographic charting of Antarctic waters.

17. Air safety in Antarctica.

18. Uses of Antarctic ice.

19. Inspections under the Antarctic Treaty.

20. Date and place of the XVIth Consultative Meeting.

21. Any other business.

22. Adoption of the Report.

23. Closing of the Meeting.

10. In accordance with the Chairman's suggestion:

(a) discussion of items 5, 20, 21, 22 and 23, as well as initial general debate on item 7, took place in plenary session;

(b) the remaining items were remitted to two working groups:

(i) Working Group I, under the Chairmanship of Mr Christopher Beeby of New Zealand, discussed item 7 (apart from initial general debate) and items 8, 9, 10, 12(b), 13 and 18;

(ii) Working Group II, under the chairmanship of Mr Ricardo Galarza of Uruguay, discussed items 6, 11, 12(a), 14, 15, 16, 17 and 19.

11. Because of the pressure of business to be accomplished, the Meeting adopted 22 Recommendations at its close on 20 October on a provisional basis. The Government of France, acting in its capacity as host government for the Meeting, subsequently sought and received confirmation from the Representatives of all Consultative Parties represented at the Meeting of their readiness to adopt, in accordance with Rule 24 of the revised Rules of Procedure of 1987, the Recommendations set forth in Part II of this Report. The following is the list of Recommendations adopted:

XV-1 Comprehensive measures for the protection of the Antarctic environment and dependent and associated ecosystems

XV-2 Comprehensive measures for the protection of the Antarctic environment and dependent and associated ecosystems

XV-3 Human impact on the Antarctic environment: Waste disposal

XV-4 Human impact on the Antarctic environment: Prevention, control, and response to marine pollution

XV-5 Human impact on the Antarctic environment: Environmental monitoring in Antarctica

XV-6 Antarctic Protected Area System: New Sites of Special Scientific Interest

XV-7 Antarctic Protected Area System: Redesignation of Specially Protected Area, n°11 Cape Shirreff, as Site of Special Scientific Interest No.32

XV-8 Antarctic Protected Area System: Agreed Measures for the Conservation of Antarctic Fauna and Flora: Amendment to Article VIII (Management Plans for Specially Protected Areas)

XV-9 Antarctic Protected Area System: Development of improved descriptions and management plans for Specially Protected Areas

XV-10 Antarctic Protected Area System: Establishment of Specially Reserved Areas (SRAs)

XV-11 Antarctic Protected Area System: Establishment of Multiple-use Planning Areas (MPAs)

XV-12 Antarctic Protected Area System: New Historic Sites and Monuments

XV-13 Antarctic Protected Area System: Historic Sites and Monuments (amendment to description of HM 53)

XV-14 Promotion of international scientific cooperation: A declaration

XV-15 Promotion of international scientific cooperation

XV-16 Facilitation of scientific research: Comparability and accessibility of Antarctic scientific data

XV-17 Facilitation of scientific research: Siting of stations

XV-18 Cooperation in meteorological and sea ice information services for maritime and air navigation in Antarctica

XV-19 Cooperation in the hydrographic charting of Antarctic Waters

XV-20 Air safety in Antarctica

XV-21 Uses of Antarctic ice

XV-22 Antarctic Treaty thirtieth anniversary commemorative stamp issue

12. The Meeting also decided to approve a "Declaration on the ozone layer and climate change", the text of which is set forth in Part III of this Report.

THE OPERATION OF THE ANTARCTIC TREATY SYSTEM: REPORTS
(Agenda item 5)

13. Pursuant to Recommendation XIII-2, the Meeting received reports from the following:

(a) the Chairman of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR);

(b) the President of the Scientific Committee on Antarctic Research (SCAR);

(c) the Head of the Delegation of the United Kingdom in his capacity as representative of the Depositary Government of the Convention for the Conservation of Antarctic Seals (CCAS);

(d) the Head of the Delegation of the United States of America in his capacity as representative of the Depositary Government of the Antarctic Treaty;

(e) the Chairman of the Fourth Special Antarctic Treaty Consultative Meeting;

(f) the Permanent Representative of Australia to the United Nations in New York in his capacity as Convenor of the informal group of Treaty parties in New York;

(g) the Chairman of the Meeting of Experts on Air Safety in Antarctica.

14. The report of the Commission for the Conservation of Antarctic Marine Living Resources, was presented, on behalf of its Chairman, by the Head of the Delegation of Brazil (Annex B(i)).

15. The report of the Scientific Committee for Antarctic Research (SCAR) was presented by its President, Mr Claude Lorius (Annex B(ii)).

16. The Head of the Delegation of the United Kingdom, in his capacity as representative for the Depositary State of the Convention for the Conservation of Antarctic Seals (CCAS), presented a report (Annex B(iii)).

17. The Head of the Delegation of New Zealand, in his capacity as Chairman of the Fourth Special Antarctic Treaty Consultative Meeting, presented a report on the Convention on the Regulation of Antarctic Mineral Resource Activities (Annex B(iv)).

18. The Head of Delegation of the United States, in his capacity as a representative of the Depositary Government of the Antarctic Treaty, presented a report. The table covering the status of the Recommendations adopted in compliance with Article IX of the Treaty is at Annex B(v).

19. The Permanent Representative of Australia to the United Nations, Ambassador Peter Wilenski, in his capacity as Convenor of the informal group of Treaty parties in New York, presented an oral report on the Antarctic item at the UN General Assembly which was received with much interest. The Meeting reaffirmed the determination of the Antarctic Treaty Parties to maintain unity.

20. The report of the Chairman of the Meeting of Experts on Air Safety in Antarctica, held in Paris from 2-5 May 1989, was submitted to the Meeting.

21. These reports and discussion of them provided a comprehensive picture of current developments within the Antarctic Treaty system.

22. It was suggested that, in future, the reports presented under this item should be circulated in advance of the Consultative Meeting, so that they could be studied and given the full attention they warrant.

23. In accordance with paragraphs 1 and 2 (a) of Recommendation XII-6, the Meeting agreed to request France, in its capacity as host Government of the Meeting, to send a copy of the Report of the Meeting in all four Treaty languages to the Secretary-General of the United Nations as soon as possible after the conclusion of the Meeting. Also in accordance with Recommendation XII-6, paragraph 2 (b), the Meeting agreed that France, in its capacity as host Government of the Meeting, should draw the attention of relevant Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica, to those parts of the Report of the Meeting, as well as to information documents submitted to the Meeting and made available to the public, relevant to the scientific or technical interest which such agencies and organizations have in Antarctica.

OPERATION OF THE ANTARCTIC TREATY SYSTEM

(Agenda item 6)

"White Book"
(Agenda item 6a)

24. The question of producing a "White Book" on the history and achievements of the Antarctic Treaty system (see paragraphs 13-14 of the Report of the XIVth Consultative Meeting) was further discussed.

25. The Chilean delegation submitted a working paper which outlined the elements which might be included in a "White Book" commemorating the 30th anniversary of the Antarctic Treaty, under the broad headings of "The history of international scientific cooperation in Antarctica", "The Antarctic Treaty system and its operation", "Information about the Antarctic Treaty system", "The Antarctic Treaty system and the public", and "The future of the Antarctic Treaty system".

26. While delegations agreed that there was a need for wider dissemination of information about the Antarctic Treaty system and that it would be desirable for a "White Book" to appear, concerns were expressed on the practical problems of producing such a publication. These included problems relating to editing, compilation of available information, finance and the audience at which the book should be aimed.

27. The Meeting suggested that Contracting Parties might, individually, use the elements suggested by the Chilean delegation for publication of relevant information.

Organizational aspects
(Agenda item 6(b))

28. A working paper was submitted by the United States delegation on requirements for support of the Antarctic Treaty system, which included a proposal to establish a permanent infrastructure to support the consultative mechanism in the form of a small secretariat. It was noted that this proposal had been the subject of previous discussion, most recently at the XIVth Consultative Meeting (paragraphs 24-38 of the Final Report).

29. In support of the proposal, it was stressed that Consultative Parties should begin paying attention to the problems of effectively supporting the Antarctic Treaty system and that steps should be taken now to address the problem. Any infrastructure which was established would be purely supportive. There was a growing need for Treaty parties to communicate rapidly with each other; a data base mechanism might be established; it was necessary to have an early warning system for adopting new measures. It was pointed out that many items on the agenda of the current Meeting indicated the need for quick exchange of information between Treaty members. This illustrated the need for better data management and information sharing. All those points had been highlighted in the working paper under consideration. The establishment of a permanent secretariat would inevitably take time and would need to be the subject of further consideration. It was suggested that initial steps be taken to establish some form of interim mechanism. The initial steps that might be taken were outlined in the working paper. In conclusion, it was said that establishing supportive infrastructure was necessary to carry on the dynamism of the Antarctic Treaty system.

30. Some delegations expressed the view that there was no need for a permanent secretariat. There were a number of reasons for this. There were already many institutions within the Antarctic Treaty system including CCAMLR, CCAS and CRAMRA. Full use could also be made of SCAR and the Depositary Government. It was suggested that the success of the Treaty was due in large part to its flexibility and absence of an international - type organisation which would tend towards politicisation and form groups within itself. It was further suggested that the list of jobs which might be done by a secretariat as outlined in the working paper was already being done adequately. For example the system of Preparatory Meetings for Consultative Meetings worked well; documents were circulated through diplomatic channels; communication between Treaty members had always flowed smoothly. Host countries of Consultative Meetings had always been able successfully to arrange meetings and meet all costs without the help of a permanent secretariat.

31. Some delegations considered that with the inevitable expansion of the system and the increased international awareness of Antarctica, there was a need for a focal point for the Antarctic Treaty system. This task could effectively be performed by a small, cost-effective infrastructure. It was also suggested that a modest infrastructure would be able effectively to manage the considerable number of papers now being produced by the system and to undertake the synoptical work on papers submitted to the Consultative Meetings.

32. Other delegations considered that more time was needed to reflect on the various arguments for and against the proposal and to analyse them. They were unable to agree that a secretariat was necessary.

33. In view of the differing arguments that had been expressed, the Meeting was unable to reach a consensus on this issue.

34. It was agreed to take up the organizational aspects of the Treaty system again at the XVIth Consultative Meeting.

Public availability of the documents of Consultative Meetings (Agenda item 6 (c))

35. It was noted that the documents of the IVth to VIIth Consultative Meetings became publicly available at the conclusion of the XIVth Consultative Meeting. The Meeting considered whether to make publicly available:

(a) the documents of the VIIIth to XIVth Consultative Meetings inclusive;

(b) the minutes of the meetings held in Brussels in 1964 leading to the adoption of the Agreed Measures for the Conservation of Antarctic Fauna and Flora;

(c) the Final Report of the Special Preparatory Meeting held in Paris in 1976.

36. In the ensuing discussion the Meeting agreed that these documents could be made publicly available. It was pointed out, however, that Consultative Meeting documents relating to issues still under negotiation should not be released. In reply, it was noted that lists of documents are circulated for consideration as to whether an individual document should be released or not. All documents should be released unless otherwise identified. It was also considered that any Consultative Meeting information papers which had been produced by an outside organisation and which are not in the public domain should only be released with the permission of the organisation that originated the document.

37. The Meeting agreed that, with the above considerations in mind, all documents from the VIIIth to the XIVth Consultative Meetings could be made publicly available. It was also agreed that the minutes of the meetings held in Brussels in 1964 and the Final Report of the Preparatory Meeting held in Paris in 1976 could be made publicly available.

38. It was further suggested that the Information and Working Papers from the Second and Fourth Special Antarctic Treaty Consultative Meetings, establishing CCAMLR and CRAMRA, might be made publicly available. The Depositary Governments for both Conventions (Australia and New Zealand) were asked to produce lists of documents for consideration.

39. The Meeting agreed that, following the receipt by all Treaty Parties of these lists of documents, the question of public release would be considered at the next Consultative Meeting.

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS.

(Agenda item 7)

40. This item was first considered in a general debate in plenary and was then referred to Working Group I for further consideration. The discussion focussed in particular on working papers submitted by France and Australia, Chile, New Zealand, United States and Sweden. These papers are annexed to this report (Annex C).

41. France and Australia introduced XV ATCM/WP/2 and XV ATCM/WP/3 containing joint proposals for the establishment of a comprehensive environmental protection regime in Antarctica and the holding of a Special Consultative Meeting in 1990 to begin its elaboration.

42. France referred to the opening address by the Prime Minister of the French Republic, Mr Michel Rocard, on 9 October, which had mentioned the antecedents of the comprehensive approach in initiatives taken at the Preparatory Meeting and the joint position reached between the Prime Ministers of France and Australia in August, and had given a general outline of the proposals. France described in detail the possible components of a framework convention which, in the French-Australian view, was the best and fastest means of dealing with current shortcomings, ensuring comprehensive environmental protection and strengthening the Antarctic Treaty system by establishing Antarctica as a natural reserve. It was stressed that the proposal would provide more coherent, responsive and efficient environmental protection arrangements, would be fully consistent with the letter and the spirit of the Antarctic Treaty and would not, in any way, establish a parallel system nor detract from the special responsibilities of the Antarctic Treaty Consultative Parties in respect of environmental management.

43. Following consultations with Consultative Parties through diplomatic channels before the Meeting, France and Australia tabled a draft recommendation (XV ATCM/WP/2). This provided for a Special Consultative Meeting to be held in 1990 with very broad terms of reference to encompass all points of view.

44. Australia also spoke to the joint papers, concurring entirely with France, and underlined that the French-Australian draft recommendation provided for all proposals to be considered in a frank and fair way at a Special Consultative Meeting, on comprehensive environment protection, to begin its work in 1990.

45. The main thrust of the Chilean paper, contained in document XV ATCM/WP/7, was to record the work of the Antarctic Treaty System on the protection of the environment, which was one of its essential features, and identify the milestones in the 28 years of its existence. Starting from the existing system of environmental protection, it suggested ways and means to consolidate and perfect that system.

46. To that end, the paper postulated the need to consolidate and expand the set of principles designed to apply to all human activities in Antarctica. It then suggested that an evaluation be made of existing measures in order to systematize them, perfect, where necessary, the obligations contained therein, and detect possible gaps. The paper envisaged that all forms of activities present or foreseeable should be covered.

47. For such purposes, the Chilean paper went on to suggest that a Special Consultative Meeting should be convened in 1990 in order to complete the set of principles referred to above and undertake the work outlined above. The results of the meeting should be expressed in a comprehensive set of Agreed Measures which would be an appropriate form because of its

closeness to the Antarctic Treaty, its legally binding nature and the comparative facility of its negotiation and approval.

48. The New Zealand working paper contained in document XV ATCM/WP/4 also recalled the different measures that had been adopted under the Treaty system for the protection of the Antarctic environment. It noted that there were gaps in the system that needed to be addressed, that implementation of some measures previously adopted had not always been up to the desired standards and that there was a need for greater integration and coordination within the Treaty system.

49. In order to ensure a properly integrated, comprehensive and internally consistent regime of environmental protection, it proposed the elaboration of a series of basic standards or principles for all forms of human activity in Antarctica. The environmental protection regime should build on and strengthen previous achievements and should not seek to duplicate or to replace existing measures. The paper also addressed a number of measures of general application for environmental protection as well as proposing a series of measures specific to particular activities in Antarctica and suggested some institutional measures to enhance environmental protection. The New Zealand paper also proposed the convening of a meeting on environmental protection in 1990.

50. The paper introduced by the United States in XV ATCM/WP/8 was based on its view that the Antarctic Treaty Parties have a commitment to ensure that there is an effective, integrated and comprehensive set of measures governing activities in Antarctica to provide for the protection of the environment. These measures should be cast to establish clear and enforceable obligations, and should be based on the Antarctic Treaty system and all its components. It was the United States view that Antarctic Treaty Consultative Meetings were the proper forum for elaboration of these measures.

51. The main focus of the United States paper was an outline of a program of work for the consideration and adoption of comprehensive measures. This included a delineation of standards, procedures and activities which should be addressed, and a list of criteria which should be used when considering these various elements. The paper recommended that Parties establish concrete objectives to assist in their work.

52. The Swedish paper XV ATCM/WP/14 sought to identify the common elements of the other papers in order to find possible elements of a recommendation for further work. It was suggested that the preambular paragraphs should state the need for further protection of the Antarctic environment in the framework of the Treaty system and that, therefore, a Consultative Meeting on environmental issues should be convened in 1990. The operative paragraphs should be based on the need to define more exactly the environmental concerns relating to activities in Antarctica, the need to define human activities that cause such concerns, the need to develop

further basic standards for all forms of human activity and to consider proposals for action in the short and the long term.

53. All delegations welcomed the inscription of this item on the agenda of the XVth Consultative Meeting at the initiative of Chile, and expressed appreciation for the working papers that had been presented.

54. There was widespread support for the convening of a Special Consultative Meeting in 1990 to consider comprehensive measures for protection of the Antarctic environment. There was also a strong view that the XVth Consultative Meeting should make as much progress as possible on all items on its agenda relating to the protection of the environment.

55. A common theme of the debate on this item was that there was already a substantial body of measures for the protection of the Antarctic environment adopted under the Treaty system and support for moving forward within that system. The point was made, however, that the item provided an opportunity for a more comprehensive look at the overall question of environmental protection.

56. It was noted that there were a number of common elements in the papers. It was also noted that a major difference between the various approaches was over the means best designed to enhance further protection for the Antarctic environment. In this regard, some delegations expressed a preference for the Franco-Australian approach, including the proposal to elaborate a comprehensive convention for the protection of the Antarctic environment.

57. Other delegations did not support this approach. They expressed concerns about the relationship between the proposed new convention and existing measures, including the Convention for the Conservation of Antarctic Seals and the Convention on the Conservation of Antarctic Marine Living Resources, as well as the Convention on the Regulation of Antarctic Mineral Resource Activities. These delegations stressed the need to build on the existing achievements of the Treaty system.

58. During the course of discussions a number of delegations also referred to the protocol on liability, which would be designed to enhance the protection of the Antarctic environment, provided for in Article 8 (7) of the Convention on Regulation of Antarctic Mineral Resource Activities. They proposed that a meeting should be convened in 1990 to begin work on the elaboration of the protocol, as called for in the Final Act of the Fourth Special Antarctic Treaty Consultative Meeting.

59. The United Kingdom tabled a draft recommendation which recalled measures taken in the Antarctic Treaty System for protection of the Antarctic environment and its dependent and associated ecosystems and set out possible terms of reference for a meeting in 1990 to work on "Comprehensive measures for

the protection of the Antarctic environment and its dependent and associated ecosystems". The draft also included a proposal for a meeting, also to be held in 1990, to begin the negotiations on the liability protocol.

60. This draft recommendation, together with that proposed by France and Australia, were considered in consultations convened by the Chairman of Working Group I, with the objective of securing an agreed recommendation on this item.

61. As a result of these consultations, the Chairman of Working Group I presented the text of two draft recommendations which were subsequently adopted by the meeting as Recommendations XV-1 and XV-2.

62. As reflected in the first Recommendation, the Meeting agreed that there should be a Special Consultative Meeting held in 1990 to explore and discuss all proposals relating to the comprehensive protection of the Antarctic environment and its dependent and associated ecosystems.

63. The Chairman of Working Group I put forward as a contribution to the discussion of this item, a set of principles which are annexed to this Report (Annex D). The Meeting did not have sufficient time to consider these principles, although a number of delegations expressed reservations about some aspects of them.

64. It was also agreed that a meeting should be held in 1990 to explore and discuss all proposals relating to Article 8 (7) of the Convention on the Regulation of Antarctic Mineral Resource Activities, as reflected in Recommendation XV-2.

65. The Meeting noted with appreciation the offer of the Government of Chile to host the meetings called for in the above Recommendations, subject to confirmation through diplomatic channels.

66. With reference to Recommendation XV-2, some delegations noted that they would have preferred the initiation of negotiations aimed at the conclusion of an agreement on liability for all ongoing activities in Antarctica that might cause damage to the Antarctic environment. Some other delegations also underlined the importance of reinforcing the current "moratorium" on mineral resource activities. Other delegations pointed out that in their view the "moratorium" derived from the Fourth Special Antarctic Treaty Consultative Meeting which had adopted the Convention on the Regulation of Antarctic Mineral Resource Activities.

67. As reflected in papers presented under this item, most of the items on the agenda of the Meeting covered aspects of environmental protection in Antarctica. They encompassed a range of considerations on how to prevent, reduce and mitigate adverse impacts on Antarctic terrestrial, marine and atmospheric environments. These ranged from specific

regulation of waste disposal and marine pollution control, to improving the protected area system and integrating prior assessment of potential adverse environmental impacts into the planning stages of Antarctic activities. They also addressed the value of Antarctica for scientific research. On the one hand, they consider the need to preserve the relatively pristine nature of Antarctica as a baseline from which to determine contamination of local and global environments. On the other hand, they sought to promote international cooperation in carrying out the research and monitoring programs that would contribute to the understanding of human impacts on local and global environments.

68. In respect of the scientific research issues, the Meeting considered several inter-related issues and agreed on significant measures. These included the declaration adopted pursuant to agenda item 8 on the role of Antarctica in understanding and monitoring global change, including the ozone layer, and Recommendation XV-14 on promotion of international scientific cooperation; Recommendation XV-5 on environmental monitoring in Antarctica; Recommendation XV-16 on improving the comparability and accessibility of scientific data on Antarctica; and Recommendation XV-15 on cooperation among national Antarctic programs and through SCAR to promote Antarctic research of benefit to all, in ways that efficiently utilized scarce resources.

69. Closely related to promoting environmental protection and scientific cooperation in Antarctica is the concern over increased concentration in the siting of research stations and how to avoid mutual interference among different national Antarctic research programs, unnecessary duplication of research, and the potential for cumulative adverse environmental impacts. This issue was considered under three agenda items and resulted in: Recommendation XV-17 on siting of stations, which urges consultations and the preparation of environmental impact assessments in relation to the establishment of new stations, as well as the provision of assistance to non-Consultative Parties in locating stations and assessing their impacts; Recommendation XV-15 , on scientific cooperation, noted above; and Recommendation XV-11 on the adoption of a new category of Multiple-use Planning Area. The implementation of Recommendation- XIV-2 on environmental impact assessment of stations and logistic facilities, considered at the meeting, was also considered to be relevant to this issue.

THE ROLE OF ANTARCTICA IN UNDERSTANDING AND MONITORING GLOBAL CHANGE, INCLUDING THE OZONE LAYER

(Agenda item 8)

70. The Antarctic Treaty Consultative Parties expressed their concern for the depletion of the ozone layer, which is a phenomenon caused by factors originating outside of Antarctica

but having consequences for its environment and dependent and associated ecosystems.

71. The Meeting discussed this matter on the basis of a proposal made by the delegation of Chile, which received widespread support. Several delegations contributed to improvement of the final text.

72. The Meeting adopted the Declaration on the Ozone Layer and Climate Change (Part III of this Report).

ENVIRONMENTAL MONITORING

(Agenda items 7, 8, 9, 10, 12, and 13)

73. The question of the need for environmental monitoring arose in connection with several agenda items.

74. The United States introduced a draft recommendation intended to synthesize the various concerns expressed into an integrated course of action. The draft recommendation emphasized the need for environmental monitoring both with respect to the effects of human activities in Antarctica and regarding the importance of Antarctica as an ideal location for monitoring early indications of global environmental change.

75. After discussion, the Meeting adopted Recommendation XV-5 which calls on Governments to continue and, as appropriate, expand programs for monitoring global environmental change, as well as local monitoring programs related to human activities in Antarctica. In addition, Governments were urged to maintain accurate records of materials introduced into, and removed from, Antarctica and to establish cooperative working relationship with international organizations involved or interested in environmental monitoring.

76. Finally, it was agreed that Governments should work together to identify cooperative long-term monitoring programs, environmental parameters to be measured, and methods for the collection and handling of data.

HUMAN IMPACT ON THE ANTARCTIC ENVIRONMENT

(Agenda item 9)

Waste disposal
(Agenda item 9(a))

77. The Meeting warmly received the report of the SCAR Panel of Experts on Waste Disposal in the Antarctic, which was made in response to Recommendation XIII-4. It thanked the Australian Antarctic Division for providing the Chairman of the panel and much of the coordinating work over several years

and for printing the report for SCAR. Drawing on the SCAR report and draft recommendations submitted by the delegations of the United States and Australia, the Meeting adopted Recommendation XV-3, which sets out agreed practices regarding waste management planning and waste disposal, as well as procedures to be followed in the implementation of the Recommendation. The Recommendation also states that Governments must take measures within their competence to ensure compliance with the agreed practices by all those subject to their jurisdiction, including both private operations in Antarctica and activities sponsored by Governments. It adds that the practices were not intended to prevent any Government from applying more stringent standards to Antarctic activities subject to its jurisdiction. Each Government is encouraged as a matter of policy to ensure that its nationals and vessels are subject to measures governing waste disposal in Antarctica that are no less effective in affording protection of the environment than those applicable to their nationals and vessels outside of Antarctica.

78. The Meeting noted that the implementation of some of these practices requires dedicated resources that should be regarded as a legitimate cost of operating in the Antarctic.

79. The Consultative Parties reaffirmed the exhortation, contained in the Code of Conduct for Antarctic expeditions and station activities annexed to Recommendation VIII-11 , that they should continue to avoid the use in Antarctica of leaded fuels or fuels containing ethylene bromide and ethylene chloride.

80. The Meeting reaffirmed the goals noted in paragraph 74(e) of the report of XIVth Consultative Meeting, acknowledged the desirability of relying increasingly on retrograding wastes from Antarctica, and noted the need to avoid detrimental effects on dependent or associated ecosystems outside the Antarctic Treaty area. It also reaffirmed its agreement to encourage the implementation and application of new and improved methods of waste disposal and the exchange of information on them. In this context, Representatives emphasized the value of cooperation and of mechanisms for information exchange, taking note of the proposed Symposium on Logistics and the exposition on polar technologies at XXI SCAR in Brazil, which will encompass waste management technologies.

81. Some delegations expressed concern about the possible environmental impacts of wrecked vessels and crashed aircraft. The Meeting noted that in some cases efforts to remove such craft could result in environmental impacts more significant that non-removal. It stressed that the principal concern was that possible contaminants, such as fuel, should be removed.

82. Some delegations raised the issue of whether certain wastes might have potential historic value. The meeting agreed that such cases could be dealt with under the existing

mechanisms for the designation of Historic Sites and Monuments.

Further Work

83. Appropriate Technologies: There was discussion of the desirability of exploring further the utilization of low-impact waste management technologies and practices, including those that conserve energy and water. Attention was drawn in particular to the need for further study of the advantages and disadvantages of incineration technologies.

84. Dumping of Wastes at Sea: In addressing a future program of work, the Meeting agreed to consider further restrictions on dumping of wastes at sea, and in particular the dumping of chemical wastes and ash from incineration, bearing in mind applicable international agreements for the protection of the marine environment. The Meeting drew attention to coordinating this effort with future work to be undertaken in relation to marine pollution.

85. National Waste Management plans and a System of Classification of Wastes: Representatives took note of the reference in paragraph 4 of Recommendation XV-3 to the development of standardized formats for national waste management plans. They agreed that it would be useful to pursue this objective together with the elaboration of a classification system for wastes and their sources as called for in paragraph 2 of the Recommendation, as a means of facilitating waste management planning and the evaluation of the impacts of waste storage and disposal. Such plans might take into account projected growth in activities and the resulting volume of wastes generated, including fuel consumption by vehicles and aircraft; methods for recording and keeping track of materials taken to and removed from Antarctica, such as labelling or the application of a system of manifests; and the characteristics of wastes and their potential hazards. In the elaboration of a waste classification system, the Meeting noted that care should be taken to avoid inconsistencies with classifications employed in other relevant international agreements. In this regard specific mention was made of the 1972 International Convention for the Prevention of Marine Pollution by the Dumping of Wastes and Other Matter and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal.

86. Vessels: Consideration will also be given to agreement on standards for shipboard equipment to manage ship-generated garbage in all vessels engaged in or supporting Antarctic programs, both in regard to existing vessels and the design and construction of new vessels.

87. Storage and Handling of Wastes: The Meeting took note of the conclusion and the report of XIth Consultative Meeting on

the appropriateness of setting up protective walls around oil storage tanks to reduce oil contamination of the marine environment, and agreed to undertake further work on appropriate means of storage and handling of wastes.

88. Environment Monitoring: In outlining future work on these issues, the Meeting took note also of Recommendation XV-5 on Environmental Monitoring in Antarctica and of the need for means to keep under continuing review waste reduction and waste management practices in Antarctica in light of new information on environmental impacts.

Marine Pollution
(Agenda item 9(b))

89. The Meeting welcomed the papers presented by the United States, Uruguay, and the Federal Republic of Germany on this issue and adopted Recommendation XV-4 on the Prevention, control, and response to marine pollution. The Recommendation calls for Governments to take measures within their competence to prohibit within the Antarctic Treaty area certain discharges and disposal from vessels and to ensure that their vessels comply with the relevant provisions of specified international Conventions on vessel safety and pollution control. It also calls upon them to become parties to these Conventions if they are not. It calls in addition for the establishment of contingency plans for marine pollution response and sets forth a procedure for doing so.

90. In addressing the issue of vessels subject to the prohibitions referred to in the Recommendation (paragraph 1), the Meeting took note of the difficulties and hazards posed for small yachts in meeting the requirements in paragraphs 1 (b) and 1 (c) of having to dispose of food wastes and sewage beyond 12 nautical miles of land or ice shelves. In light of this, it decided that these provisions could be interpreted to provide a limited exception for such vessels, while affirming that every effort should be made to comply with them.

91. In discussing the sovereign immunity clause in paragraph 3, some Representatives expressed a preference for limiting the scope of the potential exception provided by this clause. Others expressed difficulty in doing so, and noted that the clause parallels similar provisions in a number of international conventions governing vessels. The Meeting affirmed that the provisions of the recommendation should apply to all vessels and all agreed to make every effort to ensure that their vessels with sovereign immunity engaged in or supporting Antarctic operations act in a manner consistent with these provisions.

92. The prohibitions contained in the Recommendation XV-4 on discharge or disposal of certain wastes within the Antarctic Treaty area are consistent with designation of the area as a special area under the 1973/78 International Convention for

the Prevention of Marine Pollution from Ships. Therefore, the Meeting agreed that the Contracting Parties to the Antarctic Treaty that are also parties to MARPOL 73/78 consider formally proposing the designation of the Antarctic Treaty Area as a special area under MARPOL 73/78 within the International Maritime organization (IMO). Nevertheless, the Representatives agreed in the Recommendation that the establishment of waste reception facilities for vessels in the Antarctic Treaty area would not be desirable, because they wished to avoid transferring the problem of waste disposal from vessels to Antarctic stations and facilities. They noted that this could place a significant burden upon Governments adjacent to the Antarctic Treaty area in providing such reception facilities. In light of this fact, therefore, they agreed that flag states of vessels concerned should consider means of assisting at arriving at an acceptable solution. It was noted that commercial operators might also be interested in providing solutions.

93. The Meeting drew attention to the linkages between the issue of marine pollution and other issues on the agenda of the Consultative Meeting, including waste disposal, hydrographic charting and the provision and improvement of hydrometeorological services for vessels and aircraft safety. It also noted that it would be helpful if Governments informed each other of steps taken to implement the provisions of Recommendation XV-4.

94. In relation to future work on contingency plans for marine pollution response, the Meeting noted that the host government of the next Consultative Meeting should initiate at an appropriate time the consultations concerning the date and place for the meeting of experts called for in paragraph 7 of the Recommendation. The expert from the IMO informed the Meeting that the IMO Assembly had agreed to provide assistance to Governments in the development of contingency plans and establishment of reception facilities. The view was expressed that care should be taken to avoid excessive demands on Antarctic experts by coordinating the timing and location of such meetings.

95. In looking at future work, there was agreement that issues related to liability for marine pollution damage warranted attention, as well as consideration of the relevance of additional international conventions to questions of marine pollution in Antarctica. In this context, specific mention was made of further restrictions on dumping and incineration at sea in the Antarctic Treaty area, pursuant to the London Dumping Convention; considering designation of the Antarctic Treaty area as a special area under Annex II of MARPOL 73/78 on transport of chemicals in bulk; and the 1989 Convention on Control of Transboundary Movement of Hazardous Wastes and Their Disposal. Attention was called to the hazards of vessel operation in the Antarctic Treaty area and the view expressed that it would be useful to consider special requirements for vessel construction in the future.

Implementation of environmental impact assessment procedures (agenda item 9(c))

96. The Meeting noted reports of national experiences with respect to Recommendation XIV-2: "Human impact on the Antarctic environment: Environmental impact assessment".

97. The Meeting noted the importance of integrating the assessment of environmental impacts into the planning process, leading to decisions about scientific research programmes and their associated logistic support activities in Antarctica. It called upon the Parties that have not already done so to approve Recommendation XIV-2 as soon as possible.

98. Pending the Recommendation becoming effective, the meeting called upon Parties to abide by its provisions, including the provision that a Party preparing a Comprehensive Environmental Evaluation (CEE) should circulate this to other parties, thus providing the opportunity to comment on CEEs in the course of preparation.

99. Some delegations expressed the view that environmental impact assessment procedures should be applied to all human activities in the Antarctic, for example tourism and activities by non-Consultative Parties. This view was widely shared. There was insufficient time at this Meeting, however, to decide how to extend the obligations set out in Recommendation XIV-2 to activities beyond scientific research programmes and their associated logistic support facilities.

100. Some delegations pointed out that the procedures of Recommendation XIV-2 should apply to any changes which may impact on the environment at any stage of an operation including, for example, the decommissioning of facilities. This is consistent with the 1986 recommendation of SCAR.

101. The United Kingdom circulated a draft recommendation (ATCM/XV/WP/50) which set out lists of activities which would certainly invoke the preparation of a CEE, or would probably invoke the preparation of CEE, for logistic/support activities, scientific activities, and other activities. However, there was insufficient time to discuss this paper fully and the matter was deferred for consideration at a subsequent Consultative Meeting.

102. Several delegations noted the difficulties of determining when to prepare Initial Environmental Evaluations (IEEs) and when to proceed to the more extensive analysis required in a CEE. Some delegations proposed that there should be agreed criteria to determine whether an IEE or CEE is required. Some delegations suggested CEEs should necessarily be prepared for new stations and for landing sites for fixed-wing aircraft.

103. The Representatives noted that Recommendation XIV-2 establishes guidelines for determining the possible significance of environmental impacts of potential or planned

Antarctic activities through an IEE. The content of that document is determined by the circumstances concerning each specific activity. In that context some delegations pointed out that consideration of lists of activities causing significant environmental impacts could be helpful in guiding national decisions in this regard, but that the use of lists and criteria should be limited to aiding decisions concerning level of impact and not substitute for the analysis required in the IEE. Other delegates expressed doubts about the usefulness of such lists, because they may be arbitrary and if applied strictly may lead to wrong decisions.

104. The Meeting was informed that the Council of Managers of National Antarctic Programmes (COMNAP) had considered these issues at their meeting in Cambridge, England, on 5-6 October 1989, and had proposed that a workshop on environmental impact assessment be held in the near future.

105. The delegates welcomed this initiative and asked that, in planning the workshop, the Managers of National Antarctic Programmes give due consideration to Recommendation XIV-2 and the guidelines for environmental impact assessment procedures set forth therein. Some delegations considered that it would be particularly helpful if the workshop would:

(a) include persons with first hand knowledge of environmental impact assessment requirements and procedures;

(b) review environmental impact assessment procedures presently being used by various governments; and

(c) consider what additional steps could be taken by operators to integrate environmental impact assessment procedures into their planning processes.

106. Some delegations proposed that agreed procedures should be developed to ensure:

(a) that timely notification is given to other Treaty Parties that a draft CEE is to be prepared;

(b) that documentation prepared for a draft CEE is given timely circulation to other Treaty Parties to ensure adequate opportunities for comments to be made; and

(c) comments provided by other parties are addressed in the final CEE.

107. Some delegations emphasized that exchange of information should also include:

(a) a list of IEEs undertaken; and

(b) a list of CEEs in process, and approximate dates of circulation.

108. It was noted that some Parties have national legislative requirements concerning environmental impact assessment that they must meet in preparing CEEs.

109. The Federal Republic of Germany presented information paper (XV ATCM/INF/37) describing the implementation, on a trial basis, of a national procedure for conducting environmental impact assessments in accordance with Recommendation XIV-2. It invited other Parties to exchange informally information on, and experiences with, environmental impact assessment procedures with a view to increasing the comparability of results by different Treaty Parties. Delegations welcomed this proposal, noted that such exchange of information would assist states further to develop national law and practice in relation to environmental impact assessment and encouraged such development.

110. The Representatives expressed the view that monitoring is an integral part of environmental impact assessment and that monitoring requirements should be incorporated into national environmental impact assessment procedures promulgated under Recommendation XIV-2, and in this context took note of Recommendation XV-5 on Environmental Monitoring.

111. Finally, as a contribution to the reduction of environmental impacts in Antarctica, the Federal Republic of Germany presented information describing its present research and development activities in the field of wind energy for the energy supply of Antarctic stations (XV ATCM/INF/25).

THE ANTARCTIC PROTECTED AREA SYSTEM

(Agenda item 10)

Proposals for new Sites of Special Scientific Interest
(Agenda item 10 (a))

112. A draft Recommendation was tabled by the United Kingdom setting out Management Plans for three new Sites of Special Scientific Interest that had been recommended and approved at XX SCAR. Recommendation XV-6 was adopted.

113. The German Democratic Republic submitted a proposal for designating a new Site of Special Scientific Interest at Ardley Island, Maxwell Bay, King George Island (XV ATCM/WP/28). This had been drafted by the group of Specialists on Environmental Affairs and Conservation of the Scientific Committee on Antarctic Research (SCAR). It had not yet received the full scrutiny of SCAR but would be submitted for approval at XXI SCAR in Brazil in 1990. If, as seemed likely, it were approved there, it would be passed through National Committees to Governments for consideration at a subsequent Consultative Meeting.

114. The Meeting noted the significance of bird and plant communities at Ardley Island to the Antarctic environment, and the importance of research work being carried out there, notably by scientists from Chile and from the German Democratic Republic, and agreed to take note of the provisions of the draft management plan for Ardley Island contained in the information paper (XV ATCM/INF/24) submitted by the German Democratic Republic.

115. A draft recommendation was tabled jointly by Chile, the United Kingdom and the United States, proposing that Specially Protected Area No 11, Cape Shirreff, be redesignated as a Site of Special Scientific Interest.

116. Cape Shirreff was designated as SPA n°11 by Recommendation IV-11 "on the grounds that the Cape supports a considerable diversity of plant and animal life, including many invertebrates, that a substantial population of elephant seals (Mirounga leonina) and small colonies of fur seals (Arctocephalus sp.) are found on the beaches and that the area is of outstanding interest". Since the SPA was designated, the fur seal colony has grown to a size at which non-invasive research can safely be undertaken without threatening the existence and continued growth of the colony.

117. The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) recognises that harvesting of species such as Antarctic krill could have adverse effects on krill-consuming species, such as fur seals, as well as on the target species. To provide a means of detecting and avoiding possible adverse effects on dependent as well as on the target species the Scientific Committee of CCAMLR has established the CCAMLR Ecosystem Monitoring Programme (CEMP). A working Group established by the Scientific Committee had noted that predator species, including Antarctic fur seals, might be useful indicators of the possible indirect effects of krill harvesting. It had recommended that populations of these predators be studied and monitored at a network of sites throughout the Antarctic.

118. During the 1986/87 austral summer, researchers from the United States surveyed areas in the South Shetland Islands and the Antarctic Peninsula. This survey suggested that the Cape Shirreff-Telmo Islands area would be the best site for long-term monitoring of fur seal colonies that could be affected by fisheries around the South Shetland Islands.

119. To carry out a long-term monitoring programme safely and effectively, a multi-year field camp for 4-6 researchers would have to be established within the area currently designated as Specially Protected Area N°11. This might be considered inappropriate within an SPA and hence the proposal was made to redesignate Cape Shirreff as a Site of Special Scientific Interest. Additionally, it was proposed substantially to enlarge the site by the inclusion of the Telmo Islands group,

presently the location of the largest fur seal colony in the Antarctic Treaty Area.

120. Recommendation XV-7 was adopted with the understanding that SSSI n°32, Cape Shirreff, should be redesignated an SPA (in its enlarged form) if and when the long-term monitoring of fur seals and sea birds in the site should be ended.

Status of Sites of Special Scientific Interest
(Agenda item 10 (b))

121. Consideration of the substance of this item, referred to in paragraph 119 of the Report of the XIVth Consultative Meeting, was deferred for consideration at a subsequent Consultative Meeting.

Additional protective measures
(Agenda item 10(c))

Reports of visits to SPAs, SSSIs and HMs and Publication of visit reports and data base mechanism.
(Agenda item 10 (c) (i) and (ii))

122. As noted in the report of the XIVth Consultative Meeting (paragraph 119) in relation to the management plans for Sites of Special Scientific Interest, it is stated in the Preambles of the relevant Recommendations (VIII-4, X-5, XIII-8 and XIV-5) that it would be advantageous to gather experience of the practical effect of the management plans. One way of doing this is periodically to visit and report on the state of the Sites. If such reports are made available they will serve to provide base-line information on which assessments of the effectiveness of the management plans can be made.

123. Similarly, reports on visits to Specially Protected Areas and Historic Sites and Monuments will contribute to knowledge of these Areas, Sites and Monuments, allowing the continuing value of Specially Protected Areas to the conservation of Antarctic fauna and flora, and the continuing values of Historic Sites and Monuments to Antarctic cultural values, to be assessed.

124. The Meeting agreed that an appropriate way of making the information available for the present would be to append such reports on visits to Specially Protected Areas, Sites of Special Scientific Interest, and Historic Sites and Monuments, with a minimum of editing, to the account of each Area, Site or Monument in the Handbook of the Antarctic Treaty System. This would be without prejudice to any decision reached as a result of consideration of the whole issue of area protection at the next Consultative Meeting.

125. The Meeting welcomed reports on visits to Sites of Special Scientific Interest, Specially Protected Areas and Historic

Sites and Monuments prepared by Australia, New Zealand, the United Kingdom and the United States.

Management plans for Specially Protected Areas
(Agenda item 10 (c) (iii))

126. The Agreed Measures for the Conservation of Antarctic Fauna and Flora, Recommendation III-VIII, provide that areas of outstanding scientific interest may be designated as "Specially Protected Areas" (SPAs), with the unanimous agreement of the Consultative Parties, and that areas so designated shall be afforded special protection "in order to preserve their unique natural ecological system". Article VIII of the Agreed Measures calls upon the Contracting Parties to prohibit their nationals from entering SPAs except in accordance with a permit issued for a compelling scientific purpose which cannot be served elsewhere, and when the actions authorized by the permit will not jeopardize the natural ecological system existing in the SPA.

127. Neither the Agreed Measures nor the descriptions of existing SPAs indicate what would constitute a compelling scientific purpose or the types of activities which would or would not adversely affect the unique ecological system protected by the SPA. Further, the descriptions of existing SPAs, provided in Annex B of the Agreed Measures, do not describe the precise ecological system or the components of the system that the protected area designation is intended to preserve. Consequently, the Report of the SCAR ad hoc Group on Additional Protective Measures, presented to, and considered by, the XIVth Consultative Meeting, recommended, among other things, that management plans be developed and agreed for each existing and all future SPAs.

128. There was insufficient time to consider fully the SCAR recommendation at the XIVth Consultative Meeting. The matter was considered further at the XVth Consultative Meeting and Recommendations XV-8 and XV-9 were adopted. During consideration of these Recommendations the Representatives took note of the visits undertaken by Contracting Parties pursuant to paragraph 79 of the Report of XIVth Consultative Meeting and agreed to continue this practice, so as to identify any natural or human-induced changes in the area and report thereon. They agreed further that these reports should indicate any updating required of the area descriptions and identify, as appropriate, any additional measures necessary to give effect to the agreed management plans. The Meeting also considered that in undertaking these visits, any immediate actions necessary to fulfill the objectives of the agreed plan should be identified and, as appropriate, taken. It was noted that such actions could include circumstances where it may be desirable to permit entry into an area specifically for the purpose of limited, non-scientific activities, consistent with the management plan, that will ensure preservation of the area's unique natural ecological system. Delegations also agreed that area

descriptions and management plans should be reviewed periodically to ensure that they remain accurate and applicable.

New categories of protected areas
(Agenda item 10 (c) (iv))

129. Establishment of a new, single purpose category of Antarctic Protected Area. During the XIVth Consultative Meeting Australia, the United States and other Treaty Parties called attention to the desirability of identifying and protecting areas of outstanding geological, recreational, scenic and wilderness value in Antarctica. There were differing views as to whether protection could be provided to such areas under existing provisions of the Agreed Measures. The United States therefore proposed establishing a new category of protected area, to provide a clear means for protecting such areas. Time was insufficient to consider fully this proposal and further consideration was deferred until the XVth Consultative Meeting.

130. The United States submitted a working paper on the subject. The Meeting agreed that provision should be made for protecting areas of outstanding geological, glaciological, geomor-phological, aesthetic, scenic and wilderness value as well as areas of outstanding ecological, scientific and historic value in Antarctica. Recommendation XV-10, providing for designation of Specially Reserved Areas, was adopted. During consideration of this Recommendation, it was affirmed that measures adopted in the Recommendation were not intended to interfere with the possibility of a non-Consultative Party establishing a station in Antarctica.

131. Establishment of a Multiple-Use Category of Antarctic Protected Area. Recommendation XIII-5 called upon Treaty Parties, through their national committees, to invite the Scientific Committee on Antarctic Research (SCAR) to consider and provide advice on measures that might usefully be taken to improve the system of protected areas in the Antarctic. In its response, provided in a Report entitled "The Protected Area System in the Antarctic", SCAR recommended, among other things, that an additional category of protected area be established to provide for coordinated management of activities in areas where multiple activities may interfere with one another or cause cumulative environmental impacts.

132. The SCAR recommendation was considered at the XIVth Consultative Meeting. Several delegations were then of the view that the concept of multiple-use planning in Antarctica was not well enough developed, either operationally or conceptually, to act on the SCAR recommendation. It was suggested and agreed that, in order to obtain a better idea of the scope and possible consequences of the proposed multiple-use category of Antarctic Protected Area (APA), it would be helpful if illustrative management plans for several possible APAs

were prepared and distributed at the Preparatory Meeting for the XVth Consultative Meeting. In response to this suggestion, Australia, the United Kingdom, and the United States prepared illustrative draft management plans for: the Vestfold Hills, Princess Elizabeth Land; Signy Island, South Orkney Islands; and the area around Palmer Station on Anvers Island.

133. To facilitate consideration of this matter at the XVth Consultative Meeting, the United States tabled a draft recommendation to establish a new, multi-purpose category of Antarctic Protected Area. In addition, Australia and the United Kingdom tabled revisions of their illustrative draft management plans for the Vestfold Hills (XV ATCM/INF/32) and Signy Islands (XV ATCM/INF/43).

134. During discussion of this matter, there was recognition that the expanding scale and scope of activities in Antarctica were increasing the risk of activities interfering with each other and causing cumulative environmental impacts, particularly in certain high-use areas. There was also recognition that the risk of interference and possible cumulative environmental impacts could be avoided or minimized by cooperative planning and coordination of activities in areas where a variety of activities were going on or were planned. However, a number of delegations expressed doubt about the need for and the practical application of multiple-use planning techniques in Antarctica. Concerns were expressed that, while it was not intended, designation of Antarctic Protected Areas, as recommended by SCAR and provided for in the draft recommendation tabled by the United States, might result in restricting access to parts of Antarctica and the freedom of scientific research guaranteed by the Antarctic Treaty. Further, uncertainties were noted as to who would be able to propose designating APAs and related management plans; how proposals would be developed, considered, and approved; who would be responsible for implementing approved management plans; and how approved plans would be revised and updated to take account of changing circumstances (e.g., termination of, or change in, activities, or initiation of new activities). Also, uncertainties were noted as to the size and number of areas that might be proposed for designation as APAs.

135. The exchange of views on this matter indicated that some of this uncertainty was caused by use of the term "Antarctic Protected Area". To some, this term implied that the purpose of APAs was simply to protect areas that may be damaged by the cumulative effects of multiple activities in those areas. During the debate it was noted that the purpose may be two-fold:

(a) to promote cooperative planning and coordination of activities so as to avoid or minimize the risk of existing and planned activities interfering with one another in designated areas; and

(b) to avoid environmental damage due to the cumulative effects of such activities.

136. It was agreed that a more accurate and descriptive term would be "Multiple-use Planning Area (MPA)". It was also agreed that the proposed recommendation should be revised to reflect the following understandings more clearly:

(a) MPAs would improve protection of environmental values by promoting cooperative planning and coordination of human activities in Antarctic areas where such activities may interfere with one another and would help avoid or minimize the cumulative impacts of such activities on the Antarctic environment;

(b) the number and size of MPAs should be kept to the minimum necessary to accomplish their intended purpose;

(c) MPAs should be used to assist in cooperatively planning and coordinating activities only in areas where there is reason to believe that such activities are interfering or are likely to interfere with one another or cause cumulative environmental impacts, and where such interference or environmental impacts can be avoided or minimized by preparing and implementing an agreed management plan;

(d) management plans should be developed, as appropriate, through consultations among the Parties conducting and planning activities that could be affected by the plan and should be subject to approval by the Consultative Parties;

(e) proposed management plans should be provided to SCAR, the Commission for the Conservation of Antarctic Marine Living Resources and, as appropriate, to other components of the Antarctic Treaty system for review and comment before they are considered by the Consultative Parties, and any comments provided should be considered by the Parties when deciding whether to approve proposed plans;

(f) management plans should be reviewed and updated periodically to take account of changing circumstances and to ensure that they are accomplishing their stated objectives; and

(g) pending development of practical experience in preparing and implementing agreed management plans for Multiple-use Planning Areas, Parties should voluntarily take account of approved plans as they do approved plans for Sites of Special Scientific Interest (SSSIs).

137. The proposed recommendation was revised to reflect these understandings and was adopted as Recommendation XV-11.

Historic Sites and Monuments
(Agenda item 10 c (v))

138. Proposals were received by the Meeting for two new designations to be added to the list of Historical Sites and Monuments annexed to Recommendation VII-9. The United States proposed that the respect and protection required by that Recommendation should be accorded to a monument to Richard E Byrd located at McMurdo Station (77°51'S., 166°40'E.) and to the buildings, artefacts and immediate environs of the Antarctic Service Expedition's East Base located on Stonington Island (68°11'S., 67°W.).

139. Chile informed the Meeting that it had added a bronze bust of Pilot Luis Pardo Villalon to the monolith and plaque at Elephant island (61°03'S., 54°51'W.) and to replicas of the monolith and plaque at the Chilean stations "Arturo Prat" and "Rodolpho Marsh", and that this information should be recorded in a modification of the description of Historic Site No.53.

140. These proposals were adopted as Recommendation XV-12 and Recommendation XV-13 respectively.

141. The Federal Republic of Germany informed the Meeting that the replacement of a plaque at Potter Cove, King George Island, commemorating the expedition of Edward Dallmann, had been completed, as mentioned in the final report of the XIVth Consultative Meeting.

142. In further discussion, some delegations drew attention to the issue raised at the XIVth Consultative Meeting of the vulnerable condition of monuments located in relatively accessible areas of Antarctica and exposed to the risk of damage arising from the increasing scale and intensity of human activities on the continent. In this regard the United States submitted management plans for the Richard E. Byrd monument and East Base as examples of useful means of increasing protection for historic monuments and sites. Some delegations urged consideration of further protective measures for historic sites and monuments. They proposed that sites should be extended to include an area adequate for preserving historical values of the monuments and to avoid increased risk of damage.

143. Finally, the Meeting noted with appreciation the reports on visits to, and the condition of, historic sites contained in information papers submitted by the United States and Australia.

PROMOTION OF INTERNATIONAL SCIENTIFIC COOPERATION

(Agenda item 11)

144. The meeting considered working papers from the Federal Republic of Germany and France and the United Kingdom. It was noted that the United Kingdom paper was directed towards a broad declaration of the commitment of the Parties to scientific research and cooperation in scientific research in Antarctica. It was also noted that the Federal Republic of Germany and France paper was action oriented and aimed at avoiding scientific duplication, improving efficiency and identifying scientific projects which countries may wish to undertake.

145. The Meeting agreed that it would be appropriate to proceed with the development of separate recommendations covering a broad declaration and more specific action respectively.

146. There was agreement on the value of a strong declaration of the commitment of the Treaty Parties to scientific research and cooperation and Recommendation XV-14 was adopted.

147. In relation to more specific action, there was agreement on the importance of taking account of the work of SCAR in planning Antarctic activities. Special mention was made of the 1991 SCAR Antarctic Science Conference and the guidance it could provide. It was further agreed that there would be value in providing countries with less experience and fewer resources, with access to information on how they might best contribute to knowledge of Antarctica, and in assisting them through the provision of advice and training and opportunities to participate in Antarctic programs. Some delegations expressed the view that the value of having such information is such that SCAR should be specifically invited to prepare advice. Others felt it would be preferable to leave the question up to SCAR. In order to assist the debate, the United Kingdom prepared a revised version of the Federal Republic of Germany/France draft recommendation. Following consideration of a wide range of suggestions by various delegations Recommendation XV-15 was adopted.

148. One delegation drew attention to the value of encouraging cooperative use of stations, logistics and scientific facilities. Delegations felt this proposal should be held over for further study.

MEASURES FOR THE FACILITATION OF INTERNATIONAL SCIENTIFIC COOPERATION

(Agenda item 12)

Comparability and accessibility of scientific data
(Agenda item 12 (a))

149. The United States introduced a draft recommendation

recalling the actions of the XIIIth and XIVth Consultative Meetings and the Report of XX SCAR, calling for development of data directory listings, the compilation of an Antarctic Scientific Data Directory, and the identification of future steps towards the creation of an Antarctic Scientific Data System.

150. The draft was generally welcomed and several suggestions for changes were made. Several delegations suggested that government action be closely coordinated with that of SCAR, and that a more detailed programme of work be included. Following informal discussions in a small group, these points were addressed by amending several paragraphs in the draft recommendation.

151. These changes were intended to ensure that consideration of how to create, with SCAR, an Antarctic Scientific Environmental Data System involved close cooperation with government data management experts, and should result in the production of a practical plan of action. Another mechanism to assure this outcome is the convening of a Group of Experts meeting to consider the SCAR draft report. Recommendation XV-16 was adopted.

Concentration of siting of stations
(Agenda item 12 (b))

152. Meeting noted that in some parts of the Antarctic concentration of stations might result in adverse impacts on the environment, the unprofitable duplication of scientific programmes and interference with scientific research. On the other hand, it was noted that the establishment of some research stations in the same vicinity may favour scientific and logistic cooperation and enhance safety. Newcomers to the Antarctic might benefit from advice on possible locations for establishing stations so as to maximise scientific opportunities and minimise negative effects.

153. Papers presented by Chile, the United Kingdom and Uruguay on this issue were considered.

154. After detailed discussion, amongst both Consultative and non-Consultative Parties, Recommendation XV-17 was adopted. This urged Contracting Parties, when considering establishing new stations, to consult and coordinate with others who might be concerned, with a view to minimising interference and adverse impacts. They should prepare a Comprehensive Environmental Evaluation in accordance with Recommendation XIV-2. Consultative Parties should assist non-Consultative Parties proposing to establish a station, with respect to choice of site and the preparation of Comprehensive Environmental Evaluations.

EFFECTS OF TOURISM AND NON-GOVERNMENTAL EXPEDITIONS IN THE ANTARCTIC TREATY AREA

(Agenda item 13)

155. The Meeting noted that the scale of tourism and non-governmental activities in Antarctica continued to increase. It was accepted that Antarctica should in general be open to such activities, which could be valuable in broadening public awareness and appreciation of the continent. However, there continued to be concern that such activities, if uncontrolled or excessive, could have potentially serious adverse impacts on scientific investigations and the Antarctic environment. In this context some delegations indicated that a distinction should be drawn between tourism and non-governmental activities.

156. The Meeting therefore agreed that a comprehensive review of the issue was required, taking account of the relevant provisions of the Antarctic Treaty and existing Recommendations (IV-2, VI-7, VII-4, VIII-9, and X-8), as well as relevant Recommendations adopted at the present Meeting which would contribute to an amelioration of the situation.

157. Several delegations stressed the desirability of such a review leading to further measures to regulate tourist and non-governmental activities, in order to reduce or avoid their possible adverse impacts. Particular emphasis was placed on the need to avoid interference with scientific investigations and their logistic support, and harmful environmental effects. The need to consider questions such as the control of tourist and non-governmental activities, responsibility, insurance, liability, safety, search and rescue, and self-sufficiency was also pointed out by some delegations. The Meeting was assisted by a working paper relating to questions of liability presented by the Federal Republic of Germany (XV ATCM/WP/30), as well as a working paper presented by Chile (XV ATCM/WP/44) relating to several aspects of the matter, including liability.

158. The Meeting agreed that such a review could most appropriately take place within the context of the work on comprehensive measures for the protection of the Antarctic environment and its dependent and associated ecosystems, and that the Special Consultative Meeting to be held in 1990 should undertake the review. The Meeting discussed a list of questions designed to serve as a possible framework for such a review, contained in document XV ATCM/WP/33 presented by the United Kingdom.

ANTARCTIC METEOROLOGY AND TELECOMMUNICATIONS

(Agenda item 14)

159. The Meeting was provided with a report of the activities

of WMO since the presentation of definitive data on the Antarctic observation and telecommunication network at the XIVth Consultative Meeting. WMO has carried out monitoring tests of the ability of the observation/communication system to deliver timely and accurate data, for short periods, in both 1987 and 1988 and these continued to indicate considerable scope for improvement in technology and detailed procedures. WMO further intends to hold a meeting of telecommunications experts in December 1989 to define problems and seek remedies. The WMO Working Group on Antarctic Meteorology (EC-WGAM) will hold its quadrennial meeting in September 1990 and will further consider these problems and the progress of the WMO Long Term Plan for the World Weather Watch in Antarctica. The full text of the WMO report to the XVth Consultative Meeting is reproduced at Annex E.

160. The Meeting agreed to:

(a) note the continuing efforts of WMO to improve the availability of Antarctic meteorological data via improved communication systems and practices;

(b) invite WMO to provide, through its national Permanent Representatives, the report of the special meeting of experts on Antarctic Telecommunications to the Managers of National Antarctic Programmes;

(c) note the WMO intention to proceed with its Long Term Plan for Antarctic meteorological services in the light of relevant decisions of the XVth Consultative Meeting concerning Air Safety and Marine Meteorological Services, and related meetings which have been held with SCAR and IOC; and

(d) invite WMO to provide further information on this matter following the 5th session of EC-WGAM to the XVIth Consultative Meeting.

MARINE HYDROMETEOROLOGICAL SERVICES TO NAVIGATION IN THE SOUTHERN OCEAN

(Agenda item 15)

161. The Meeting was informed of the activity carried out pursuant of Recommendation XIV-10, aimed at the improvement and development of operational marine meteorological and information services for the Antarctic Treaty area. For the review of this matter the Meeting had been provided (as Appendix 9 to the SCAR report) with the report on the results of a SCAR/WMO/IOC meeting of experts held in Leningrad in February 1989. The Leningrad meeting had further developed the possible scientific background to continued improvement in international cooperation on marine meteorology and sea-ice information services in the Antarctic region.

162. In the course of discussing this matter, it became clear that there could be value in more detailed analysis of the report of the Leningrad meeting by the WMO Working Group on Antarctic Meteorology, which would have available to it the individual national plans which were not available to the experts in Leningrad. The Meeting also agreed that COMNAP in association with SCAR should consider the WMO Working Group's comments and provide proposals on possible future actions to the following Consultative Meeting. The Meeting expressed its desire that these proposals be prepared within the two year period before the 1991 regular Consultative Meeting.

163. The USSR had submitted a Working Paper which contained its views on possible further steps to be taken by the international Antarctic community in order to develop and improve marine meteorological and information services as initiated by Recommendation XIV-10. The draft recommendation in this paper was referred to a small group, was revised by them and was referred back to the Meeting which adopted it as Recommendation XV-18.

COOPERATION IN THE HYDROGRAPHIC CHARTING OF ANTARCTIC WATERS

(Agenda item 16)

164. This item was included in the agenda on the initiative of Spain. Two working papers were submitted to the Meeting, by Spain and the United Kingdom, containing draft recommendations.

165. In consideration of this item the Meeting was greatly assisted by the expert advice provided by Mr Adam Kerr of the IHO, to whom the Meeting expressed its appreciation.

166. Following subsequent discussion it was agreed that, as the two draft recommendations were broadly similar in nature, it should be possible to merge them into one, taking into account suggestions proposed by other delegations.

167. Accordingly, a small group was convened. The two draft recommendations were combined and a new draft was referred back to the Meeting and was adopted as Recommendation XV-19.

AIR SAFETY IN ANTARCTICA

(Agenda item 17)

168. The Meeting noted that the Meeting of Experts on Air Safety in Antarctica had taken place in Paris from 2 - 5 May 1989. The Final Report of that Meeting was circulated. It contained ten specific proposals relating to air safety. A draft recommendation was submitted by the United Kingdom based on those proposals.

169. The draft, with minor amendments, was adopted as Recommendation XV-20.

USES OF ANTARCTIC ICE

(Agenda item 18)

170. Chile presented a draft recommendation. The Meeting discussed the uses of Antarctic ice, taking into account past consideration of the issue, the possible impact of harvesting on the environment and the desirability that commercial exploitation of Antarctic ice not occur prior to examination of the issues involved.

171. Recommendation XV-21 was adopted. One delegation expressed its preference that the question of commercial exploitation should have been included in the operative part of the Recommendation, rather than in the preamble.

INSPECTIONS UNDER THE ANTARCTIC TREATY

(Agenda item 19)

172. The United States submitted to the Meeting a checklist of points to be considered in the conduct of inspections under the Antarctic Treaty. Delegations expressed their appreciation for this checklist as well as the for Inspection Reports submitted by the Union of Soviet Socialist Republics, the United States of America, Australia, the United Kingdom and New Zealand, and Chile. It was noted that no violations of the Treaty had been found during inspections but that stations could improve efforts to reduce pollution to a minimum.

DATE AND PLACE OF NEXT MEETING

(Agenda item 20)

173. The Meeting received with special satisfaction the invitation of the Federal Republic of Germany to host the XVIth Consultative Meeting in 1991. The FRG proposed that the Preparatory Meeting be held in April and the Consultative Meeting in October 1991. The precise dates of these Meetings will be determined through diplomatic channels by the Government of the Federal Republic of Germany.

ANY OTHER BUSINESS

(Agenda item 21)

174. The Netherlands expressed its regret that its notification relating to consultative status had been deferred by the Ninth Special Antarctic Treaty Consultative Meeting. It indicated

that, in the meantime, the programme of activities planned for the coming five years would be fully implemented.

175. Australia made a suggestion that on the occasion of the thirtieth anniversary of the entry into force of the Antarctic Treaty in 1991, each Consultative Party should issue a commemorative stamp (or stamps) on a common date in the year. Recommendation XV-22 was adopted.

176. The Federal Republic of Germany announced that it will be organizing, jointly with France, an inspection in Antarctica during the Austral summer 1989-1990.

177. Chile stated that it would also be conducting an inspection in 1990.

178. The United Kingdom suggested that a message be sent by the Consultative Parties to all stations in the Antarctic. The text of this message is at Annex F.

ADOPTION OF THE REPORT

(Agenda item 22)

179. Subject to the procedure described in paragraph 11 above, the Final Report and the Recommendations contained therein were adopted by consensus.

CLOSING OF THE MEETING

(Agenda item 23)

180. The Meeting expressed its warm thanks to the Government of France, the Chairman of the Meeting and the Executive Secretary and her staff, and was closed at midnight on 22 October 1989.

PART II

RECOMMENDATIONS ADOPTED AT

THE XVTH ANTARCTIC TREATY CONSULTATIVE MEETING

XV - 1

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS

The Representatives,

Convinced of the need to preserve the Antarctic Treaty system so as to ensure that Antarctica does not become the scene or object of international discord;

Bearing in mind the special legal and political status of Antarctica and the special responsibility of the Antarctic Treaty Consultative Parties to ensure that all activities in Antarctica are consistent with the purposes and principles of the Antarctic Treaty;

Recalling the designation of Antarctica as a Special Conservation Area;

Recognising the vulnerability to human interference of the Antarctic environment and its dependent and associated ecosystems;

Recognising further the unique opportunities Antarctica offers for scientific research on processes of global as well as regional importance;

Taking into account international concern for the environment and the importance of Antarctica for the global environment;

Bearing in mind the substantial body of measures adopted by the Antarctic Treaty Consultative Parties in recognition of their special responsibilities for the protection of the Antarctic environment and its dependent and associated ecosystems;

Recalling in this context Articles V and IX (1) (f) of the Antarctic Treaty and Recommendations setting out general principles for the protection of the Antarctic environment;

Recalling also:

(a) the Agreed Measures for the Conservation of Antarctic Fauna and Flora and associated Recommendations;

(b) the Convention for the Conservation of Antarctic Seals (which entered into force on 11 March 1978);

(c) the Convention on the Conservation of Antarctic Marine Living Resources (which entered into force on 7 April 1982);

(d) the Convention on the Regulation of Antarctic Mineral Resource Activities (which has not yet entered into force);

(e) Recommendations relating to:

(i) the Antarctic Protected Area system concerning Specially Protected Areas, Sites of Special Scientific Interest and Historic Sites and monuments;

(ii) the Code of Conduct for Antarctic expeditions and station activities;

(iii) the effects of Antarctic tourism and non-governmental expeditions;

(iv) the use of radio-isotopes;

(v) oil contamination;

(vi) the prohibition on the disposal of nuclear waste; and

(vii) environmental impact assessment procedures;

as well as work undertaken in relation to the uses of Antarctic ice;

Taking note of proposals made at XVth Consultative Meeting by France and Australia for a comprehensive Convention for the Protection of the Antarctic Environment which would establish Antarctica as a natural reserve, land of science; by the United States for comprehensive measures building on the components of the Antarctic Treaty system; by Chile on comprehensive measures, which include the development of the concept of Antarctica as a Special Conservation Area; by New Zealand for comprehensive measures constituting an integrated and binding environmental protection regime; and by Sweden relating to common elements for environmental protection;

Welcoming the further substantial progress made on the protection of the Antarctic environment and its dependent and associated ecosystems through the work of this Consultative Meeting including the adoption of Recommendation XV-3 on Waste Disposal; Recommendation XV-4 on the Prevention, Control and Response to Marine Pollution; Recommendation XV-5 on Environmental Monitoring in Antarctica; Recommendation XV-6 on New Sites of Special Scientific Interest; Recommendation XV-8 amending Article VIII of the Agreed Measures to provide for Management Plans for Specially Protected Areas (SPAs); Recommendation XV-9 on Development of improved descriptions and management plans for SPAs; Recommendation XV-10 on Establishment of Specially Reserved Areas; Recommendation XV-11 on Establishment of Multiple-use Planning Areas; Recommendation XV-14 and XV-15 on promotion of international scientific

cooperation; Recommendation XV-17 on the Siting of Stations; Recommendation XV-19 on Charting of Antarctic waters; Recommendation XV-21 on Antarctic Ice and the Declaration on the Ozone Layer and Climate Change.

Acknowledging the need, in the light of the unique qualities of Antarctica and increasing human activities there, to ensure the effective implementation, coordination and further elaboration of the system of protection of the Antarctic environment and its dependent and associated ecosystems;

Recommend to their Government that:

1. They undertake as a priority objective the further elaboration, maintenance and effective implementation of a comprehensive system for the protection of the Antarctic environment and its dependent and associated ecosystems aimed at ensuring that human activity does not have adverse impacts on the Antarctic environment or its dependent or associated ecosystems or compromise the scientific, aesthetic or wilderness values of Antarctica.

2. To contribute to this objective, a Special Antarctic Treaty Consultative Meeting be held in 1990 to explore and discuss all proposals relating to the comprehensive protection of the Antarctic environment and its dependent and associated ecosystems.

3. In addressing the requirements of such a comprehensive system, they:

(a) have regard to the principles for the protection of the Antarctic environment and its dependent and associated ecosystems already established under the Antarctic Treaty system and shall consider the need to elaborate further, expand and supplement those principles;

(b) review the existing body of measures for the protection of the Antarctic environment and its dependent and associated ecosystems in order, inter alia, to:

(i) identify those measures which should be updated, strengthened or otherwise improved;

(ii) identify areas where the existing measures should be supplemented;

(iii) consider the nature of the legal obligations contained in existing measures and the need, as necessary, to state those obligations with greater precision;

(iv) make provision for the promotion of research related to environmental management decisions;

(v) promote the establishment of procedures for assessing the possible impact of human activities on the Antarctic environment and its dependent and associated ecosystems in order to provide for informed decision-making as to their acceptability;

(vi) promote the establishment of procedures to monitor the effectiveness and adequacy of environmental protection measures;

(vii) consider the role of an information and data base for the effective implementation, revision and extension of environmental protection measures;

(c) consider if and to what extent institutional arrangements may be necessary and the form or forms of the legal or other measures needed to ensure the maintenance, integration, consistency and comprehensiveness of the system of protection of the Antarctic environment and its dependent and associated ecosystems.

XV - 2

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS

The Representatives,

Recalling the adoption on 2 June 1988, by the Fourth Special Antarctic Treaty Consultative Meeting on Antarctic Mineral Resources of the Convention on the Regulation of Antarctic Mineral Resource Activities and the importance of the issue of liability;

Recommend to their Governments that:

A meeting be held in 1990 to explore and discuss all proposals relating to Article 8 (7) of the Convention on the Regulation of Antarctic Mineral Resource Activities.

XV - 3

HUMAN IMPACT ON THE ANTARCTIC ENVIRONMENT:

WASTE DISPOSAL

The Representatives,

Recalling Article II of the Antarctic Treaty and Recommendations VI-4, VIII-11, XII-4, and XIII-4;

Reaffirming the commitment of Consultative Parties to take measures to reduce the amount of wastes generated in Antarctica and to minimize the impact of wastes on the Antarctic environment, giving due consideration to the need to avoid detrimental effects on dependent or associated ecosystems outside the Antarctic Treaty Area;

Recognizing that the Antarctic derives much of its scientific importance from its uncontaminated condition;

Recognizing further that the support of science has an impact on the Antarctic environment which it is impractical to eliminate completely, but which, by good management can be limited;

Noting that the increasing level and complexity of Antarctic operations have increased the quantity and variety of wastes produced, but that improvements in logistics and technology have increased the capacity to minimize wastes and their environmental impacts;

Recognizing further that different environments, scales of operation, and logistic infrastructures will require different approaches to waste management, and that further technical developments can be expected to provide new solutions to waste management problems;

Noting with appreciation the work of the Scientific Committee on Antarctic Research (SCAR) in response to Recommendation XIII-4, which invited National Antarctic Committees to undertake a comprehensive review of the waste disposal aspects of the Annex to Recommendation VIII-11, and to offer scientific advice regarding waste disposal procedures and standards that it is desirable and practical to achieve at coastal and inland stations and field camps;

Desiring to revise the waste disposal aspects of the Code of Conduct annexed to Recommendation VIII-11 to take account of the recommendations of SCAR;

Recommend to their Governments that they adopt the following practices and take measures within their competence necessary to ensure compliance with them;

General obligation

1. The amount of wastes produced, or disposed of, in Antarctica shall be reduced to the maximum extent possible so as to minimize impact on the Antarctic environment and minimize interference with scientific research, or other legitimate uses of the Antarctic.

Waste Management Planning

2. Each Government carrying out Antarctic activities shall establish a waste disposal classification as a basis for recording wastes and to facilitate studies aimed at evaluating the environmental impacts of operational and scientific activity. Wastes produced may be classified as sewage and domestic liquid wastes (Group 1); other liquid wastes and chemicals, including fuels and lubricants (Group 2); solids to be combusted (Group 3); other solid wastes (Group 4); and radioactive materials (Group 5). Source classification codes, which represent individual processes or functions logically associated with points of waste creation, may be used in auditing studies.

3. Each Government carrying out Antarctic activities shall, in respect of those activities, prepare and annually update:

(a) plans for waste management (including waste reduction, storage and disposal), specifying for each fixed site, for field camps generally, and for each vessel (other than small boats that are part of the operations of fixed sites or of vessels);

(i) programs for cleaning up existing waste disposal sites and abandoned work sites;

(ii) current and planned waste management arrangements;

(iii) current and planned arrangements for analyzing the environmental effects of Antarctic waste and waste management systems; and

(iv) other efforts to minimize any environmental effects of wastes and waste management.

(b) an inventory of locations of past activities (such as traverses, fuel depots, field bases, crashed aircraft) as far as is practicable, before the information is lost, so that such locations can be

taken into account in planning future scientific programs (e.g. snow chemistry, pollutants in lichens, ice core drilling etc.).

4. Each Government carrying out Antarctic activities shall include the waste management plans referred to in paragraph 3 (a) above in the annual exchanges of information in accordance with Article III and VII of the Antarctic Treaty and related Recommendations under Article IX of the Treaty. The formats of such exchanges shall be determined by each Government pending development of standardized formats. They shall also exchange the inventories referred to paragraphs 3 (b) above.

5. Each Government carrying out Antarctic activities shall ensure that its national Antarctic operators designate a waste management official to develop and monitor waste management plans. In the field, this responsibility shall be delegated to an appropriate person at each site.

6. Those carrying out activities in Antarctica shall ensure that members of their expeditions receive training designed to limit the impact of their operations on the Antarctic environment and to inform them of required practices.

7. Pesticides, polychlorinated byphenyls (PCBs), non-sterile soil or polystyrene beads, chips or similar forms of packaging shall not be sent to the Antarctic. The use of poly-vinyl chloride (PVC) products in packaging shall be discouraged.

8. Those carrying out activities in Antarctica shall ensure that their expeditions to Antarctica are advised of any PVC products being provided.

9. Each Government shall establish a long-term program to remove existing abandoned fuel drums and fuel, where such removal is practical. Such programs shall identify for clean up at the first opportunity those drum sites where the transport equipment which delivered the drums is no longer available in the same area.

10. Waste compaction, storage and incineration facilities shall be incorporated in the design and construction of ships engaged in or supporting Antarctic programs.

Waste Disposal

11. The following wastes shall be removed from the Antarctic Treaty area:

(a) radio-active materials;

(b) electrical batteries (including lead/acid, dry cell and other types);

(c) fuel, both liquid and solid; and

(d) wastes containing high levels of heavy metals or harmful persistent compounds.

12. The following wastes shall be removed from the Antarctic Treaty area unless they are incinerated in equipment which neutralizes the harmful emissions that would otherwise be produced:

(a) poly-vinyl chloride (PVC), polyurethane foam, polystyrene foam, rubber and lubricating oils which contain additives that are widely recognized as products that could produce harmful emissions;

(b) all other plastic wastes, including those of unknown composition.

13. The following wastes shall be removed from the Antarctic Treaty area to the maximum extent practicable:

(a) liquid wastes, other than sewage and domestic liquid wastes;

(b) solid, non-combustible wastes; and

(c) fuel drums.

14. The following wastes shall be removed from Antarctic Treaty area unless incinerated, autoclaved or otherwise treated to be made sterile:

(a) residues of introduced animal carcasses;

(b) cultures of micro-organisms; and

(c) introduced avian products.

15. Combustible wastes, not removed from the Antarctic Treaty area, shall be burnt in incinerators designed to reduce harmful emissions to the maximum extent practicable.

16. All open burning of wastes shall be phased out. Pending the completion of such phase-out, when it is necessary to dispose of wastes by open burning:

(a) allowance shall be made for the wind and the type of wastes to be burnt to limit, as far as practicable, particulate deposition on land and to avoid such deposition over sensitive areas; and

(b) wastes to be burnt shall be stored in such a way as to prevent their dispersal by wind, or access and dispersal by scavengers.

17. All wastes to be removed from the Antarctic Treaty area, or otherwise disposed of, shall be stored in such a way as to prevent their dispersal by wind or access and dispersal by scavengers.

18. Solid non-combustible wastes, which cannot be removed to land disposal sites outside the Antarctic Treaty area and which are to be disposed of at sea, shall only be disposed of at selected dump sites in deep waters, within or outside the Antarctic Treaty area and only in accordance with the International Convention for the Prevention of Marine Pollution by the Dumping of Wastes and other Matter (London Dumping Convention), as well as any other relevant international agreements.

19. Dumping of any other wastes at sea shall be carried out in accordance with the London Dumping Convention.

20. Sewage, chemical wastes and, to the maximum extent practicable, domestic liquid wastes shall not be disposed of onto ice free land. Sewage and domestic liquid wastes may be discharged directly into the ocean, provided that:

(a) such discharge be located, wherever practicable, where conditions exist for rapid dispersal;

(b) large quantities of such wastes (generated by approximately 30 individuals or more), receive at least primary treatment, such as maceration; and

(c) consideration be given to the advantages of treating very large quantities through systems, such as Rotating Biological Contractor Systems, to reduce biological oxygen demand (BOD) and suspended solids.

21. Vessels engaged in supporting Antarctic activities that are not fitted with incinerator facilities shall, to the maximum extent practicable, stockpile waste, excluding untreated sewage and domestic effluents, for appropriate disposal at stations, bases, deep waters sites or outside of the Antarctic Treaty area, provided that such wastes may be disposed of at stations or bases in Antarctica only in accordance with these practices, and at sea only in accordance with relevant Antarctic Treaty recommendations, the London Dumping Convention and any other relevant international agreements. Any incineration of ship-board wastes in the Antarctic Treaty area shall be conducted in incinerators of the type which are designed to reduced harmful emissions to the maximum extent practicable.

22. Those carrying out activities in Antarctica shall to the maximum extent practicable clean up the waste disposal sites and abandoned work sites of their Antarctic activities.

23. Wastes generated at inland stations shall be removed from the area of such stations to the maximum extent practicable

for disposal in accordance with the practices set out in this Recommendation. Where this is not practicable, such wastes shall be concentrated in deep ice pits. In planning the location of inland stations where deep ice pits are the only practicable alternative, sites on known ice flow lines which terminate at ice-free areas or in areas of high ablation shall be avoided.

24. Wherever practicable, wastes generated at field camps shall be removed to their supporting stations, bases or ships for disposal in accordance with the practices set out in this Recommendation.

Procedures

25. These practices shall be kept under continuing review so as to ensure that they are up-dated as necessary to reflect improvements in waste disposal technology and procedures and to ensure maximum protection of the Antarctic environment. To this end it would be desirable for SCAR and the Managers of National Antarctic Programs to continue to consider problems, prospects and opportunities for cooperation in Antarctic waste management and to provide advice on appropriate steps that may be taken.

26. Governments should ensure that their nationals and vessels are subject to measures governing waste disposal in Antarctica that are no less effective in affording protection of the environment than those applicable to their nationals and vessels outside Antarctica. Further, nothing in these practices shall be interpreted as replacing national environmental standards applicable to Antarctic activities, where such standards are stricter than those contained in these practices; nor shall any provision in these practices be interpreted as limiting governments from adopting stricter standards.

27. These practices shall not be interpreted or implemented in such fashion as to endanger human life.

XV - 4

HUMAN IMPACT ON THE ANTARCTIC ENVIRONMENT:

PREVENTION, CONTROL, AND RESPONSE TO MARINE POLLUTION

The Representatives,

Recalling Recommendations IX-6 and X-7 on oil contamination of the Antarctic marine environment;

Recognizing the special characteristics of the Antarctic Treaty area and the particularly hazardous nature of the area for vessel operations;

Recognizing further that the Antarctic derives much of its scientific importance from its uncontaminated condition;

Reaffirming their commitment to the avoidance and reduction of the contamination of the sea by oil and other pollutants;

Noting the framework provided by the 1982 United Nations Convention on the Law of the Sea in its Part XII and other relevant international agreements for the protection and preservation of the marine environment;

Bearing in mind the need to take measures relating to the design, construction, manning, and equipment of vessels engaged in or supporting Antarctic operations to avoid marine pollution from vessels;

Recognizing further the importance of the expeditious exchange of information on weather and ice conditions in the Antarctic Treaty area and with respect to accidents and emergency response efforts;

Mindful of the need for accurate and up-to-date charting of the Antarctic Treaty area; and

Acknowledging the value of cooperation directly and through appropriate international organizations in efforts to avoid and respond to marine pollution incidents;

Recommend to their Governments that:

1. They approve and take measures within their competence necessary to ensure compliance with:

(a) a prohibition within the Antarctic Treaty area on all intentional discharges, including oil, from vessels into the marine environment;

(b) a prohibition within the Antarctic Treaty area on disposal from vessels into the marine environment of

all plastics and garbage other than food wastes, provided that disposal of food wastes should be made as far as practicable from land, but in no event within 12 nautical miles of land or ice shelves; and

(c) a prohibition within the Antarctic Treaty area on discharge of sewage from vessels within 12 nautical miles of land or ice shelves.

In implementing these provisions, they give due consideration to the need to avoid detrimental effects on dependent or associated ecosystems outside the Antarctic Treaty area.

2. They take measures within their competence necessary to ensure compliance by all their vessels engaged in or supporting Antarctic operations with the relevant provisions of the following conventions:

(a) the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Dumping Convention);

(b) the International Convention for the Prevention of Pollution from Ships, 1973, and the Protocol of 1978 relating thereto, with Annexes, I, II, III, and V (MARPOL 73/78);

(c) the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers with Annex, 1978, (the STCW Convention);

(d) the International Convention for the Safety of Life at Sea, 1974, and the Protocol of 1978 relating thereto (SOLAS);

(e) the International Convention on Load Lines, 1966 (the Load Lines Convention); and

(f) the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS).

3. When such vessels are warships, naval auxiliaries or other state-owned or state-operated vessels used, for the time being, only on government non-commercial service, they shall take appropriate measures, not impairing operations or operational capabilities of such vessels, to ensure that they act in a manner consistent so far as is reasonable and practicable with these provisions.

4. If they are not parties, they become parties to the conventions listed in paragraph 2 (a)-(f).

5. Those that are parties to MARPOL 73/78 consider taking actions within the International Maritime Organization (IMO) to secure designation of the waters south of 60 degrees

South Latitude as a special area under Annexes I and V of that Convention, provided that the establishment of reception facilities otherwise called for in these Annexes not be considered either necessary or desirable in the Antarctic Treaty area.

6. They establish contingency plans for marine pollution response in Antarctica, including contingency plans for vessels operating in the Antarctic Treaty area, particularly vessels carrying oil. To this end they shall:

(a) cooperate in the formulation and implementation of such plans and in responding to pollution emergencies in Antarctica; and

(b) draw on the advice of the IMO and other international organizations, as appropriate.

7. They convene, in accordance with Recommendation IV-24, a meeting of experts to consider and provide advice on the establishment of contingency plans for marine pollution response and additional requirements to reduce and prevent pollution of the Antarctic marine environment, giving due consideration to the need to avoid detrimental effects on dependent and associated ecosystems outside the Antarctic Treaty area.

8. They keep under continuing review measures to reduce and prevent pollution of the Antarctic marine environment.

XV - 5

HUMAN IMPACT ON THE ANTARCTIC ENVIRONMENT:

ENVIRONMENTAL MONITORING IN ANTARCTICA

The Representatives,

Recognizing that, because of its relatively pristine state, Antarctica provides an important natural laboratory to obtain baseline information on Antarctic environments and for detecting and monitoring some of the effects of human activities on the global environments and eccsystems upon which the welfare and survival of the human species depend;

Recognizing also that scientific research, related logistic support activities, tourism, natural resources exploration and development, and other human activities in Antarctica could have local, regional or global environmental effects, or compromise the scientific value of Antarctica;

Recalling the Scientific Committee on Antarctic Research (SCAR) response to Recommendation XII-3 and Recommendation XIV-2, which call upon the Antarctic Treaty Consultative Parties to establish programs for detecting and monitoring the effects of human activities on key components of Antarctic ecosystems;

Conscious that determining cause-effect relationships between certain human activities and observed changes in Antarctic environments will require knowledge of natural variation in Antarctic environments and accurate records of such things as the types and quantities of fuels used to supply heat and light to Antarctic stations and to operate aircraft and land vehicles in Antarctica;

Aware of the ecosystem monitoring program being developed to help meet the objectives of the Convention on the Conservation of Antarctic Marine Living Resources;

Desiring to identify and initiate cooperative, long-term monitoring programs necessary to verify the predicted effects and to detect and quantify the possible unforeseen effects of human activities on the Antarctic environment; and

Recognizing that the design and implementation of integrated, comprehensive, and cost-effective environmental monitoring programs in Antarctica serve both scientific and environmental protection purposes;

Recommend to their Governments that:

1. They encourage their national Antarctic programs, individually and collectively, to continue and, as appropriate, expand programs in Antarctica aimed at detecting and monitoring global environmental change, including its effects on the ozone layer over Antarctica, effects on Antarctic terrestrial, marine, and atmospheric environments and dependent and associated ecosystems as well as effects on Antarctic living resources.

2. They undertake, individually and collectively, to establish environmental monitoring programs to verify the predicted effects and to detect the possible unforeseen effects on Antarctic environments and living resources of activities in the Antarctic Treaty area, including:

(a) waste disposal;

(b) contamination by oil or other hazardous or toxic substances;

(c) construction and operation of stations, field camps, and related ship, aircraft and other logistic support facilities;

(d) conduct of science programs;

(e) recreational activities, and

(f) those affecting the purposes of designated protected areas.

3. They take such steps as necessary to maintain accurate records of the activities of their national programs in Antarctica, including, among other things, maintaining accurate records of the types and quantities of fuels and other materials transported to and used to support their national programs in Antarctica, the types and quantities of materials subsequently removed from Antarctica, and the types and quantities of materials disposed of in Antarctica by various means, bearing in mind Recommendation XV-3.

4. They convene, in accordance with Recommendation IV-24, a meeting of experts to consider and provide advice on:

(a) The types of cooperative, long-term monitoring programs that would be useful for detecting, quantifying, monitoring, and determining the likely causes of observed changes in air quality, snow and water quality, and other key features of Antarctic environments and living resources;

(b) on the methods that should be used to collect, report, store, exchange, and analyze needed data; and

(c) on where and how frequently various environmental parameters should be measured.

To this end, they invite SCAR through their national committees, to consider and provide advice on the above matters.

5. They exchange information and establish cooperative working relations with those Specialized Agencies of the United Nations and other international organizations having a scientific or technical interest in Antarctica that are engaged in the planning and implementation of related scientific research and environmental monitoring programs.

XV - 6

ANTARCTIC PROTECTED AREA SYSTEM:

NEW SITES OF SPECIAL SCIENTIFIC INTEREST

The Representatives,

Recalling, Recommendations VIII-3 and VIII-4;

Noting that management plans have been prepared and approved by the Scientific Committee on Antarctic Research (SCAR) for certain Sites of Special Scientific Interest additional to those already designated;

Considering that it would be advantageous to gather experience of the practical effect of the management plans prepared for these sites;

Recommend to their Governments that they voluntarily take account of the management plans, annexed to this Recommendation, for the following sites:

Site No 29: Ablation Point-Ganymede Heights, Alexander Island.

Site No 30: Avian Island, North-West Marguerite Bay.

Site No 31: Mount Flora, Hope Bay, Antarctic Peninsula.

ANNEX TO RECOMMENDATION XV-6

SITE OF SPECIAL SCIENTIFIC INTEREST No 29
ABLATION POINT-GANYMEDE HEIGHTS, ALEXANDER ISLAND

1. GEOGRAPHICAL LOCATION

The Ablation Valley-Ganymede Heights massif and its valley systems (70°49'S, 68°25' W) is situated on the mid-east coast of Alexander Island overlooking the shelf ice of George VI Sound and about 120 km from open sea to the north.

2. MANAGEMENT PLAN

(i) Description of site

The Site extends from lat. 70°45' to lat.70°55' and from long. 68°40'W to the George VI Sound coastline.

The largely ice-free area comprises three main and two lesser valley systems separated by often precipitous ridges and plateaux 650-760 m high. The site is bounded by Grotto Glacier to the north, Jupiter Glacier to the south and west, and George VI Sound to the east. The area extends 18 km from north to south and 10 km from east to west, rising to a maximum altitude of 1070 m.

(ii) Reason for designation

The Site represents one of the largest ablation areas in West Antarctica. It has a complex geology, the main rock types being conglomerates, arkosic sandstones and shales with subordinate pebbly mudstones and sedimentary breccias. The base of the succession is formed of a spectacular melange, including large blocks of lava and agglomerate. This outcrops on the valley floors and at the base of several cliffs. It possesses a wide range of geomorphological features including raised beaches, moraine systems and patterned ground. There are several permanently frozen freshwater lakes and many ice-free ponds supporting a diverse flora (including aquatic briophytes) and fauna. There are a few major streams and many smaller ones in summer. The vegetation is generally sparse, with a unique moss and liverwort-dominated community type being restricted to "oases" where water issues from otherwise dry barren hillsides. The terrestrial and freshwater ecosystems are vulnerable to human impact and therefore merit protection from uncontrolled human presence.

(iii) Outline of research

Several detailed geological, geomorphological, glaciological and limnological studies have been made by British Antarctic Survey scientists within the Site and it is proposed to undertake terrestrial ecological research throughout the area.

(iv) Date of expiry of designation

31 December 1999

(v) Access points

None specified, but the most convenient point is by landing on Ablation Lake. Access is not possible from the shelf ice of Georges VI Sound because of the dangerous and variable condition of the pressure ice.

(vi) Pedestrian and vehicular routes

Vehicles may be used on land with the utmost care, avoiding areas of vegetation, patterned ground and streams whenever possible. Pedestrians should avoid, as far as possible, areas of oasis vegetation, patterned ground, streams and lake margins.

(vii) Other kinds of scientific investigations which would not cause harmful interference

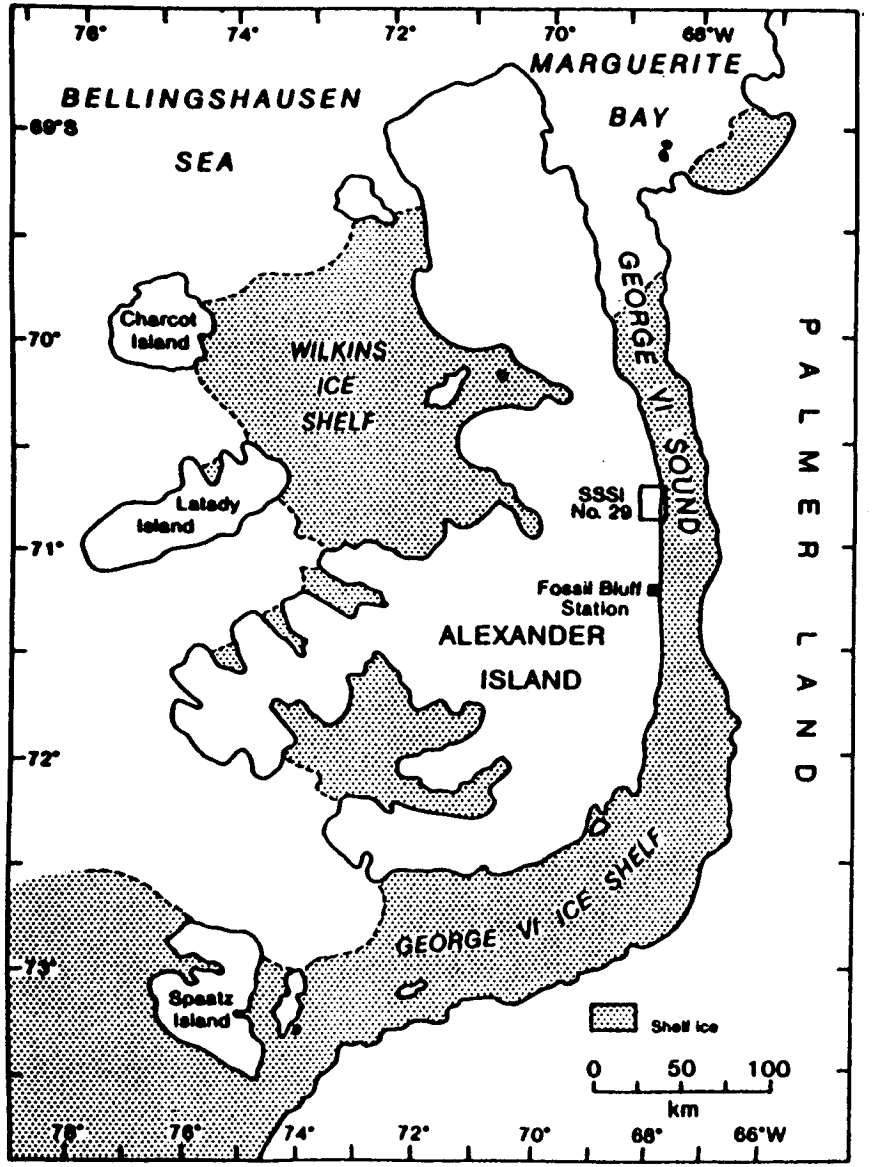
None specified.

(viii) Scientific sampling

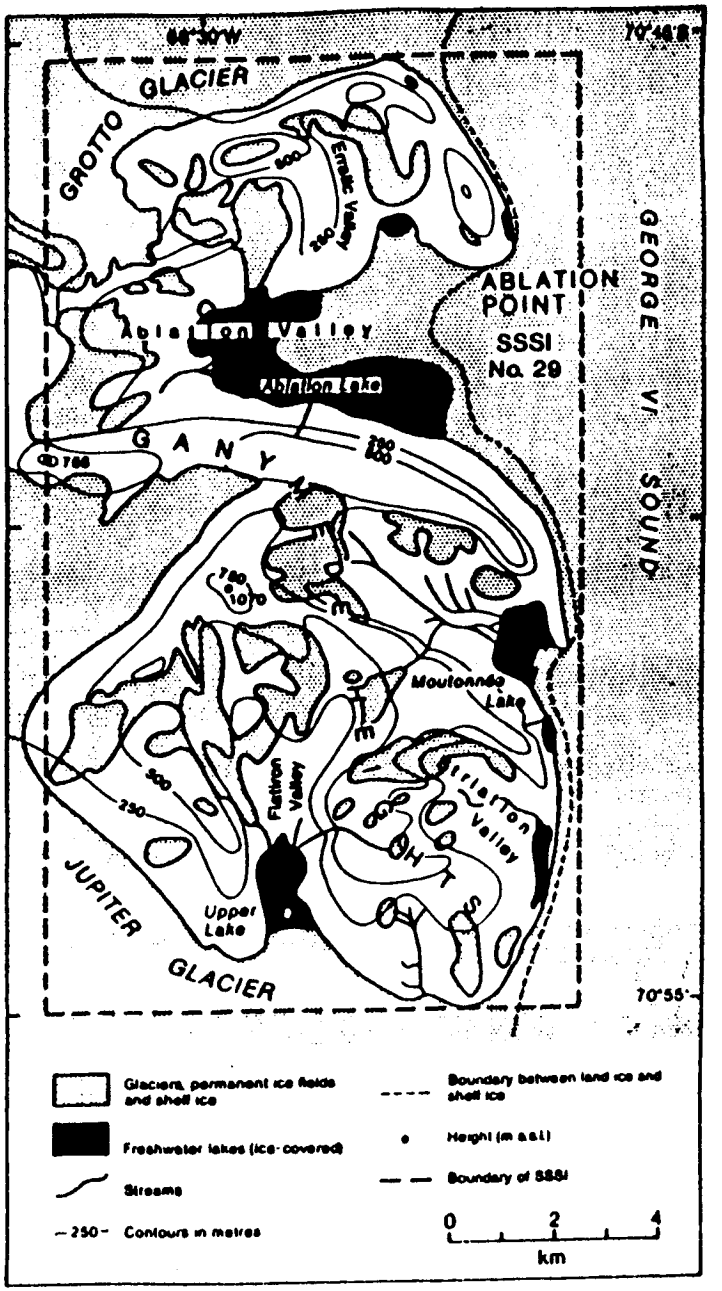
Scientific sampling within the Site should be minimal and restricted to that which can be accomplished as far as possible without introducing new organisms, including micro-organisms, and without disturbing the environment.

(ix) Other restraints

All materials, including combustibles, introduced into the Site should be removed after each visit. Solid human waste should be disposed of into the sea through tide cracks.



SITE OF SPECIAL SCIENTIFIC INTEREST No 29



SITE OF SPECIAL SCIENTIFIC INTEREST No. 30
AVIAN ISLAND, NORTH-WEST MARGUERITE BAY

1. GEOGRAPHICAL LOCATION

Avian Island (67°46'S0., 68°54'W.) lies c. 1 km south of the south-west tip of Adelaide Island in north-west Marguerite Bay;

2. MANAGEMENT PLAN

(i) Description of site

The Site consists of Avian Island together with its littoral zone. It is 1.45 km long by 0.8 km at its widest, and rises to about 45 m altitude. It is largely ice-free in summer and there are several shallow melt pools, the largest being on the eastern raised beach area. Excluded from the Site is the north-western corner of the island where there is a small refuge hut; this area is bounded by a line extending from the north-east end of the southern of two long inlets at the north-west of the island, due north over the western slope of a low rocky hill, to the north coast of the island. All land to the west of this line is not included in the Site.

(ii) Reason for designation

The Site is exceptional for its abundance and diversity of breeding seabirds (e.g. Adelie penguins, Pygoscelis adeliae, about 40,000 pairs; blue-eyed shags, Phalacrocorax atriceps, about 300 pairs; southern giant petrels, Macronectes giganteus, about 200 pairs; Dominican gulls, Larus dominicanus, about 60 breeding pairs, total adult birds about 200; south polar skuas, Catharacta maccormicki, 30 breeding pairs, total adult birds about 200; Wilson's storm petrels, Oceanites oceanicus, several hundred pairs). The giant petrel colony is the farthest south known breeding population, while the blue-eyed shags are very close to the southern limit of their breeding range. Avian Island is therefore of outstanding ornithological importance and merits protection from unnecessary human disturbance.

(iii) Outline of research

None currently proposed but protection is justified to safeguard the avian populations from potential tourist visits and other disturbance, for the reasons outlined in (ii).

(iv) Date of expiry of designation

31 December 1999.

(v) Access points

None specified

(vi) Pedestrian and vehicular routes

Vehicles should not be used within the Site. No pedestrian routes need to be marked, but every care must be taken to avoid unnecessary disturbance of the avifauna. No helicopter landings should be made anywhere on the island.

(vii) Other kind of scientific investigations which would not cause harmful interference

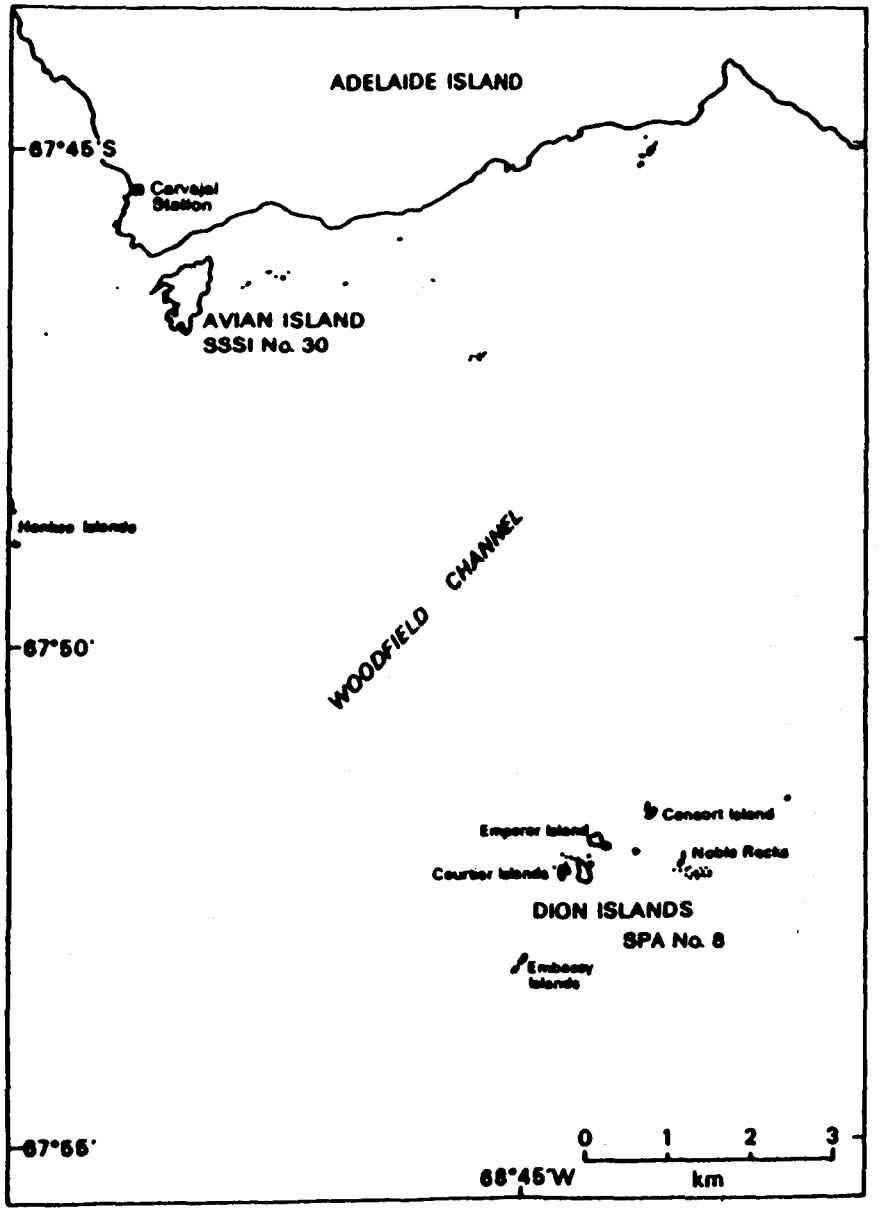
None specified.

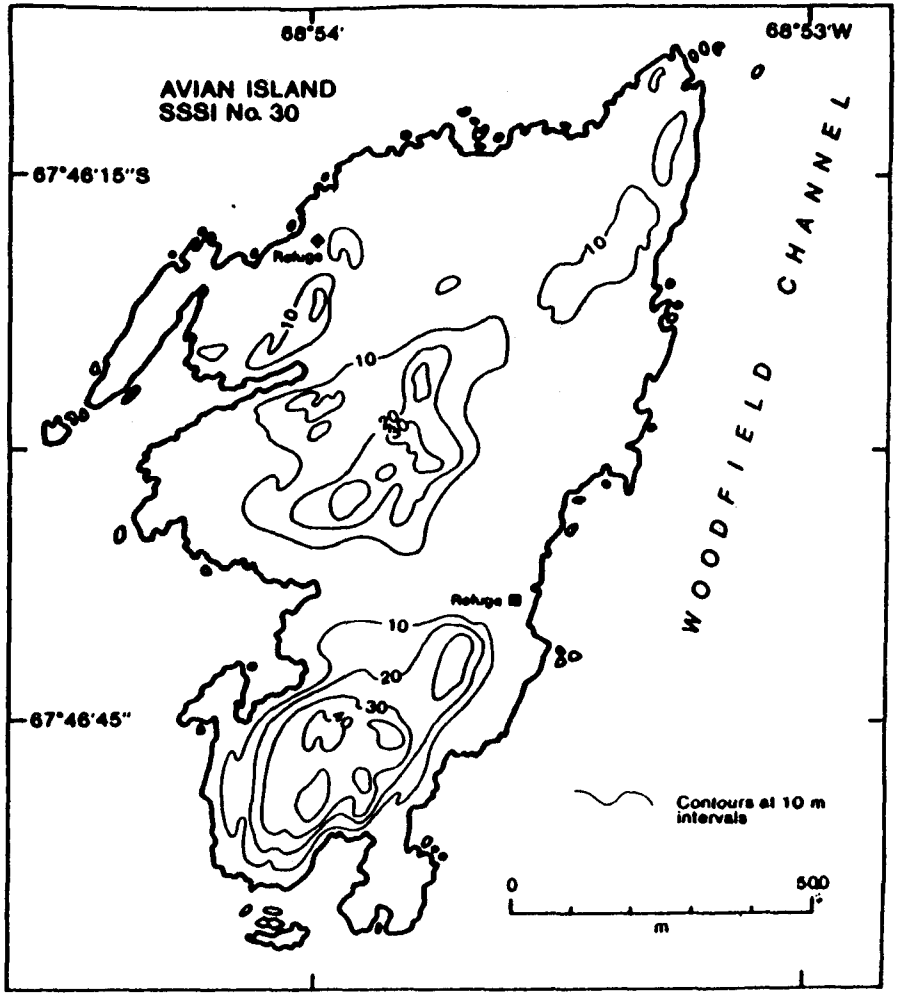
(viii) Scientific sampling

All activities involving banding, capture, killing, etc. of any birds must conform with the Agreed Measures for the Conservation of Antarctic Fauna and Flora. Any other sampling should be restricted to the minimum required for the purpose of the respective studies.

(ix) Other restraints

None specified.





SITE OF SPECIAL SCIENTIFIC INTEREST No 30

SITE OF SPECIAL SCIENTIFIC INTEREST No. 31
MOUNT FLORA, HOPE BAY, ANTARCTIC PENINSULA

1. GEOGRAPHICAL LOCATION

Mount Flora (63°25'S, 57°01' W) is situated about 1km south of Hope Bay and about 1 km south-east of the Argentine station Esperanza, at the northern tip of Trinity Peninsula.

2. MANAGEMENT PLAN

(i) Description of site

The Site comprises the upper slopes of Mount. Flora above 250 m altitude where the plant-beds of sandstone and siltstone outcrops as a distinct black band between the lower band of conglomerates and light colored volcanic rocks which cap the mountain.

(ii) Reason for designation

The Site is of exceptional scientific importance for its rich fossil flora. It was one of the first fossil floras discovered in Antarctica and has played a significant stratigraphic role in deducing the geological history of the Antarctic Peninsula. Its long history as an easily accessible site and the large amount of fossilferous debris occurring in scree has made it vulnerable to souvenir collectors, and the amount of material available for serious research has been considerably depleted. For this reason the Site merits urgent protection.

(iii) Outline of research

None specified. Designation as an SSSI is justified by the exceptional scientific interest of the site and the vulnerability of its fossils to over collecting.

(iv) Date of expiry of designation

31 December 1999.

(v) Access points

None specified.

(vi) Pedestrian and vehicular routes

None specified.

(vii) Other kinds of scientific investigations which would not cause harmful interference.

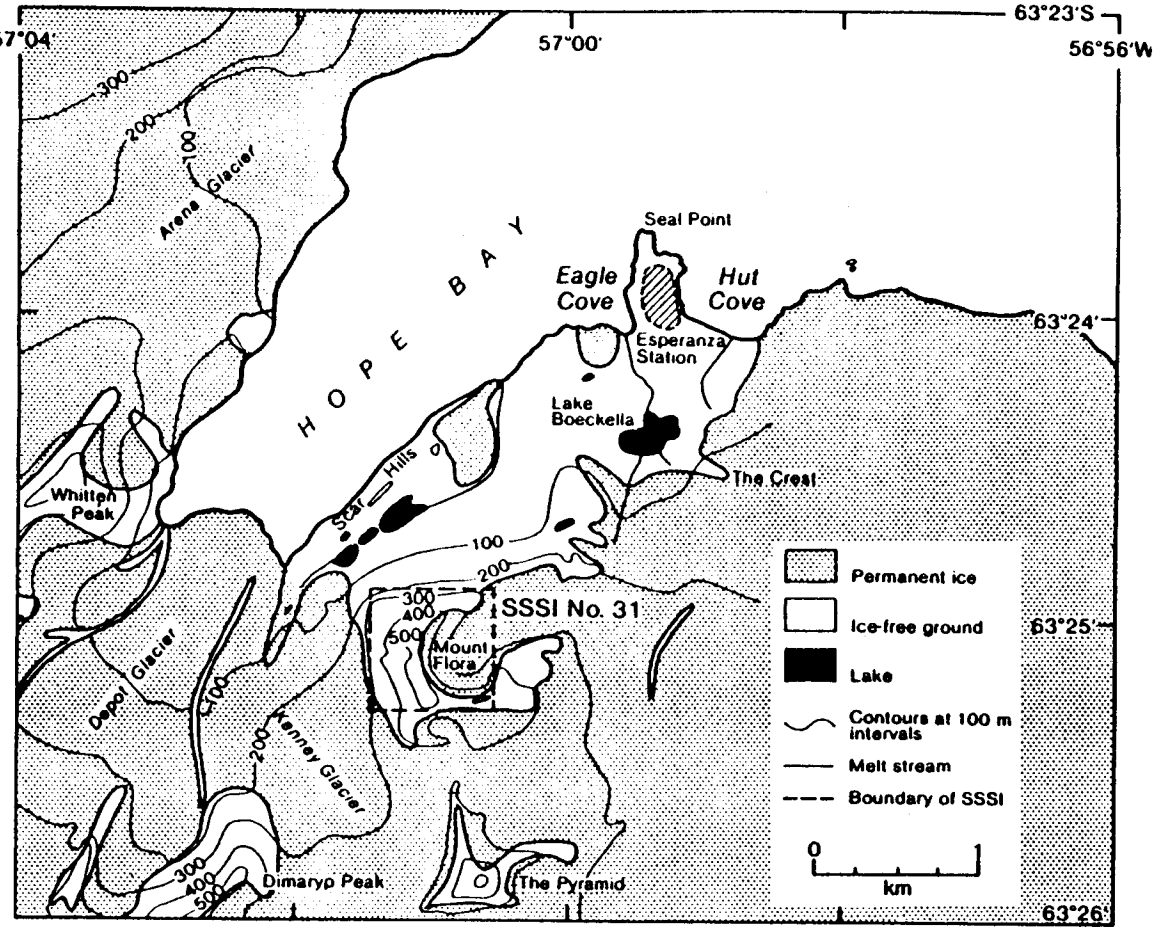
None specified

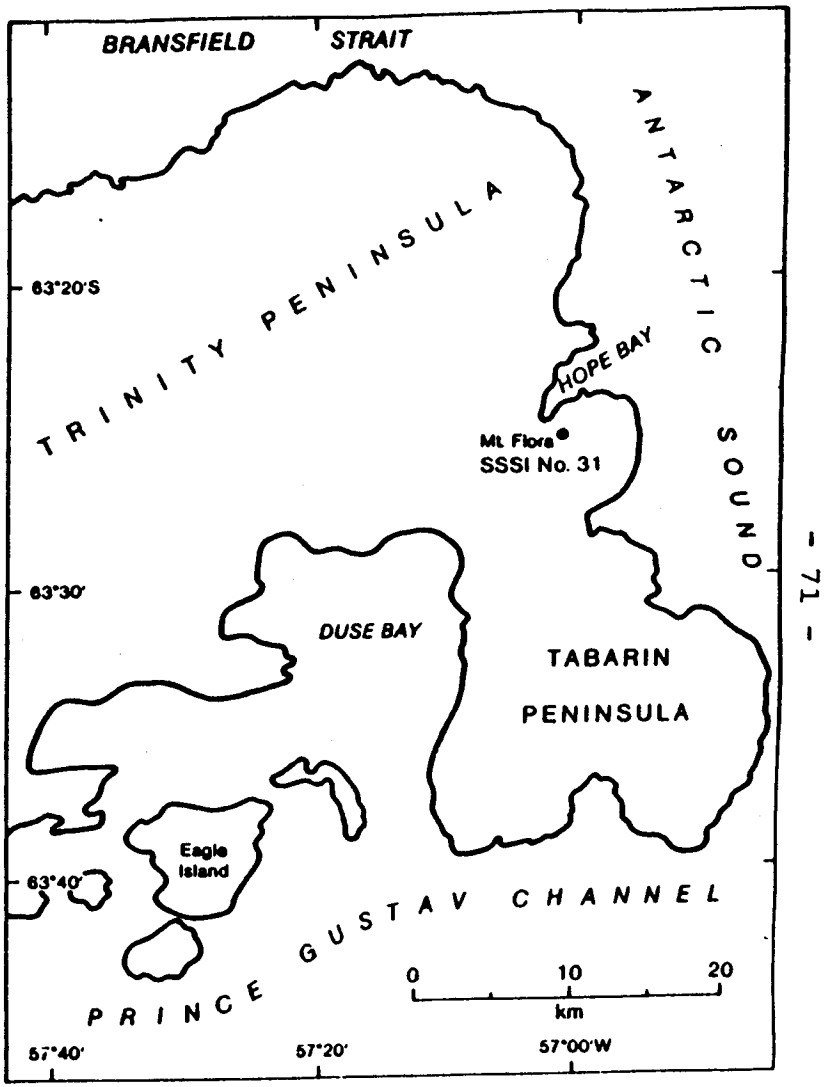
(viii) Scientific sampling

The collection of fossilferous rocks should be restricted to the minimum required for the proposed research studies. Unnecessary destruction of in situ rock and boulders should be avoided.

(ix) Other restraints

None specified.





SITE OF SPECIAL SCIENTIFIC INTEREST No 31

XV - 7

ANTARCTIC PROTECTED AREA SYSTEM:

REDESIGNATION OF SPECIALLY PROTECTED AREA, No.11 CAPE SHIRREFF, AS SITE OF SPECIAL SCIENTIFIC INTEREST No.32

The Representatives,

Recalling Recommendations III-VIII, VIII-3 and VIII4;

Conscious of the need to facilitate research into important aspects of the Antarctic marine ecosystem;

Noting that there are certain long-term research programmes involving support activities which may not be appropriately provided in a Specially Protected Area, but which need not endanger the Antarctic ecosystem or its components;

Noting further that the degree of environmental protection specified in the management plan of a Site of Special Scientific Interest need not be less than that provided in a Specially Protected Area;

Aware that a management plan for a Site of Special Scientific Interest at Cape Shirreff has been prepared and approved by the Scientific Committee on Antarctic Research (SCAR);

Recommend to their Governments that:

1. The inclusion in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora of Recommendation IV-11 (Specially Protected Areas: Cape Shirreff) be terminated.

2. The number 11 in Annex B of the Agreed Measures should not be used for another Specially Protected Area.

3. They voluntarily take account of the management plan, annexed to this Recommendation, for Site of Special Scientific Interest N°32, Cape Shirreff, Livingston Island, South Shetland Islands.

ANNEX TO RECOMMENDATION XV-7

SITE OF SPECIAL SCIENTIFIC INTEREST No. 32
CAPE SHIRREFF, LIVINGSTON ISLAND, SOUTH SHETLAND ISLANDS

1. GEOGRAPHICAL LOCATION

Cape Shirreff is a low, ice-free peninsula towards the western end of the north coast of Livingston Island, situated at latitude 62°27'S., longitude 60°47'W., between Barclay Bay and Hero Bay. Telmo Island is the largest of a small group of ice-free rock islets, approximately 2 km west of Cape Shirreff.

2. MANAGEMENT PLAN

(i) Description of site

The Site includes the entire area of the Cape Shirreff peninsula north of the glacier ice tongue margin, and most of the Telmo Island group (see map).

(ii) Reason for Designation

The presence of both Antarctic fur seal and penguin breeding colonies, and of krill fisheries within the foraging range of these species, make this a critical site for inclusion in the ecosystem monitoring network being established to help meet the objectives of the Convention on the Conservation of Antarctic Marine Living Resources. The purpose of the designation is to allow planned research and monitoring to proceed, while avoiding or reducing, to the greatest extent possible, other activities which could interfere with or affect the results of the research and monitoring programme or alter the natural features of the Site.

(iii) Outline of research

Long-term studies are being planned better to assess and monitor the feeding ecology, growth and condition, reproductive success, behavior, vital rates, and abundance of pinnipeds and seabirds that breed in the area. The results of these studies will be compared with environmental data, offshore sampling data, and fishery statistics to identify possible cause-effect relationships.

(iv) Date of expiry of designation

31 December 1999

(v) Access points

The Cape Shirreff part of the Site may be entered at any point where pinniped or seabird rookeries are not present on or near the beach. Access to the islands in the Telmo group is unrestricted but should be at the least densely populated areas and cause minimal disturbance to the fauna. Access for other than the aforementioned types of research should avoid disturbing pinnipeds and seabirds.

(vi) Pedestrian and vehicular routes

Boats, helicopters, fixed-winged aircraft and land vehicles should avoid the Site except for operations directly supporting authorized scientific activities. During these operations, boats and aircraft should travel routes that avoid or minimize disturbance of pinnipeds and seabirds. Land vehicles should not be used except to transport needed equipment and supplies to and from the field camp to be established. As far as possible, establishment and resupply of the field camp should be done before or after the pinniped and seabird breeding seasons. Pedestrians should not walk through wildlife population areas, especially during the breeding season, or disturb other fauna or flora except as necessary to conduct authorized research.

(vii) Other kinds of scientific investigations which would not cause harmful interference

Geological, glaciological, and other studies which can be done outside of the pinniped and seabird breeding seasons, and which will not damage or destroy pinniped or seabird breeding areas, or access to those areas, would not adversely affect the planned assessment and monitoring studies. Likewise, the planned assessment and monitoring studies would not be affected adversely by periodic biological surveys or studies of other species which do not result in killing, injuring or disturbing pinnipeds or seabirds, or damage or destroy pinnipeds or seabird breeding areas or access to those areas.

(viii) Scientific sampling

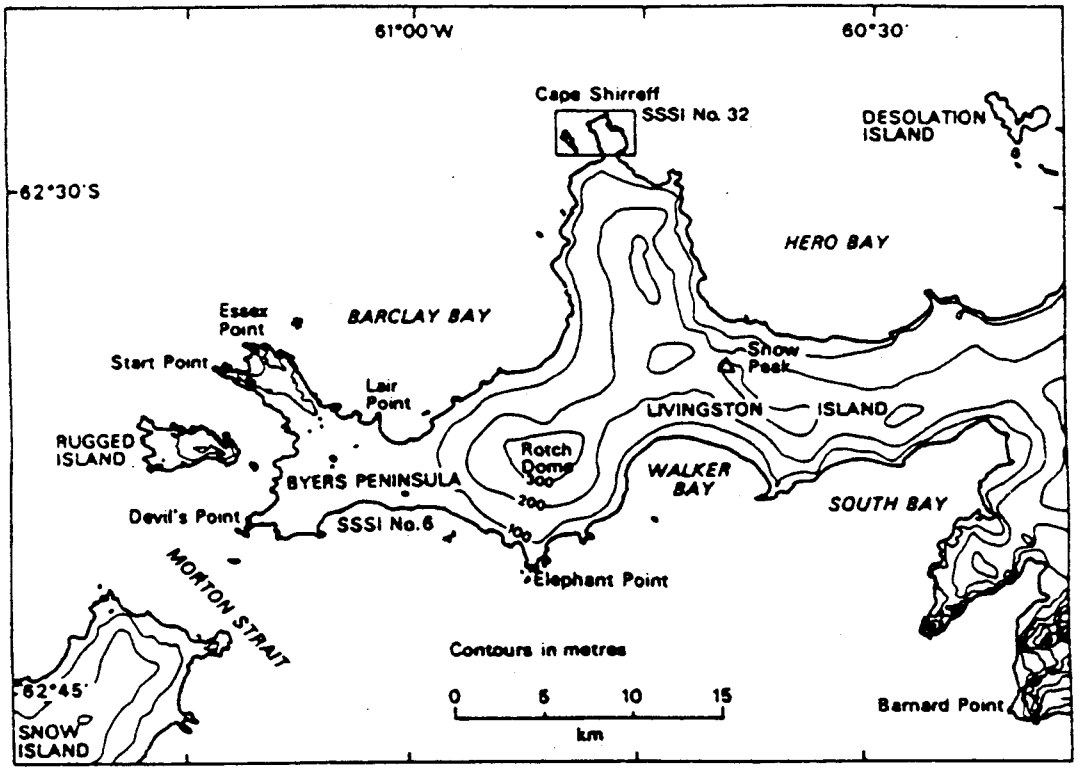
Killing, capturing, handling, photographing, and taking eggs, blood, or other biological samples from pinnipeds and seabirds should be limited to that necessary to characterize and monitor individual and population parameters that may change in detectable ways in response to changes in food availability or other environmental factors. Sampling should be done and reported in accordance with: 1) the Agreed Measures for the Conservation of Antarctic Fauna and

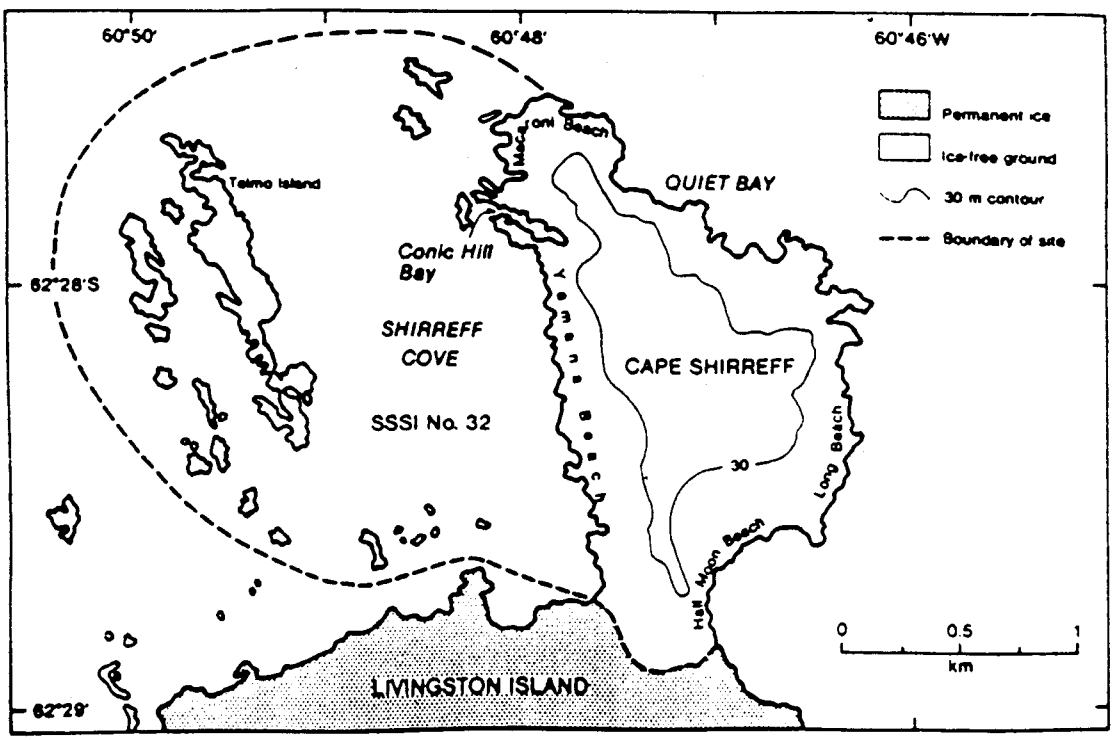
Flora, and 2) the Convention for the Conservation of Antarctic Seals.

(ix) Other restraints

(a) Only structures directly supporting authorized scientific research and monitoring programmes may be built within the Site to house research personnel and their equipment, and shall be occupied only within the period 1 September to 1 June.

(b) All non-burnable or non-biodegradable materials brought to the Site should be removed when no longer in use. Landfill disposal of non-biodegradable materials, and the burning of non-organic materials, is not permitted.


61°00'W
60°30'
Cape Shirreff
SSSI No. 32
DESOLATION ISLAND
62°30'S
HERO BAY
Essex Point
BARCLAY BAY
Start Point
Lair Point
Snow Peak
LIVINGSTON ISLAND
RUGGED ISLAND
Rotch Dome
300
200
100
BYERS PENINSULA
WALKER BAY
SOUTH BAY
Devil's Point
SSSI No.6
Elephant Point
MORTON STRAIT
Contours in metres
0 5 10 15
km
62°45'
SNOW ISLAND
Barnard Point


60°50'
60°48'
60°46'W
Permanent ice
Ice-free ground
30 m contour
Boundary of site
Telmo Island
Macaroni Beach
QUIET BAY
Conic Hill
Bay
62°28'S
SHIRREFF
COVE
CAPE SHIRREFF
SSSI No. 32
30
Long Beach
Half Moon Beach
0 0.5 1
km
LIVINGSTON ISLAND
62°29'

XV - 8

ANTARCTIC PROTECTED AREA SYSTEM:

AGREED MEASURES FOR THE CONSERVATION OF ANTARCTIC FAUNA AND FLORA: AMENDMENT TO ARTICLE VIII

(MANAGEMENT PLANS FOR SPECIALLY PROTECTED AREAS)

The Representatives,

Noting that under Article VIII of the Agreed Measures:

(i) paragraph 1 provides for designation as Specially Protected Areas, "areas of outstanding scientific interest... in order to preserve their unique natural ecological system";

(ii) paragraph 2(c) provides that entry into a Specially Protected Area is prohibited except in accordance with a permit;

(iii) paragraph 4 provides that such "a permit shall have effect within a Specially Protected Area provided that:

(a) it was issued for a compelling scientific purpose which cannot be served elsewhere; and

(b) the actions permitted thereunder will not jeopardise the natural ecological system existing in that Area";

Noting further that Recommendation VII-2 urges that representative examples of the major Antarctic land and freshwater ecological systems shall be included in the series of Specially Protected Areas;

Desiring to provide for greater certainty in the interpretation of paragraph 4 by means of the application of management plans relevant to each Specially Protected Area;

Recognising that to be fully effective such Management Plans must be accorded the same status as the conditions in subparagraphs (a) and (b) of paragraph 4;

Recommend to their Governments that:

(i) the following subparagraph be added to paragraph 4 of Article VIII:

"and (c) the actions permitted thereunder are in accordance with any Management Plan accompanying the description of a Specially Protected Area";

(ii) subparagraph (a) be amended to remove the word "and"; and

(iii) the full stop at the end of subparagraph (b) be changed to a semicolon.

XV - 9

ANTARCTIC PROTECTED AREA SYSTEM:

DEVELOPMENT OF IMPROVED DESCRIPTIONS AND MANAGEMENT PLANS FOR SPECIALLY PROTECTED AREAS

The Representatives,

Recalling that:

(a) the purpose of Specially Protected Areas is to preserve both unique and representative examples of the natural ecological systems of areas which are of outstanding scientific interest; and

(b) the appropriate national authority of Antarctic Treaty Consultative Parties may issue permits authorizing its nationals to enter Specially Protected Areas for compelling scientific purposes which cannot be served elsewhere;

Noting that the descriptions of Specially Protected Areas in Annex B of the Agreed Measures for the Conservation of Antarctic Fauna and Flora do not provide detailed descriptions of the natural ecological systems and components thereof that the Protected Areas are intended to preserve;

Noting also that the descriptions of Specially Protected Areas do not indicate the types of activities that could or could not be carried out in the designated Specially Protected Areas without harming or damaging any of the components of the natural ecological systems that the areas are intended to preserve;

Recommend to their Governments that:

1. They review the descriptions of Specially Protected Areas in Annex B of the Agreed Measures and, for those Areas which they or their nationals had proposed be listed in the Annex, they provide a more detailed description of the natural ecological system that the Area is intended to preserve and a provisional Area management plan for consideration at the XVIth Antarctic Treaty Consultative Meeting;

2. Future proposals for designating Specially Protected Areas include:

(a) a clear description of the location and the key physical and biological features of the area to be

protected, including a description of the markers and/or natural features that delineate the area;

(b) a map and/or photographs showing the boundaries and key features of the proposed Specially Protected Area;

(c) a detailed description of the key components of the unique natural ecological system intended to be preserved by designating the Area as a Specially Protected area;

(d) descriptions of the types of activities (including activities outside the Area) that could jeopardize any of the components of the unique ecological system intended to be preserved; and

(e) descriptions of steps that should be taken to avoid or minimize damage in cases where access to the area may be authorized for a compelling scientific purpose which cannot be served elsewhere;

(f) descriptions of measures necessary to ensure preservation of the area's unique or representative natural ecological systems.

3. They invite SCAR, through their national committees, to have regard to the preceding when considering proposals for Specially Protected Areas; and

4. They annually advise SCAR and the Antarctic Treaty Parties of any activities that they authorized to be conducted in Specially Protected Areas during the preceding year and that they expect to authorize in the next year.

XV - 10

THE ANTARCTIC PROTECTED AREA SYSTEM: ESTABLISHMENT OF SPECIALLY RESERVED AREAS (SRAs)

The Representatives,

Recognizing that the increasing number and scope of activities in the Antarctic Treaty area may reduce the unique scientific and other values of Antarctica;

Noting that the Agreed Measures for the Conservation of Antarctic Fauna and Flora established a mechanism to designate Specially Protected Areas to preserve the unique natural ecological systems of areas of outstanding scientific interest;

Noting also that neither the Agreed Measures nor other Recommendations adopted by the Antarctic Treaty Consultative Parties provide a specified mechanism for identifying and protecting areas of outstanding geological, glaciological, geomorphological, aesthetic, scenic, or wilderness value;

Recalling that Recommendation VII-2 calls upon the Antarctic Treaty Parties to include in the series of Specially Protected Areas listed in Annex B of the Agreed Measures:

(a) representative examples of the major Antarctic land and fresh water ecological systems;

(b) areas with unique complexes of species;

(c) areas which are the type locality or only known habitat of any plant or invertebrate species;

(d) areas which contain specially interesting breeding-colonies of birds or mammals; and

(e) areas which should be kept inviolate so that in the future they may be used for purposes of comparison with localities that have been disturbed by man;

Recommend to their Governments that:

1. They undertake a continuing review of the geographical features and uses of Antarctica and, as appropriate propose designating areas of outstanding geological, glaciological, geomorphological, aesthetic, scenic, or wilderness value as Specially Reserved Areas (SRAs).

2. Proposals for designation of Specially Reserved Areas shall be accompanied by a proposed management plan which shall include:

(a) a clear description of the location and the key features of the proposed SRA, including a description of the markers and/or natural features that delineate the area;

(b) a map and/or photographs showing the boundaries and key features of the proposed SRA;

(c) the rationale for the proposed listing;

(d) descriptions of the types of activities that could be conducted in or near the proposed SRA without jeopardizing the special values intended to be protected;

(e) descriptions of the types of activities (including activities outside the SRA) that could adversely affect the special values intended to be protected; and

(f) descriptions of steps that should be taken to minimize impacts in cases where access to the SRA is authorized;

3. In due course, they include in the series of Specially Reserved Areas representative examples of the major geological, glaciological, and geomorphical, features of Antarctica, and representative examples of areas of outstanding aesthetic, scenic, and wilderness value.

4. Entry into Specially Reserved Areas be prohibited, except for the purposes authorized in the approved management plan for the area or in accordance with a permit issued by the appropriate national authority for a compelling scientific purpose which cannot be served elsewhere, and which will not adversely affect the natural features intended to be protected by the SRA.

5. They invite SCAR, through their national committees, the Commission for the Conservation of Antarctic Marine Living Resources, and, as appropriate, other components of the Antarctic Treaty system to review and comment on proposals before they are considered by the Consultative Parties.

6. They annually advise SCAR and each other of activities that they authorized to be conducted in Specially Reserved Areas during the preceding year, and that they expect to authorize in the following year.

XV - 11

ANTARCTIC PROTECTED AREA SYSTEM:

ESTABLISHMENT OF MULTIPLE-USE PLANNING AREAS (MPAs)

The Representatives,

Desiring to protect and maintain the unique biological, geological, glaciological, geomorphological, ecological, scientific, historic, aesthetic, scenic and wilderness values of Antarctica;

Recalling Recommendation XIII-5 inviting the Scientific Committee on Antarctic Research (SCAR) to offer advice on the system of protected areas in the Antarctic;

Noting that SCAR's response to Recommendation XIII-5, provided in its report "The Protected Area System in the Antarctic", recommended among other things that the Antarctic Treaty Consultative Parties create an additional category of protected area where coordinated management of activities would minimize harmful environmental impacts so as not to detract from the values for which the area was designated;

Recalling the importance of preserving the freedom of scientific research guaranteed by the Antarctic Treaty;

Recommend to their Governments that:

1. They take cooperative action to ensure that ongoing and planned human activities in Antarctica, through their combined or cumulative effects, do not result in mutual interference or in adverse impacts upon the Antarctic environment.

2. As one means to this end, they designate, where appropriate, Multiple-Use Planning Areas (MPAs) to assist in coordinating human activities in those areas where such activities pose identified risks of mutual interference or cumulative environmental impacts.

3. The number and size of MPAs be kept to the minimum necessary to meet the objectives set forth in paragraphs 1 and 2.

4. Each Multiple-use Planning Area shall be designated pursuant to a management plan developed through consultations, as appropriate, among interested Parties and approved by the

Antarctic Treaty Consultative Parties. Such plan shall, as appropriate, include:

(a) a description of the purposes and objectives of the management plan;

(b) a description of the area to which its provisions apply;

(c) a description of ongoing and planned human activities, including the operation of research stations and related logistics activities;

(d) identification of any Specially Protected Areas (SPAs), Sites of Special Scientific Interest (SSSIs), Specially Reserved Areas (SRAs), and Historic Monuments (HMs) within the MPA;

(e) a description of the environmental characteristics and features and subjects of current and planned scientific research, if any, threatened by interference by ongoing or planned human activities or their cumulative impacts;

(f) specific measures to avoid or minimize mutual interference and cumulative impacts, including where necessary measures applicable to:

(i) construction and operation of stations and related logistic support facilities;

(ii) vessel operations, including identification of areas which are unsafe for navigation, designation of safe anchorages and sea lanes or channels for safe access to stations

(iii) small boat operations, including maintenance and discharge control, and identification of areas where operations should be prohibited (except for essential research);

(iv) aircraft and helicopter operations, including designation of safe landing areas, and identification of areas where operations below a designated altitude should be prohibited;

(v) vehicle operations, including maintenance and discharge controls and identification of areas which are unsafe or unsuitable for operation;

(vi) scientific research activities, including means to ensure the availability of up-to-date information about the nature and location of ongoing or planned field work, and means to prevent disturbance of organisms or features being studied by various investigators;

(vii) visitors, including designation of areas within which access by tourists or other visitors should be limited or prohibited, and/or as areas to which such access might be directed to obtain maximum benefit from exposure to the characteristics of the area;

(viii) information, including means to ensure that all individuals present or intending to be present within the MPA, are fully aware of the provisions of the management plan, as well as other relevant measures adopted by Consultative Parties (e.g. provisions governing access to scientific stations);

(ix) notification, as far in advance as possible, by each Party of research and other activities which it or its nationals intend to carry out in the MPA,including copies of any necessary permits issued;

(x) annual reports by each Party of activities it or its nationals carried out in the MPA management plan and any instances of possible violations of the management plan;

(g) provisions for periodically reviewing the plan to identify changes that may be necessary to take account of changing circumstances or better to accomplish their purposes.

5. They invite SCAR, through their national committees, the Commission for the Conservation of Antarctic Marine Living Resources, and, as appropriate, other components of the Antarctic Treaty system to review and comment on proposed management plans for Multiple-Use Planning Areas before designation is considered by the Consultative Parties.

6. They periodically review management plans to ensure that they are being implemented effectively and, as appropriate, approve proposed changes necessary to take account of changing circumstances or better to accomplish their purposes.

XV - 12

ANTARCTIC PROTECTED AREA SYSTEM:

NEW HISTORIC SITES AND MONUMENTS

The Representatives,

Recalling Recommendations I-IX, V-4, VI-14, VII-9, XII-7 and XIII-16 and XIV-8.

Recommend to their Governments that the following historic monuments be added to the "List of Historic Monuments Identified and Described by the Proposing Government or Governments" annexed to Recommendation VII-9 and that thereafter they be accorded the respect and protection required by the Recommendations recalled above:

54. Richard E. Byrd Historic Monument, McMurdo Station, Antarctica (77°51'S., 166°40'E.). Bronze bust on black marble, 5ft high x 2 ft square, on wood platform, bearing inscriptions describing the polar achievements of Richard Evelyn Byrd. Erected at McMurdo Station in 1965.

55. East Base, Antarctica, Stonington Island (68°11'S., 67°00'W.). Buildings and artefacts at East Base, Stonington Island and their immediate environs. These structures were erected and used during two U.S. wintering expeditions: the Antarctic Service Expedition (1939-1941) and the Ronne Antarctic Research Expedition (1947-1948). The size of the historic area is approximately 1,000 meters in the north-south direction (from the beach to Northeast Glacier adjacent to Back Bay) and approximately 500 meters in the east-west direction.

XV - 13

ANTARCTIC PROTECTED AREA SYSTEM:

HISTORIC SITES AND MONUMENTS

(AMENDMENT TO DESCRIPTION OF HM 53)

The Representatives,

Recalling that Historic Monument No. 53 was added to the list of Historic Monuments annexed to Recommendation VII-9, and that this Historic Monument celebrates the rescue by the Chilean pilot Luis Pardo Villalon of the survivors of the British vessel "Endurance" in 1916 and consists of a monolith placed on Elephant Island with replica monoliths placed at the Chilean stations "Arturo Prat" on Greenwich Island and "Rodolpho Marsh" on King George Island;

Noting that during the XXIVth Chilean Antarctic Scientific Expedition in 1987-1988, a bronze bust of the pilot Pardo was placed on each of these monoliths;

Recommend to their Governments that:

The following clause be added at the end of the description of Historic Monument No. 53 in Recommendation XIV8:

Bronze busts of the pilot Luis Pardo Villalon were placed on the three above-mentioned monoliths during the XXIVth Chilean Antarctic Scientific Expedition in 1987-1988."

XV - 14

PROMOTION OF INTERNATIONAL SCIENTIFIC COOPERATION:

A DECLARATION

The Representatives,

Recommend to their Governments that they approve the following declaration on scientific research in Antarctica:

The Governments participating in the XVth Consultative Meeting:

Deeply aware of the role that Antarctica and the Southern Ocean play in interactive physical, chemical and biological processes that regulate the total Earth System;

Recognizing that,

(a) the Antarctic region has a high negative radiation budget and so acts as one of the Earth's "refrigerators". Any changes in the budget will have global consequences on atmospheric and oceanic circulation;

(b) conditions beneath the ice shelves and the girdle of sea ice promote the formation of cold bottom water that drains northward;

(c) polar seas play an especially important role in the exchange of CO^2 between ocean and atmosphere since they may be large sinks for CO^2. These processes are controlled by the sea-ice formation, thermohaline convection and biological productivity;

(d) Antarctica provides unique conditions for investigating the impact of man-made pollutants on atmospheric ozone;

(e) a detailed record of past global climate and atmospheric chemistry extending over hundreds of millennia is preserved within the Antarctic ice sheet, and in the sediments of the Southern Ocean and the Antarctic continent;

(f) because climate change is predicted to be largest at high latitudes, detection of such change above the background of high natural variability is best sought in the polar regions;

(g) plant communities existing under polar conditions are sensitive to changes in temperature, and may be good indicators of climate change;

(h) the Antarctic ice sheet contains enough water to raise global sea level world-wide some 60 metres. Any green-house climate warning which makes even a small change to this volume of ice will have a significant impact on sea level;

Recognizing, with appreciation, that the contribution that Antarctic science can make to these scientific questions is the subject of intensive work within the Scientific Committee on Antarctic Research (SCAR) and that they have identified the following five major, interconnected, interdisciplinary research thrusts for the purpose of defining and encompassing research priorities:

(a) Detection of Changes of Global Importance Best Observed in Antarctica;

(b) Processes Linking Antarctic Ice and Biological Systems to the Global Ocean and Atmosphere;

(c) Antarctic Sources of Palaeoenvironmental Information;

(d) Ecology in the Changing Antarctic Environment;

(e) Monitoring Changes in Antarctica;

Recognising, moreover, that other scientific programmes which are not so directly relevant to issues of global change are of no less value to science;

Conscious of the need to ensure that all Antarctic activity is based on information adequate to ensure that informed judgements can be made about their environmental consequences;

Renew their commitment to the pursuit of scientific research in the Antarctic; and

Declare their intent:

1. Vigorously to pursue scientific research programmes in Antarctica in a manner which makes the most productive use of the resources available.

2. To ensure that their scientific endeavors contribute as much as possible to programmes of global significance being undertaken or being prepared by the International Council of Scientific Unions and by other international organisations.

3. To ensure that research results and observations are, in accordance with Article III of the Antarctic Treaty, made freely available and that the results of Antarctic programmes

of global significance are brought to the attention of the international scientific community as rapidly as possible.

4. To ensure that activities in the Antarctic take full account of the global importance of the Antarctic as a scientific laboratory and as a place where aspects of global changes can most readily be monitored.

5. To ensure, in conformity with the declaration in Recommendation IX-5 on the Antarctic environment, that all Antarctic activity is based on information adequate to ensure that informed judgements can be made about their environmental consequences.

XV - 15

PROMOTION OF INTERNATIONAL SCIENTIFIC COOPERATION

The Representatives,

Recalling Articles II and III of the Antarctic Treaty and Recommendations relating to the facilitation of international scientific cooperation;

Recognising the increasing importance of Antarctica for scientific research, especially for the global environment;

Noting that the number of countries actively involved in Antarctic scientific research has increased considerably in recent years;

Recognising that this development has led to a concentration of research stations and of logistical support facilities in the more easily accessible regions of Antarctica and that this can lead to redundancy in scientific programmes and to unfavorable impact on the environment;

Conscious of the need to maximise the scientific output for a minimum of environmental impact;

Conscious that the sophistication and therefore the cost of many Antarctic scientific programmes is increasing and that some Consultative Parties are more able than others to bear the cost of such sophisticated programmes;

Recognising the scientific importance of environmental monitoring programmes in the broadest sense and that without these programmes many advances in Antarctic science which are of global significance would not be possible;

Recognising the need to encourage timeliness, relevance and excellence in the pursuit of Antarctic science and the importance of inter-comparability and accuracy in integrated research programmes to the end that the contributions to knowledge of these programmes may be greater than the sum of their constituent parts;

Desiring to promote efficiency in the utilisation of scarce resources;

Noting that the promotion of international scientific cooperation in Antarctic research is the basic objective of SCAR's activities and warmly welcoming SCAR's commitment to the holding of an unprecedented Antarctic Science Conference in 1991 designed to foster interdisciplinary discussion and science planning amongst Antarctic scientists, and the

integration of Antarctic research into global programmes and the strengthening of the interaction of Antarctic science, represented by SCAR, with the international science community;

Recommend to their Governments that:

1. They take such steps as may be open to them to encourage participation in the SCAR Antarctic Science Conference in 1991 on the part of their Antarctic communities and take note of its results.

2. All Contracting Parties, in planning Antarctic activities, should seek through consultation within the Antarctic science community, to take account of the scientific objectives of SCAR.

3. Through their national committees, they invite SCAR to:

(a) facilitate the participation in its activities of representatives from Antarctic scientific communities with less experience or fewer resources; and

(b) consider identifying,by scientific discipline and geographical area, scientific topics, including data gathering and environmental monitoring, by which countries with less experience or fewer resources would best be able to ensure that their activity contributed to knowledge of Antarctica to the benefit of all.

4. That those with longer and wider experience of Antarctic science and logistics should, as far as practicable and feasible, favorably consider requests for advice, training and participation in their national Antarctic programmes from those with less experience,and otherwise encourage cooperation with their programmes.

5. Generally, they should seek by all means open to them to promote the objectives of Article III of the Antarctic Treaty.

XV - 16

FACILITATION OF SCIENTIFIC RESEARCH:

COMPARABILITY AND ACCESSIBILITY OF ANTARCTIC SCIENTIFIC DATA

The Representatives,

Recalling:

(a) Article III (1) (c) of the Antarctic Treaty calling on Parties to exchange and make freely available scientific observations and results from Antarctica;

(b) Recommendation XIII-5 inviting the Scientific Committee on Antarctic Research (SCAR) to offer scientific advice on how to improve the comparability and accessibility of Antarctic scientific data; and

(c) that the Report of the XIVth Consultative Meeting identified determination of types of useful data for management and assessment and the development of a directory as two important initial steps to improve data comparability and accessibility;

Noting that:

(a) the Report of XX SCAR responds to Recommendation XIII-5 by describing several steps needed for the establishment of an Antarctic data system and by calling for the establishment of a committee on data management to advise on the development of such a system;

(b) SCAR has established such a committee with the following terms of reference;

(i) to determine the requirements within SCAR for a coordinated approach to data;

(ii) to consider the possible compilation of a SCAR directory of available items, data bases, geographical information systems, data centers, specimen holdings, relevant archives and bibliographic collections;

(iii) to consider the formation of guidelines for common or minimum formats for data collection and archiving; and

(iv) to suggest areas for coordination with external activities or organisations;

(c) the Report of XX SCAR identifies the development of national directories of Antarctic data as the logical first step in the development of a data system;

Desiring:

(a) to improve the accessibility and comparability of Antarctic scientific data to help give effect to Article III (1) (c) of the Antarctic Treaty; and

(b) to create an Antarctic scientific data system for use in facilitating environmental assessment and monitoring and the promotion of scientific research;

Recommend to their Governments that:

1. They develop and make available to SCAR and other Antarctic Treaty Parties a directory listing where and in what format Antarctic scientific data now exist.

2. They agree, working in cooperation with the SCAR Committee to compile an Antarctic Scientific Data Directory.

3. They agree to assist the SCAR Committee to develop a programme of work describing further steps needed to create an Antarctic Scientific and Environmental Data System, including consideration of relevant technologies.

4. Upon completion of the draft programme of work developed by SCAR, in cooperation with relevant governmental experts, they convene, in accordance with Recommendation IV-24, a Meeting of Experts, with expertise in data management, to consider how to establish an Antarctic Scientific and Environmental Data system.

XV - 17

FACILITATION OF SCIENTIFIC RESEARCH:

THE SITING OF STATIONS

The Representatives,

Reaffirming that freedom of scientific investigation as set out in Article II of the Antarctic Treaty is one of the fundamental principles of the Treaty;

Affirming that measures adopted in this Recommendation are not intended to interfere with the possibility of a non-Consultative Party establishing a station in Antarctica but to ensure that such Parties may maximize their contribution to knowledge and the protection of the Antarctic;

Recalling Recommendations I-I, VI-4, VII-1, VIII-11, VIII-13, IX-5, XII-3, and XIV-2;

Recalling that at the XIIIth Consultative Meeting, Recommendation XIII-6 was adopted, calling for consultations between nations with Antarctic programmes operating existing stations in the same vicinity;

Recalling that the Final Report of the XIVth Consultative Meeting notes that:

(a) new stations had a greater possibility of maximizing their scientific potential if established in the widest possible range of areas;

(b) SCAR had:

(i) recorded its concern that the continued increase in the number of stations in some parts of the Antarctic could result in unproductive duplication of scientific programmes; and

(ii) recommended that adequate prior notice be given of intent to undertake a development or scientific activity that is likely to have a major environmental impact; and

(c) a process of consultation was needed which started as early as possible in the planning stage of the new station and continued through subsequent stages, including the development and implementation of routine operations;

Recognizing that the establishment of a new station or major logistic support facility is an activity which is likely to have more than a minor or transitory effect on the environment

and is therefore subject to the Comprehensive Environmental Evaluation procedure described in Recommendation XIV-2;

Bearing in mind that while the establishment in the same vicinity of scientific research stations and logistic support facilities may favour scientific co-operation and the functioning of these stations, excessive concentration of such installations may have a negative effect on scientific activities and on the environment;

Recommend to their Governments that:

1. They urge Contracting Parties, when considering the establishment of new stations or facilities, to take the following measures to avoid excessive concentration in Antarctica of such stations or facilities:

(a) as early as possible when considering the establishment of a new station or facility in the vicinity of one or more existing stations or facilities, Contracting Parties should initiate, through their national Antarctic programme, a process of consultations, co-ordination and possible co-operation with the other national Antarctic programme or programmes concerned;

(b) they should continue this process through the subsequent stages, including the development and implementation of routine logistic operations, with a view to minimizing both interference with existing programmes and impact on the environment.

(c) before establishing a new station or facility, Contracting Parties should prepare a Comprehensive Environmental Evaluation in accordance with Recommendation XIV-2.

2. In the case of a station or facility which the national Antarctic programme of a non-Consultative Party proposes to establish, they offer assistance to the managers of that programme with respect to the choice of site and the preparation of the Comprehensive Environmental Evaluation, with a view to maximizing the scientific output of the new programme and minimizing its environmental impact.

XV - 18

COOPERATION IN METEOROLOGICAL AND SEA ICE INFORMATION SERVICES FOR MARITIME AND AIR NAVIGATION IN ANTARCTICA

The Representatives,

Recalling Article II of the Antarctic Treaty and the Recommendations relating to cooperation in Antarctic logistics (II-5, III-3, IV-25) as well as Recommendation XIV-10 on the marine meteorological and sea ice information service;

Having regard to the continuing occurrence of hazardous situations leading to loss of or damage to ships in the Treaty Area,

Noting the report of a SCAR/WMO/IOC group of experts meeting;

Taking into account the results of discussion on Recommendation XIV-9 concerning air safety in Antarctica, revealing the urgent necessity to improve meteorological information for flights in the area of the Antarctic;

Wishing to act to increase the efficiency and safety of maritime and air navigation in the Treaty area on the basis of international cooperation;

Recommend to their Governments that:

1. They continue to consider ways of developing and improving meteorological and sea ice information services for maritime and air navigation in the Antarctic Treaty area;

2. The report of the Leningrad group of experts meeting be referred to the WMO Working Group on Antarctic Meteorology for formal consideration and comment at its next meeting.

3. Upon completion of the review by the WMO Working Group on Antarctic Meteorology the matter be considered by COMNAP, in association with SCAR, for the purpose of recommending any appropriate further joint, or individual action to the next Consultative Meeting.

4. In order to assist in improving meteorological services to maritime and air navigation, they take prompt measures to participate in the IGOSS, drifting-buoy and automatic weather station programmes to provide maximum data for international exchange and operational use.

XV - 19

COOPERATION IN THE HYDROGRAPHIC CHARTING OF ANTARCTIC WATERS

The Representatives,

Recognising the importance and historical values of activities carried out by the countries who developed the present knowledge of Antarctic hydrography;

Aware that there have been significant increases in both the number and size of vessels operating in Antarctic waters in recent years;

Recognising that severe environmental conditions in the Antarctic give rise to particular risks for shipping and hydrographic activities;

Recognising that the sea ice conditions can lead to the diversion of shipping from acknowledged routes, thus requiring the extension of charting into waters contiguous to such routes;

Conscious that the safety of life at sea and the protection of the Antarctic marine environment and dependent and associated ecosystems requires that the Consultative Parties should take all possible steps open to them, by improving the charting of Antarctic waters, to ensure the safety of navigation so that maritime accidents are reduced to a minimum;

Recognising that the resources available to devote to hydrographic surveys and the accurate positioning and depiction of the Antarctic coastline are scarce;

Conscious of the benefits to be gained by making provision for international cooperation between those countries which undertake hydrographic surveys and nautical charting of Antarctic waters and of utilising to the maximum extent cooperative arrangements which already exist routinely between hydrographic offices and; therefore, of the need to avoid the establishment of a parallel system;

Aware of the role traditionally played by the International Hydrographic Organization (IHO) in contributing to cooperation between hydrographic offices, and by the Scientific Committee on Antarctic Research (SCAR) in all cartographic and other scientific activities in Antarctica;

Recommend to their Governments that:

1. They increase their mutual cooperation in the hydrographic survey and charting of Antarctic waters in order to contribute to the safety of navigation, the protection of the Antarctic environment and dependent and associated ecosystems, and for scientific purposes.

2. For the purposes of hydrographic survey and charting and associated terrestrial surveys and mapping, they coordinate their activities within the framework of IHO and SCAR, as appropriate.

XV - 20

AIR SAFETY IN ANTARCTICA

The Representatives,

Recalling Recommendations I-X and XIV-9;

Recognising the importance of ensuring safe air operations in the Antarctic, and:

(a) that there is a wide range of problems in air operations which are becoming more urgent with increasing activity;

(b) that the principal body of knowledge and experience of Antarctic air operations, and its current problems, lies with the operators of national Antarctic programmes;

Noting, with appreciation, the Report of the Meeting of Experts on Air Safety in Antarctica, held in Paris from 2 to 5 May 1989;

Recommend to their Governments that:

1. For the purpose of ensuring that measures for improved air safety apply to all flights in Antarctica, measures to improve air safety set out in paragraphs 2-10 below should be elaborated on the basis of ICAO criteria, taking due account of the specific features of Antarctica as well as of existing practices and services.

2. For the purpose of ensuring the safety of air operations in the Antarctic Treaty area, they exchange, preferably by 1 September and no later than 1 November each year, information about their planned air operations in accordance with the standardized format at Annex 1 to this Recommendation.

3. For the purpose of improving air safety in Antarctica, national Antarctic programmes operating aircraft in Antarctica and their aircrews should be provided with a continuously updated compendium ("Handbook") describing ground facilities, aircraft and aircraft operating procedures (including helicopters) and associated communications facilities operated by each national Antarctic programme (out of the use of which questions of liability will not arise) and, therefore, they should:

(a) prepare such a Handbook as a matter of urgency;

(b) facilitate the preparation of such a Handbook by their national Antarctic programme operators by collective action through the medium of the Council of Managers of National Antarctic Programmes (COMNAP) federated to SCAR;

(c) adopt a loose-leaf format in which information provided by each national operator is kept separate (unless facilities are jointly operated) so as to facilitate updating of information;

(d) request their national Antarctic operators to provide information for the purpose of compiling the Handbook in accordance with Annex 2 to this Recommendation.

4. For the purpose of ensuring mutual awareness of current air operations and exchanging information about them, they should designate:

(a) Primary Air Information Stations (PAIS) which coordinate their own air information and information from their Secondary Air Information Stations (if any) for the purpose of notifying current air operations to other PAIS. These PAIS should have adequate communication facilities able to transmit "hard copy" information by means of an agreed HF data mode and/or INMARSAT; and

(b) Secondary Air Information Stations (SAIS) which comprise stations/bases (including field bases and ships) which provide air information to their parent coordinating PAIS.

5. For the purpose of avoiding air incidents in areas beyond the range of VHF radio coverage of primary and secondary stations, aircraft outside the areas covered by primary and secondary stations should use a specific radio frequency to apply the "TIBA" procedure laid down in Annex 11 to the Convention on International Civil Aviation.

6. So as to ensure compliance with Article VII, paragraph 5 of the Antarctic Treaty and also Recommendation X-8, Part IV, they should keep one another informed about non-governmental flights and a reminder of the above provisions should be given to all pilots filing a flight plan for flights to Antarctica.

7. So as to provide for the improved collection from, and exchange within Antarctica of meteorological data and information of significance to the safety of Antarctic air operations, they should:

(a) encourage the World Meteorological Organisation in their work towards this end; and

(b) take steps to improve meteorological services available in Antarctica, specifically to meet aviation requirements.

8. For the purpose of ensuring effective communications between Primary Air Information Stations (PAIS), they ensure that their PAIS have adequate facilities for communicating with other PAIS, and that, in this connection, they bear in mind the INMARSAT system.

9. For the purpose of locating aircraft in distress in Antarctica, and noting the possibilities offered by the COSPAS-SARSAT system for the location of Emergency-Locator-Beacons-Aircraft transmitting on 406 Mhz, they designate points of contact which are to be the addressees of emergency location messages relating to air operations in Antarctica generated by the COSPAS-SARSAT system.

10. For the purpose of enhancing the safety of operation of aircraft in the longer term, studies should be undertaken, at a suitable time, aimed at making use of a satellite communication and navigation system being developed within the framework of ICAO.

ANNEX TO RECOMMENDATION XV-20

ADVANCE NOTICE

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA FOR PERIOD COMMENCING 1 OCTOBER 19 TO 30 SEPTEMBER 19

Part A

Country:	Operations/Logistics Contact Officers	Position	Office Telephone No
Address for Correspondance: Facsimile:			

Part B

* Please tick (✓) appropriate box

* ☐ No. it is not intended to conduct air operations in Antarctica during the forthcoming summer season

* ☐ Yes. it is intended to conduct air operations in Antarctica during the forthcoming summer season for which the following information sheets are attached:

(* Debate as appropriate)

Sheet 1	Intercontinental Operations	Yes/No*
Sheet 2	Continental Operations	Yes/No*
Sheet 3	Ship Based Operations	Yes/No*
Sheet 4	Other Air borne Operations (e.g. Balloons or Rockets)	Yes/No*
Sheet 5	Aircraft Description	Yes/No*

Signed..... Date.....

Part C

	Station	Lat. Long	INMARBAT Nce.
Primary Air Information Stations			
Secondary Air Information Stations			

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA: Intercontinental Flights Sheet 1

Route	No. of Flights	• Flight Level or Altitude (ft/m)	Appropriate Dates or Period	Number and Type of Aircraft per flight

• Refer to Explanatory Notes, Item (3)

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA: Continental Operations Sheet 2

Route/Location	No. of Flights	• Flight Level or Altitude (ft/m)	Appropriate Dates or Period	Number and Type of Aircraft per flight

• Refer to explanatory Notes, Item (3)

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA: Ship Based Operations

Vessel/Route/Location	Planned Schedule		Number and Type Of Aircraft
	Arrive	Depart	

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA: Other Airborne Operations (e.g. Balloons or Rockets) Sheet 4

Location	Latitude	Longitude	Type of Device	Maximum Altitude (ft/m)	Appropriate Times/Dates/Period	Other Information

INFORMATION ON PLANNED AIR OPERATIONS IN ANTARCTICA: Aircraft Description

Short Name	Full Name	(a) F/R	(b) W/S	No of Aircraft	(c) Flight Level or Altitude (ft/m)	Pax Capacity	Radio Equipment	Navigation Equipment	(d) Max Range (nim)	Type of Fuel Used	(e) SAR Equip-ment
Postenotes:											

(a) fined (F) or Rotary (R) Wing
(b) Wheeled (W) or Ski (S) Equipped
(c) Refer to Explanatory Notes, Item (3)
(d) For helicopters, also indicate maximum range over water, in brackets ( )
(e) Refer to Footnotes

EXPLANATORY NOTES on the Procedure for the

Exchange of Information on Planned Air Operations in Antarctica

In accordance with discussions at the 1988 Hobart Meeting of MNAP's and SCAR Working Group on Logistics, and Proposal 2 of the 1989 Paris Meeting of Experts on Air Safety, it was agreed that Antarctic Operators would exchange information on their planned air operations in a standardised format by 1 September each year.

The format for presenting the information is given in the attachments to this document.

Please note:

1. All Operators are to complete the "Advance Notice" cover sheet whether or not they plan to undertake air operations in the forthcoming summer season.

2. Operators who do plan to conduct air operations during the forthcoming summer season are to complete the "Advance Notice" cover sheet and the applicable information sheets as follows:

- Intercontinental Operations (Sheet 1);
- Continental Operations (Sheet 2);
- Ship Based Operations (Sheet 3);
- Other Airborne Operations (Sheet 4); and
- Aircraft Description (Sheet 5).

3. Flight Level or Altitude information is to be provided as follows:

- For inter or intra continental flights, and flights remote from stations, specify the normal operating Flight Level for the aircraft (which would be based on the Standard Pressure altimeter setting of 1013.2 hPa).

- For flights operating within the vicinity of stations (up to 50 nm radius), specify normal operating Altitude or altitude range for the aircraft (which would be based on the local QNH altimeter setting).

Notes:

(a) A transition altitude and level for Antarctic flights has not yet been agreed.

(b) A table of standard en route cruising levels for vertical separation based on direction of track (true or grid) has not yet been agreed.

(c) The ICAO standard altitude in both metres and feet for each flight level will apply.

4. All flight times (for example, for balloon launches) are to be given in Coordinated Universal Time (UTC).

5. The "Exchange of Information Sheets" should preferably be completed in the English language.

ANTARCTIC AERONAUTICAL INFORMATION HANDBOOK

CONTENTS

1. GENERAL (arranged by the name of countries in their internationally accepted order in the language of the document).

1.1 The postal address of the National Antarctic Operator including telephone, telex and telefax numbers;

1.2 An indicative description of the parts of the Antarctic Treaty Area in which the operators' aircraft operates;

1.2.1 frequently

1.2.2 infrequently
(Maps may be used where this would facilitate understanding of the description).

1.3 The primary station (PAIS) or stations from which the national operator co-ordinates his aircraft operations;

1.3.1 the role played by the operators' secondary stations (PAIS).

1.4 Ships carrying helicopters or which have designated on board facilities for operating helicopters.

2. GROUND FACILITIES (arranged by the alphabetical order of the name of each station. All stations and field camps are to be included which operate for more than one Antarctic summer season).

2.1 Runways, skiways and helipads (Information to be provided using paragraphs 2-43 of section 2.2. of Appendix I to Annex 15 to the Convention on International Civil Aviation as a guideline).

2.2 Communications
(Information to be provided using paragraphs 2-14 of section 3.2 and paragraphs 2-10 of section 3.3 of Appendix I to Annex 15 as a guideline).

2.3 Meteorology
Information to be provided using paragraphs 2-11 of section 4.2. of the Appendix I to Annex 15 as a guideline).

2.4 Aircraft operating procedures.

2.5 Alerting and search and rescue procedures.

XV - 21

USE OF ANTARCTIC ICE

The Representatives,

Considering that the ice existing in Antarctica represents the world's largest freshwater reserve;

Noting that, technological developments might one day make it possible to utilize icebergs detached from the continent for freshwater requirements, especially in coastal areas;

Recalling the principles enshrined in the Antarctic Treaty, which lay down a regime for international co-operation guaranteeing that Antarctica shall continue for ever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Convinced that the structure established under the Antarctic Treaty has proved effective in promoting international peace, in keeping with the purposes and principles of the United Nations Charter;

Concerned that uncontrolled activities relating to the exploitation of Antarctic icebergs could also have an adverse effect on the unique Antarctic environment and its dependent and associated ecosystems;

Noting that sufficient scientific information is not yet available on the environment impacts, including global climate and weather, which might occur in the event of floating icebergs being used for that purpose;

Noting that the harvesting of ice in the coastal regions of Antarctica, especially if this were to require land-based installations, could give rise to a number of additional environmental or other issues;

Acknowledging that the Antarctic Treaty is the most appropriate framework for fostering international efforts to guarantee the protection of the environment and give impetus to the freedom of scientific research and co-operation in Antarctica;

Recognizing the desirability that commercial exploitation of Antarctic ice not occur, in any case, prior to examination by the Contracting Parties to the Antarctic Treaty of the issues posed by such activity;

Recommend to their Governments that:

1. They exchange information on the feasibility of commercial exploitation of icebergs, relevant technologies and possible environmental impacts.

2. Through their national committees, they invite SCAR to provide advice, as appropriate, on the above-mentioned matters, and continue to co-ordinate research programmes in polar glaciology, biology, oceanography, and meteorology in relation to Antarctic ice.

3. They include an item on "Use of Antarctic Ice" on the agenda of the XVIth Consultative Meeting.

XV - 22

ANTARCTIC TREATY THIRTIETH ANNIVERSARY COMMEMORATIVE STAMP ISSUE

The Representatives,

Recommend to their Governments that:

1. On the occasion of the Thirtieth Anniversary of the entry into force of the Antarctic Treaty, each Consultative Party should issue a commemorative stamp (or stamps) on a common date in 1991 (Eg. 23 June 1991).

2. The stamp (or stamps) should bear, in the language or languages of each issuing country, the following words:

"Antarctic Treaty 1961-1991".

3. Consideration be given to the themes of protecting the Antarctic environment and international cooperation in Antarctic scientific research for the most prominent features of the design.

4. There should be incorporated into the design of the stamp (or stamps), the Antarctic Treaty emblem representing a map of Antarctica which appears on the official documents of Consultative Meetings.

5. Any additional matter should be consonant with the provisions and the spirit of the Antarctic Treaty.

6. The number of stamps to be issued and the denominations of the stamp or stamps should remain at the discretion of the issuing country.

PART III

DECLARATION ON THE OZONE LAYER AND CLIMATE CHANGE

APPROVED AT

THE XVTH ANTARCTIC TREATY CONSULTATIVE MEETING

DECLARATION ON THE OZONE LAYER AND CLIMATE CHANGE

The Representatives taking part in the XVth Antarctic Treaty Consultative Meeting:

Recalling: Recommendation I-IV; I-V; II-VIII; V-3; VI-4; VII-7; VIII;13; IX-5 and XIV-10;

Considering the essential role of the Antarctic continent and the Southern Ocean in the Earth's energy budget and ocean dynamics, including its role in regulating the climate which has become all the more important because of international concern with the issue of global climate change;

Basing themselves on scientific studies that indicate the possibility of changes in the physical and chemical composition of the atmosphere, directly caused by human activity outside the area of the Antarctic Treaty and which may have harmful effects on human health, on terrestrial and marine ecosystems and may cause interference with other legitimate uses of the Antarctic environment;

Taking into account with appreciation the work done by the Scientific Committee on Antarctic Research (SCAR) on assessing the importance of ocean and atmospheric interactions of the Antarctic ecosystems and the ozone layer;

Recognizing the existing activities in the field of monitoring the depletion of the ozone layer developed by SCAR through its Working Group on Atmospheric Sciences;

1. Strongly support the Parties to the Vienna Convention and its Montreal Protocol in their efforts to eradicate the causes giving rise to the depletion of the ozone layer, having regard to the declaration drawn up in Helsinki in May this year and the forthcoming review of the terms of the Montreal Protocol at the second Meeting of the Parties in London in June 1990;

2. Appeal to all Antarctic Treaty Parties that have not done so to consider adherence to the Vienna Convention on the Protection of the Ozone Layer and its Montreal Protocol.

3. Take note with appreciation of the work being done with regard to global climate change and encourage UNEP and other relevant International Organisations, on the basis of proposals being developed by the UNEP/WMO Intergovernmental Panel on Climate Change, to take firm action, through legal instrument and otherwise, to mitigate man-induced causes of climate change.

4. Urge the Antarctic Treaty Parties to establish, in coordination with SCAR, cooperative research programmes on the environmental effects of the ozone layer depletion, including

the functional integrity of ecosystems in the Antarctic Treaty Area.

5. Decide to keep the item on the ozone layer depletion on the agenda of the XVIth Antarctic Treaty Consultative Meeting.

PART IV

A N N E X E S

ANNEX A

OPENING ADDRESSES

(i) CONSULTATIVE PARTIES

- PRIME MINISTER OF FRANCE
- ARGENTINA
- AUSTRALIA
- BRAZIL
- CHILE
- CHINA
- FINLAND
- GERMAN DEMOCRATIC REPUBLIC
- GERMANY (FEDERAL REPUBLIC OF)
- JAPAN
- KOREA (REPUBLIC OF)
- NEW ZEALAND
- NORWAY
- POLAND
- SOUTH AFRICA
- SPAIN
- SWEDEN
- UNION OF SOVIET SOCIALIST REPUBLICS
- UNITED KINGDOM
- URUGUAY

(ii) NON CONSULTATIVE PARTIES

- BULGARIA
- ECUADOR
- THE NETHERLANDS
- ROMANIA

OPENING ADDRESS BY MR MICHEL ROCARD,

PRIME MINISTER OF FRANCE

Distinguished Delegates,
Ladies and Gentlemen,

Welcome to Paris for the Fifteenth Antarctic Treaty Consultative Meeting, which I want to wish every success. You may be assured that France is happy and honoured to be hosting this meeting.

Before we enter into the substance of our meeting, I should like to greet and congratulate the representatives of those countries which have acceded to the Washington Treaty since the Fourteenth Consultative Meeting held in Rio de Janeiro, or have been admitted to Consultative Status. These new accessions and admissions bear witness to the vitality of the Treaty on the Antarctic, to whose preservation we are all very attached.

I should also like to tell you how satisfied the French Government is at the positive outcome of the other two meetings which France has had the honour of organizing this year. These were:

- the meeting of experts on air safety in the Antarctic, which culminated in a set of constructive proposals that could be adopted in the next few days; and

- the preparatory meeting for the Fifteenth Consultative Meeting, at the end of which an agenda underscoring the concern for protecting the environment was drawn up. Indeed, to my mind, this is the overriding issue for those of us currently talking about the Antarctic and I am happy to see it featuring on your agenda.

These two earlier meetings can accordingly be said to have been a very positive pointer to the meeting opening today.

The present meeting will take on a special significance. As your proceedings are about to begin, I should like to put you a few ideas centring on the following two themes:

- in the first place, the Antarctic Treaty system is entering a new era; and

- secondly, that system can be enhanced and consolidated by ensuring that its environment is more effectively protected, for example by means of "nature reserve".

Distinguished Delegates,

France regards the Antarctic Treaty as being a major Treaty. It is necessary to stress the merits of the system that has grown out of it and, in so doing, respond to the unwarranted criticism that has been levelled against it in some quarters.

Thanks to the Washington Treaty, the Antarctic has remained unaffected by any action conflicting with peace, but has, for the past thirty years, been the subject of exemplary scientific research. The hazards and the at times bloody conflicts of international life have in no way upset the work of the Parties having acceded to the Treaty, and especially that of the Consultative Parties.

That work, whose principles are clear-cut and whose results are abundant and positive, has made a significant contribution to three of the main issues of our time, namely peace, science and environmental protection.

I wish to make a point of recalling here not only the volume of work accomplished under the Antarctic Treaty system, but also the spirit in which that work has been performed. Indeed, according to the very terms of the Washington Treaty, that work is intended to foster the progress of mankind.

I shall give one example: the discoveries made in Antarctica on the global changes affecting the planet have made a decisive contribution to knowledge. They have made it easier for all of us to become more acutely aware of the grave dangers now hanging over us and they have triggered off a process of consultation and negotiation geared to action.

I feel that there are two other factors which should also be emphasized. These are that:

- The Antarctic system is open to any country that is prepared to subscribe in the principles of peace, co-operation and scientific interest enshrined in it; and

- it is based on consensus. But consensus should not be construed as being a technique of diplomacy for inhibiting any action. It is a line of conduct which gives the system its impetus. It is a clear sign of the determination of the Parties to the Treaty to join together in discharging their responsibilities towards the Antarctic.

For all these reasons, France wishes yet again to stress its attachment to the Washington Treaty and to the system that has emerged from it.

Ladies and Gentlemen,

The world has changed in thirty years. Most frontiers have receded as a result of the extraordinary advances made by communication techniques.

The pressing development needs of the most underprivileged and the constraints generated by the failure to exercise proper control over the processes of industrialization compel us to look to the world's future in a new frame of mind and with new means. The world is one - and mankind likewise.

For a long time, the protection of the environment was a subject of concern to a few public figures, acting more or less in isolation, and a number of associations or movements.

However, what we are now seeing is a more acute awareness of this requirement among political leaders, either because public figures who are already well known for their commitment to this issue are taking on greater responsibilities, or else because the message conveyed by the scientific community and a growing sector of public opinion is being more widely heeded.

It is no longer enough merely to acknowledge the facts, as those against taking any action are still doing, and to hope that science will solve by itself the problems that it is creating. The time has come for the politicians to face up their responsibilities.

The message of the scientific community has itself been spelt out more clearly: the built-up of gases giving rise to the greenhouse effect, the reduction of the ozone layer, and the far-reaching changes in the conditions prevailing on earth are none of them on the list of irrational grounds for anxiety.

These findings are the outcome of measurements and scientific studies. The fact that these have been particularly precise in Antarctica is not due to chance, but stems from that continent having remained virtually unblemished. Its purity is such that it is an irreplaceable site for observing the ozone layer and the changes taking place in the atmosphere.

It is a living laboratory for the study of fauna and flora and a testing ground, for example, for reviving the memory of the earth's climate. The Antarctic's role in the global changes taking place on earth may be open to discussion, but its role as a pointer to the planet's evolution and also as a world ecological reserve cannot be questioned.

This makes it imperative for us to safeguard the purity of the region and that is prime requirement for all the world's political leaders.

The international community has, in fact, been able to gauge the magnitude of the risks entailed from the recent maritime accidents which have had so adverse an effect on the environment.

This only goes to confirm how fragile these areas are and to show the shortcomings of the existing scheme of things. Hence, the second requirement is to make up for these shortcomings.

It is therefore becoming most desirable for the Consultative Parties to consolidate the Antarctic Treaty system by according a special place within that system to the protection of the environment.

The Government I lead has made environmental protection one of its priorities. It considers that, over and above the human rights which are celebrating in this Bicentennial year, all due account has to be taken of the right to live in a healthy environment and the right of future generations to inherit from us a planet that is still fit to live in.

Every right entails duties. The President of the French Republic and I are therefore consistently endeavouring, in the highest fora, to promote the idea that measures have to be taken to institute a proper policy for safeguarding the environment.

France, for example, was one of the countries which were instrumental in calling for and actively participating in the Conference on the protection of the atmosphere held in the Hague, and the summit held at the "Arche" in Paris in July 1989 devoted much of its work to environmental protection.

The Antarctic is at the heart of the debate on the environment. It is incumbent upon the Washington Treaty system and hence on the Consultative Parties to find an appropriate answer.

I feel that the Parties to the Antarctic Treaty share the twofold concern of:

- finding an effective and modern answer to the international community's legitimate concern to see the protection of the Antarctic strengthened;

- effectively defending the system which has arisen out of the Washington Treaty.

It was with this twofold concern in mind that France addressed itself to its partners and friends, the other Consultative Parties and the other Parties of the Treaty, in May last and is now doing so again.

On 9 May last, right from the opening of the preparatory meeting for the Fifteenth Consultative Meeting, France

expressed the hope that, over and above the existing system, whose merits it recognizes, a genuinely innovative system, as to both substance and form, could be evolved to strengthen the overall protection of the Antarctic.

It is pleased to note that its voice, together with that of other countries prompted by the same concern, has largely been heeded, since the draft agenda which you have adopted for the Consultative Meeting starting today is dominated by issues relating to the environment. In particular, you have recommended that comprehensive measures be considered for protecting the Antarctic environment and its dependent and associated ecosystems.

Indeed, I had all this very much in mind when I met the Prime Minister of Australia in Canberra in August last. On that occasion, Bob Hawke and I agreed to put a joint proposal to the Consultative Parties on the convening next year of a meeting specially devoted to the drawing-up of a comprehensive regime for the protection of the environment in Antarctica and the dependent and associated ecosystems.

That meeting could lay down the principles for regulating human activities having an impact on the environment in the area covered by the Treaty and thereby provide a consistent framework for measures relating to specific activities.

It could also establish ways and means of preventing and correcting any damage caused to the environment and set up permanent institutions with special competence for the environment. These institutions would constitute the working tools which the Consultative Parties could use to give operative effect to the decisions they take by consensus.

Thirdly, these enabling institutions could be assisted by researchers whose scientific skills are acknowledged worldwide.

Ladies and Gentlemen,

The urgent task now before you is for the States concerned to contemplate holding a Consultative Meeting specially devoted to the environment and for them to work on a comprehensive regime for protecting the Antarctic which, in my view, should take the form of a "nature reserve, land of science".

The joint proposals along those lines made by France and Australia represent our contribution to the common body of thinking, in the same way as other contributions that have emerged, or are likely to do so.

They do not constitute a prerequisite for the meeting we are proposing and that initiative quite obviously leaves the field wide open for future discussions. France intends to

advance its ideas, but it is also mindful of the consensus which, in its capacity as Chairman, it is incumbent upon it to help us reach.

Ladies and Gentlemen,

In conclusion, I should like to stress that the goal we are pursuing is to consolidate the Antarctic Treaty by adding to it in the environmental sphere.

A proposal supported by France will be submitted to you for that purpose. It sets out to be innovative and effective and will, I hope, be widely referred to during your proceedings, along with other proposals that are likewise aimed at organizing the preservation of the Antarctic environment.

My most cherished wish is that your discussions will culminate in the convening, next year, of a meeting of the Consultative Parties exclusively devoted to the comprehensive protection of the environment.

Distinguished Delegates,
Ladies and Gentlemen,

This, then, is the message of hope which I was particularly intent of conveying to you personally at the opening of your meeting.

I should again like to bid you a cordial welcome and wish your proceedings every success. I hereby declare open the Fifteenth Consultative Meeting of the Antarctic Treaty.

OPENING ADDRESS BY MR ALBERTO L. DAVEREDE,

LEADER OF THE ARGENTINE DELEGATION

Mr Chairman,

I should like to congratulate you on your election as Chairman of this Consultative Meeting, in the knowledge that your personal and professional qualities will be instrumental in leading us to the best possible outcome. I should also like, through you, to convey our gratitude to the French Government for having organized this Meeting.

We delegates assembled here are fully conscious of the responsibility we bear on this occasion. The caution with which we proceed will dictate whether this meeting will furnish yet another opportunity for strengthening the ties of harmony and co-operation which have been a feature of relations between the Contracting Parties, or whether we embark on a path which might jeopardize the excellent results obtained through so many year's rewarding deliberations.

We are all united by the same ideals and goals dedicated to the Antarctic Treaty and backed by the instruments and Recommendations forming the system.

However, we must not lose sight of the fact that the means employed to achieve those goals must be consistent with the principles that guide us. We know that hopes are being placed in the progress which we are expected to make at this Meeting, especially in regard to the preservation and protection of the Antarctic environment. My Delegation stands ready to co-operate in that task and is at your disposal for that purpose. Even so, the external pressures being exerted on us to obtain quick results should not prompt us to adopt decisions which we might come to regret at a later date.

My Delegation is convinced that the fundamental and inescapable requirement for ensuring the optimum protection of the environment is to uphold the basic premises underlying the Antarctic Treaty, with particular respect to the legal and political status of Antarctica, as recognized in Article IV of the Treaty.

In the thirty years which have elapsed since the Treaty was adopted, the Contracting Parties have ensured that this fundamental principle has not been undermined, and this has enabled us to move, without undue haste but without a break, towards the goals which we have set ourselves.

The system can still be perfected and it can continue to be adapted to the growing requirements, as has been the case with the adoption of the Convention on Mineral Resources,

which, in my Government's view, offers adequate scope for guarding against the dangers which could arise out of the random exploration and mining of the Antarctic's mineral resources.

We wish to preserve the regime which, after such prolonged and intensive efforts, we managed to adopt by consensus, and to add to it by affording additional guarantees for protecting the environment, such as the protocol on liability and other measures, many of which feature on the agenda of this Meeting.

OPENING ADDRESS BY MR ALAN BROWN,

LEADER OF THE AUSTRALIAN DELEGATION

Mr Chairman, the Australian Delegation has great pleasure in attending this meeting in Paris in the year of the bicentenary of the French Revolution. We regard the city and the setting as an excellent location for our deliberations. We congratulate you on your election and look forward to working with you to make more progress on the important matters which are on the agenda.

The Australian Delegation believes that ATCM XV should be a particularly significant meeting in the development of the Antarctic Treaty system. We believe it is important that this meeting should demonstrate that the Antarctic Treaty System has the maturity and vision to deal with the issues before the meeting. This must be through a constructive approach and one which clearly leads in the direction of enhanced protection of the Antarctic environment. If this happens, then the unity and credibility of the Treaty system will be enhanced. I can assure you, Mr Chairman, that it is the objective of the Australian Delegation to work for this result. The number of Treaty parties has continued to grow and Australia is pleased to welcome, as new Consultative Parties, the representatives of Finland, the Republic of Korea and Peru. We have had a number of important contacts and associations with these countries and their national Antarctic programs. We hope to maintain these contacts. Australia has continued its efforts to increase its own activities in Antarctic research and this year we have made important additions to our scientific programs as well as the commissioning of a new research and resupply vessel, the construction of new laboratories and investigating the feasibility of an air transport system.

The meeting is taking place at a time when there is a much greater world concern about a number of environmental matters. Climate change and the related question of biological diversity have demonstrated how important it is that the members of the world community should work together and use all international bodies to contribute to an effective response to these major problems. The Antarctic cannot be considered in isolation from these major global preoccupations. The very considerable body of research which has been conducted by the parties to the Antarctic Treaty has demonstrated how important is the role of Antarctica not only as a place for scientific research but as a major factor in the global climate and in our understanding of it. The world community will expect the parties to the Antarctic Treaty to be able to develop their activities in a way which further contributes to the eventual conclusion of international instruments which can form the basis for an effective international response to the challenge of global warming.

It is not our view that environmental matters alone should exclude other matters in our discussions. Science has been a fundamental consideration at all stages of the development of the Antarctic Treaty System. It is clear that scientific programs in Antarctica are essential if the impact of the Antarctic on our global situation should be fully understood. Science of course is not an objective in itself. Its purpose should be to improve the conditions of life and the understanding of the world community.

Australia, together with France, has presented for the consideration of other members of the Antarctic Treaty some proposals under Item 7 dealing with comprehensive environmental measures. It is our view that this matter is of such importance that it cannot be fully considered at this ATCM. There are many items on the agenda which require our attention. We also must have sufficient time to develop concepts for a comprehensive approach to the protection of the Antarctic environment. Our desire is that the ATCM should agree to hold a Special Consultative Meeting in 1990 devoted to the question of the protection of the Antarctic environment. Australia and France have also proposed for the consideration of other Delegations the outline of elements which might be included in a comprehensive convention which would establish broad principles, identify action required and put in place machinery which will be essential if a comprehensive regime for the protection of the Antarctic environment is to be effective. We also consider it important that with the rapid increase in human activity in the Antarctic there must be understanding that some of those activities will need to be restricted and some may need to be prohibited if effective and appropriate environmental protection is to be achieved.

The Australian Delegation shares the view that there are many important matters on the agenda which should be dealt with at this meeting and produce worthwhile results. The world community will expect to see the Treaty nations come up with effective proposals in a variety of matters. These include those items on our agenda which cover waste disposal, protected areas, marine pollution, environmental impact assessments and the promotion of international scientific cooperation. We also believe progress can be made in regard to air safety, building on the work of the experts who met earlier in Paris. A number of other agenda items should make further contributions in the fields of marine navigation and weather forecasting.

The Australian Delegation intends to play a full and active part in the work of the ATCM. We look forward to cooperating with other delegations in an effort to achieve results at this meeting which will be seen as meaningful by the world community which will certainly watch with interest our deliberations and their outcome.

Through you, Mr Chairman, the Australian Delegation would wish to express its thanks to the Prime Minister of France, Mr Rocard, who opened the meeting and whose statement has contributed significantly to clarify the issues of greatest importance at our meeting. We expect that his advice will help us arrive at a substantial and constructive result to ATCM XV.

OPENING ADDRESS BY MR HENRIQUE R. VALLE,

LEADER OF THE DELEGATION OF BRAZIL

Mr Chairman,

Allow me to take this opportunity, on my own behalf and on behalf of the Brazilian Delegation, to tell you how happy we are to be here in Paris, gathered for the XVth Antarctic Treaty Consultative Meeting. I wish to thank the French Government for the invitation to attend this meeting and for the excellent working conditions we have been granted by those responsible for its organization. I also wish to express our appreciation for the thoughtful and pertinent opening statement delivered by His Excellency Michel ROCARD, Prime Minister of France. Finally it is with pleasure that I congratulate you on your unanimous election, confident that your experience and well known diplomatic abilities will serve you well in steering our work to a successful conclusion.

I wish to extend a warm welcome to the representatives of Spain and Sweden, which were admitted as Consultative Parties at the 8th Special ATCM, held last year. It is with satisfaction that I also welcome the representatives of Peru, Finland, the Republic of Korea, which have just been accorded consultative status on the basis of a thorough evaluation of the scientific activities they are carrying out in Antarctica. The Brazilian Delegation is willing to establish close and fruitful working relations with the Delegations of the new ATCPs. I would also like to greet the representatives of Canada and Colombia, countries which acceded to the Antarctic Treaty since the meeting in Rio de Janeiro and which are for the first time present at an ordinary ATCM.

This XVth Antarctic Treaty Consultative Meeting is one of special importance, given the fact that it is being held at a moment when international public opinion is focusing particular attention on how we, the countries which are active in Antarctica, are managing our activities there. This new and widespread awareness of Antarctic affairs stems from the recognition of the importance of protecting the unique and fragile Antarctic environment and its dependent and associated ecosystems and of the significance of Antarctica for the understanding of the world environment and of what has come to be dubbed global change.

The item in our agenda "Comprehensive measures for the protection of the Antarctic environment and dependent and associated ecosystems" will undoubtedly attract much of our attention during this meeting. At the May Preparatory Meeting Brazil wholeheartedly supported the inclusion of the item in the agenda, consistently with our long-standing position that the protection of the environment should always be the

paramount parameter with reference to which any human activity in Antarctica should be gauged and assessed. Brazil's stand on this issue is hardly a new one and did not spring from the recent and international awareness of the imperative need to preserve the Earth's environment from adverse effects. As early as February 1985, the then Minister for External Relations of Brazil, when opening the session of the IV Special ATCM on Antarctic mineral resources, held in Rio de Janeiro, stated: "The Consultative Parties share a special responsibility for the protection of the fragile and unique Antarctic environment. Within the area of application of the Antarctic Treaty, any activity presenting the risk of disturbing the vulnerable ecosystem of the region should not be permitted. This is a fundamental principle, to which should be subordinated our interest for Antarctic mineral resources".

Mr Chairman,

Brazil signed the Convention on the Regulation of Antarctic Mineral Resource Activities on the 25th November 1988, on the assumption that there was a consensus among the Consultative Parties that the existence of a legal framework which would regulate mineral resource activities while strengthening peace and avoiding the risks of tension and conflict was both useful and necessary. Brazil did not participate in the discussion of the premises on which was based the decision to convene the IV Special Antarctic Treaty Consultative Meeting, having for the first time been present at a session of the negotiation in 1984, when the basic outline of the mineral regime which was eventually adopted was already relatively defined. If countries which participated in the discussion of those premises conclude, only a year after the adoption of the Convention by consensus, that they are not valid any longer, Brazil shall certainly not insist on the need or the usefulness of having an agreed mineral resource regime. It should be clear, however, that Brazil does not accept the interpretation that mineral resource activities in Antarctica can ever be carried out outside the framework of an agreed regime in force. The threats which such action would represent to harmony and peaceful cooperation in Antarctica might well prove to be too strong a pressure for the Antarctic Treaty System to withstand. It should be in no one's interest to expose the system to such a risk.

Mr Chairman,

Brazil will do its utmost to ensure that international expectations will not be thwarted and that this Paris meeting will take decisive steps towards the adoption of a broad, coherent and integrated approach for the protection of the Antarctic environment and its dependent and associated ecosystems. Since our national territory is located in the proximities of the area of application of the Antarctica Treaty, we are very much concerned about the possible

contamination of the still pristine wilderness values of Antarctica, as a result of man's increasing activities in the region. While recognizing that the consultative mechanism deriving from the Washington Treaty has a special responsibility for tackling this very important issue, one should not exclude the possibility of participation of other interested parties in future discussion.

For almost thirty years the Antarctic Treaty has served us well and has demonstrated to the international community that it has kept Antarctica free from tension and conflict, thus contributing to international peace and security. We find ourselves now at a particularly important moment in the life of the Antarctic Treaty System, when significant and courageous decisions are expected from us. We are confident that under your wise leadership we will live up to this high responsibility.

Thank you.

OPENING ADDRESS BY MR FERNANDO ZEGERS,

LEADER OF THE DELEGATION OF CHILE

Mr Chairman,

The proceedings of the XVth Antarctic Treaty Consultative Meeting have begun in the magnificent capital of France, a founder member of that Treaty.

Our work will lay considerable stress on environmental matters, and rightly so, as this selfsame Treaty makes the Antarctic a peace zone, a scientific laboratory and an ecological reserve. A further reason is that ecosystems are becoming a matter of increasing concern throughout the world.

During the thirty years since the Treaty System first came into force, it has declared the region situated south of latitude 60° South a special conservation area; it has approved measures for the protection of fauna and flora in order to counter the possible impact of man's presence on the Antarctic environment and on its associated or dependent ecosystems and has designated specially protected areas; finally, it has approved separate conventions for ecological protection in view of the exploitation of the area's resources. All these moves, together with the activities of its members in Antarctica, have shaped that ecological reserve and made it a reality.

Those same pristine and unique features have drawn attention to the serious problem of the depletion of the ozone layer, which originated neither in Antarctica, nor, save to a small extent, in the southern hemisphere. They likewise gave rise to alarm at the problems or accidents with which the System has had to contend. Their occurrence in the future will in any case require the adoption of appropriate supplementary measures.

This concern on the part of public opinion has gone hand-in-hand with growing and diversified human activities in Antarctica, which have taken the form of an increased human presence, more interests and a greater number of permanent installations.

As a result, an assessment should be made of the work accomplished by the Antarctic Treaty in the environmental sphere. To this end, it is necessary to examine the measures being taken to identify possible omissions, consider whether any activities have been left out or whether other new activities might develop in the future, evaluate the precision of these measures and the extent to which they are mandatory,

and establish or define with greater accuracy the principles, objectives and standards of conservation.

For these reasons the Delegation of Chile presented at the Preparatory Meeting held in Paris last May the item "Comprehensive Measures for the protection of the Antarctic environment and of its associated and dependent ecosystems", which was unanimously approved and will most certainly constitute the focal point of the XVth Consultative Meeting which is now beginning. We submitted a document, which today is being circulated under the title "Working Paper submitted by the Delegation of Chile", in which we made proposals as to the means of carrying out the above-mentioned assessment, the points that should be included in a Recommendation arising out of this meeting and the probable follow-up to be given to the approval of a set of comprehensive measures, which will assuredly require the convening of a Consultative Meeting on this subject in 1990.

The wide-ranging discussions on which we are about to embark should conclude with the adoption, within the framework of the Treaty, of Agreed Measures for the protection of the ecosystems. Such a procedure will make this set of norms mandatory, speed up the procedure for its approval, and avert the risk of distorting the nature of the Antarctic Treaty by the introduction of a separate instrument.

This XVth Consultative Meeting should likewise discuss and adopt agreements on a variety of ecological issues whose examination has reached an advanced stage or whose urgency became apparent during the Preparatory Meeting in May. Mention may be made, among others, of the environmental impact assessment, waste disposal and the code of conduct applicable in this respect, specially protected areas, uses of Antarctic ice and, of course, the depletion of the ozone layer.

The improvement of the environmental protection measures contained in the Treaty itself must be considered as complementary to the Antarctic Minerals Convention, which was unanimously approved in order to preclude uncontrolled exploitation. This instrument presupposes that the Antarctic will be closed to exploitation in any form, with the proviso that it will be opened up in the future region by region, subject to the unanimous agreement of the members of the Committee created by it, and to the guarantee that no damage is done to the environment, within the framework of the principles it lays down, which are probably the most demanding requirements laid down in any instrument. It is accompanied by a moratorium on mining activities to be agreed upon at the time of its adoption, but which shall not enter into force until such time as it is deemed appropriate. Moreover, its substantive measures make it mandatory to have the requisite scientific knowledge and an appropriate technological response, which conditions cannot be attained in the near future.

The Minerals Convention and the moratorium will need to be rounded off by the negotiation of an Additional Protocol on economic liability and the enhanced protection of the ecosystems. Discussion of such an instrument should take place concurrently with that of the Comprehensive Measures.

We do not share the alternative view favouring the adoption of a Convention on the Environment providing for institutions empowered to take decisions on all uses of the Antarctic, and excluding the recently approved Minerals Convention. Such a proposal would lead to the de facto substitution of the Antarctic Treaty, and could rule out or bring about a decrease in other uses and jeopardize the legal and political equilibrium of this basic instrument. On the other hand, the praiseworthy proposal concerning the protection of the ecosystem and the exclusion of all mining activities would threaten the moratorium and expose the Antarctic to the danger of uncontrolled exploitation.

We consider it possible, and even necessary, to obtain a general agreement ensuring maximum protection for the Antarctic environment and its associated ecosystems, while at the same time adequately safeguarding the peace zone, free scientific research, and the protection of the claims concerning sovereign rights, in addition to freezing the struggle for sovereignty and preserving all the admirable achievements of the Antarctic Treaty System.

The development of such a system is of considerable importance and urgency at the present time. Of equal importance is the unanimity prevailing among the Parties to the Treaty. It springs from the constantly flexible and imaginative approach required by the procedure of consensus which is at the heart of its success. All this should be borne in mind during the discussions of the reports that will be submitted by the various components of the Treaty System and its co-ordinators in various fora, since such discussions are an essential element of these Consultative Meetings.

Mr Chairman,

As a founder member of the Antarctic Treaty, and one which has claimed sovereignty in Antarctica and is also the country closest to that continent, situated as it is 500 miles and two and a half hours' flying time from its American territory, Chile has and continues to maintain a position with a strong ecological content. It has asserted these views in all fora and at all negotiations and it was on this basis that it submitted the item on Comprehensive Measures for the protection of the ecosystems.

It conducts an equally vigorous policy in its defence of ecology, its claim of sovereignty and the preservation of the Antarctic Treaty and the System to which it gave rise.

We are convinced that, by working together, we shall progress in the ongoing task we have taken on and overcome the problems confronting us, with a view to achieving the final consolidation of the Treaty System and its work, which are so crucial to this continent and to world co-operation.

OPENING ADDRESS BY MR XU GUANGPAN,

LEADER OF THE CHINESE DELEGATION

Mr Chairman,

First of all, on behalf of the Chinese Delegation, I would like to extend to you our congratulations on your assumption of the chairmanship of the present meeting, and to thank the distinguished Prime Minister Rocard for his kind welcoming speech. At the same time, I would take this opportunity to extend our congratulations to those representatives of the new Antarctic Treaty Consultative Parties.

The Chinese Government has always been in favour of the purposes and principles of the Antarctic Treaty. We have been consistent in making efforts to facilitate the implementation of these purposes and principles. For 30 years, the Treaty has guaranteed peaceful uses of Antarctica, ensured a demilitarized and nuclear-free status of the continent, facilitated the scientific investigation thereof and international cooperation therein and made contributions to protect the unique environment and ecosystem of the region. In order to make the Treaty System more effective in pursuit of its purposes and tasks, we should abide strictly by the provisions of the Treaty system and progressively improve and perfect its operation in accordance with the new developments in Antarctic Affairs. This is the very responsibility of the ATCMs.

Mr Chairman,

China's activities in scientific investigation and research in Antarctica are positive and substantial. Since 1984, China has dispatched several scientific expeditions to Antarctica, and set up early this year the second Chinese permanent station, Zhongshan station in Antarctica. China will continue its due efforts to assist mankind in having a better understanding of Antarctica and further peaceful use of Antarctica.

Mr Chairman,

Through the long concerted efforts of the Antarctic Treaty Parties, one of the achievements of the Treaty system is the establishment by the system of an initial mechanism for the protection of the Antarctic environment and its dependent and associated ecosystem, which constitutes an integral part of the global environment protection. Of course we are fully aware that this mechanism is not perfect, and we are facing a serious challenge in this respect. The survival of mankind

would be greatly jeopardized if we could not shoulder the responsibility of preserving the Antarctic environment and its dependent and associated ecosystem. We highly appreciate that the present ATCM items are focused on the Antarctic environment protection. My delegation also supports the proposal to discuss the possible formulation of a regime for the Antarctic environment protection. We firmly believe that this regime will further develop the Antarctic Treaty System and make new contributions to the international community. The Chinese Delegation will consult with other delegations in a cooperative and responsible spirit with regard to these issues.

We wish this meeting every success.

Thank you, Mr Chairman.

OPENING ADDRESS BY THE AMBASSADOR ESKO RAJAKOSKI,

LEADER OF THE DELEGATION OF FINLAND

Mr Chairman,

On behalf of the Delegation of Finland, I would first like to congratulate you on your election as Chairman for the XVth Antarctic Treaty Consultative Meeting. I am convinced that under your expert guidance, this Meeting will be successful. In the name of the Delegation of Finland, I would also like to express my thanks to the French Government for having made available the facilities for both this Meeting and for the Preparatory Meeting last May, and the excellent hospitality extended to us all by the French people.

Mr Chairman,

This XVth Antarctic Treaty Consultative Meeting is of particular importance to my Delegation. The reason is obvious: we are taking part for the first time with consultative status. My Delegation is grateful for the kind words you expressed when announcing that the detailed report prepared by my government on its significant research activity in Antarctica, covered by in Articles IX and II of the Treaty, was considered sufficiently solid for Finland to participate in the Committee's work as a Consultative Party. We also thank those delegations that have been so kind as to extend their congratulations.

I would like to take advantage of this occasion to extend the especial thanks of my Delegation to the Consultative Members of the Committee for their support for our candidature and I would like to ensure them that we will pursue our efforts in the field of scientific research in Antarctica. We are ready to lend our support to the Antarctic Treaty System.

I would also like to congratulate the Delegations of Peru and the Republic of Korea for their admission to Consultative Status following their respective reports.

Mr Chairman,

I have had several opportunities to express the aims and motivations that the government of Finland sees in scientific cooperation in Antarctica. Maintaining peace and security on the continent and its full demilitarisation, freezing territorial claims under the terms of the Treaty and the freedom of scientific research and assuring cooperation, continue to be the main elements on which the regime is based. The Antarctic Treaty has once again, these past years, been

shown to be efficient and pragmatic, despite the few criticisms that have been levelled by countries that are not members of the Treaty. International cooperation in the areas of scientific research, logistics and others, has taken place in a pacific and friendly climate. I am convinced that this XVth Meeting, which started yesterday, will be useful and profitable judging by the agenda drawn up by the Preparatory Meeting last May. The vast number of important questions on the agenda clearly shows to what extent the Committee member countries are determined to continue the cooperation inspired by the basic principles of the Treaty itself.

Mr Chairman,

May I now turn to the Antarctic research activities carried out by Finland and I would like to refer to a report entitled "The Finnish National Committee on Antarctic Research" which was sent to the member countries of SCAR and which also formed a part of the annexes to the notification which was handled to the consultative members of the Committee. In that report some preliminary results are published covering the research work at the Finnish terrestrial station Aboa and the Antarctic maritime expedition FINNARP 89. We also annexed to the notification some general information about the Finnish know-how and research work concerning cold climate conditions which form a firm basis also for Antarctic scientific activities. The report gives also a fairly detailed description about the Finnish Antarctic station which was established in Vestfjella mountains Dronning Maud Land (73°03'S, 13°25'W). It should be mentioned here that the Finnish Ministry of Environment has given its appraisal as far as the protection of the environment of the Finnish station is concerned. We are going to put a very special emphasis on environmental elements in the Antarctic activities of Finland.

Besides the properly Finnish Antarctic activities important scientific research work has been carried out with other countries. Marine biological projects in the Weddell Sea and geological research work at the Australian Davis station have already now given fairly interesting results. It should also be mentioned that ozone layer sounding activities were started at the Argentinian station Marambio on 24th of November 1988 where Finnish Meteorological Institute provides for education in Argentina and equipment to the station. Unfortunately these activities were interrupted by a fire but they are going to be continued from the beginning of the next year. Corresponding soundings are carried out in the northern part in Finland, in Lapland, so that research results from the northern and from the southern hemisphere can be compared and analyzed in order to get important information about the ozone layer more globally. The Finnish Aboa Antarctic station includes Milos 200 meteorological station which has been sending automatically data through the French Argos system during all the Antarctic winter. Furthermore apparatus was

installed in the structure of the buildings of the Aboa station for measuring heat flow and air tightness of the building.

The Finnish Antarctic maritime expedition FINNARP 89 is the first large expedition to be arranged by Finnish scientific institutions since Finland signed the Antarctic Treaty in 1984. It is going to be a direct continuation so far and form an integral part of the overall program. A special research vessel "Aranda" owned by the Finnish Institute of Marine Research is setting sail for Antarctic in less than one month. She has been conceived in the way that she is operational both on the Arctic and the Antarctic Ocean, even if her main research area later is going to be the Baltic Sea. The research program of FINNARP 89 includes geological and glaciological research as well as gravimetric survey which all are taken place close to the Aboa station. In the Weddell Sea research is going to be concentrated in physical and chemical oceanography, marine biology and geology, ice research and ship technology. A medical research on the adaptation of man in cold climates and which was started last year will be resumed.

All the scientists participating in this expedition have been trained during one week and together with Swedish research people at a training camp on glaciers in northern Sweden.

The Finnish government is going to be very happy to inform all the signatories of the Antarctic Treaty of the results of the marine expedition in the near future.

May I take this opportunity to inform this Conference that Finland has decided to join the Convention on the Conservation of the Antarctic Marine Living Resources (CCAMLR). It should be taken as one further expression of will to further strengthen the objectives of the Antarctic Treaty system.

After these few technical explanations that I wanted to make in English, I would like to make a few final remarks on environmental protection in Antarctica before closing my speech. We are all aware today that the environmental issue in all its aspects has become highly important the world over. The activity of my government in this area is generally recognised, but I would like to point out the events that took place just a few days ago in Rovaniemi in Finland. Concerned by the rapid degradation of the Arctic environment, the Finnish government has taken an initiative with respect to the Arctic environment which aims at creating an international global regime. After several bilateral discussions led by the Finnish representatives with the other Arctic governments, the representatives of the eight Arctic countries were able to reach an agreement on several points of immediate action and on future cooperation for Arctic environmental protection. The fact that eight governments were able to agree in practically one week on an extremely important and concrete plan of action

is indicative of the degree of urgency that exists for commencing this cooperation to arrest the rapid deterioration of the environment in the Northern hemisphere. This cooperation will be open to other countries as results materialise.

Without going into the details of the subject which is on the agenda, I would simply like to say that the Finnish government will do everything in its power to strengthen environmental protection in Antarctica and will support all measures working towards this aim.

Mr Chairman,

Having acceded to Consultative status on the Committee, Finland is determined to pursue its activities with a view to strengthening the regime based on the Antarctic Treaty in order to meet its objectives that are so important for our planet and for humanity as a whole. Finland has supported these objectives since signing the Treaty in 1984.

Thank you, Mr Chairman.

OPENING ADDRESS BY AMBASSADOR HERBERT SUESS,

LEADER OF THE DELEGATION OF THE GERMAN DEMOCRATIC REPUBLIC

Mr Chairman,

First of all, I wish to congratulate you, on behalf of the Delegation of the German Democratic Republic, on your election as Chairman of the XVth Consultative Meeting.

We are convinced that your skill and experience in coping with such an extensive agenda, which you demonstrated already during the Preparatory Meeting in May, will contribute to the success of this Consultative Meeting.

We could also like to offer our thanks to the Government of France for hosting this Meeting and, in particular, for providing the kind of excellent working conditions we are enjoying here. Not least, we owe gratitude to Prime Minister Rocard for his remarkable speech in opening the Meeting.

Mr Chairman,

My Delegation is gratified that since the XIVth Consultative Meeting more States nave successfully applied for consultative status. This, indeed, reflects the confidence placed in the Antarctic Treaty and the growing awareness that there is no practicable alternative to a Treaty system that has proved its worth for decades now. Our warm congratulations go to the Delegations of these newly admitted Parties.

While the German Democratic Republic has approved of granting consultative status to the Republic of Korea on account of its scientific merits in Antarctica, my country's position on the Republic of Korea, with which it does not maintain diplomatic relations, and on the situation on the Korean peninsula in general, remains unchanged.

We warmly welcome the Delegations of Canada and Columbia on the occasion of their accession to the Antarctic Treaty.

Mr Chairman,

The agenda before us contains a number of extremely important issues whose solution may have a crucial impact on the future functioning of the Antarctic Treaty System. Without wanting to prejudge the discussion, we would attach particular importance to the whole range of environmental questions, which should be given priority at this Consultative Meeting.

We share the widely recognized view that even small changes in the Antarctic environment can have perceptible effects on the climate of the earth and that the unique biota of the sixth continent must be preserved by all means. To that end, the GDR has always sought to make sure that its scientists and the technical staff involved in Antarctic research comply strictly with the agreed measures and valid standards for the protection of the Antarctic environment. Like others, we are concerned at certain phenomena which prove that such necessary responsibility and care is not yet taken seriously enough by everyone. These phenomena include inter alia the markedly negative effects of Antarctic tourism in which also countries not parties to the Antarctic Treaty participate. In supporting the idea of re-examining the effectiveness of existing standards and developing new environmental impact assessment procedures that may be necessary, my Delegation's foremost concern is to restrict and, wherever feasible, eliminate the sources of environmental damage. What should not be restricted, in our view, is the proven principle of freedom of research in Antarctica, which serves as the basis for a type of intergovernmental co-operation whose level can be seen as a model to other spheres of international relations and from whose results all States may derive benefit.

Mr Chairman,

The GDR has repeatedly demonstrated than it values the Antarctic Treaty System highly and defends it from unjustified attacks.

Major reasons for my country's commitment to the preservation of the Antarctic Treaty are that the Treaty declares the whole of the sixth continent a completely demilitarized zone and that it prohibits any type of nuclear explosions and the dumping of radio-active waste, while only permitting the exclusively peaceful use of Antarctica.

The existing status of Antarctica, which has extraordinary political and legal significance, must in our view be preserved by all means in the interest of peaceful international interaction. In this context major importance attaches to the strict observance and implementation of Article IV of the Antarctic Treaty. Not only does it prevent the revival of old tensions and the emergence of new ones, but it also provides a basis for the Consultative Parties, aware of their shared and special responsibility, to adopt measures designed to promote the purposes and principles of the Antarctic Treaty, measures which, as is known, must be based on consensus decisions under the provisions of the Treaty.

Let me add a few general remarks concerning the Welllington Convention of 2 June 1988.

Quite naturally, not every single provision of the Convention meets with the GDR's unqualified support, but that was not to be expected anyway. When taking part in the negotiations on this instrument, the GDR was always conscious that they would finally lead to a codified balance of interests, based on Article IV of the Antarctic Treaty, whose compromise nature derives from its package deal character. Mindful of that, as well as of the lack of legal regulations in respect of the use of mineral resources on the sixth continent, the GDR feels that the Convention is what is feasible.

In the GDR's assessment of the Convention major importance attaches to the fact that the Convention provides for most stringent standards with regard to the environmental compatibility of any type of mineral activity and that a multi-stage examination procedure involving consensus decisions by all members of the Commission is required before an Antarctic area can be opened for actual mineral mining.

We therefore share the concern expressed over the fact that doubts have now been raised from among our ranks concerning this convention which is the result of several years of intense consensus-based negotiations. We agree with those who believe that a divided stand of the Antarctic Treaty States on the Mineral Convention will lead to risks with implications well beyond our circle.

Moreover, the GDR, a state whose activities will in the foreseeable future focus on the scientific exploration of the sixth continent, notes with some apprehension that the moratorium on mineral activities agreed in the Final Act is subject to an early entry into force of the Convention. This could again lead to a totally unregulated state of affairs where the conduct of mineral activities is concerned, which should not be in the interest of the States parties to the Antarctic Treaty.

Mr Chairman,

Especially since 1985, the Consultative Parties have adopted a number of measures aimed at the development of the Antarctic Treaty system, wider international cooperation, and at allaying reservations against the Antarctic Treaty.

These measures demonstrate that all Contracting States are ready and resolved to face up to new challenges in a spirit of constructive cooperation. We are confident that this spirit will prevail also at this XVth Meeting.

In conclusion, Mr Chairman, I wish to assure you that my Delegation is willing to render a constructive contribution to efforts to enhance cohesion and cooperation among the Contracting States and to make this Meeting a success.

Thank you, Mr Chairman.

OPENING ADDRESS BY DR KURT MESSER,

LEADER OF THE DELEGATION OF THE FEDERAL REPUBLIC OF GERMANY

Mr Chairman,

Firstly, allow me to congratulate you on your election on behalf of the Delegation of the Federal Republic of Germany. I am convinced that under your prudent guidance the Delegations will co-operate with one another in a friendly and constructive manner in order to make this Meeting of the Consultative Parties a success. We also sincerely thank the French Government for organizing this Meeting and for having so warmly welcomed us here last May and now.

We are pleased to note that the number of States party to the Antarctic Treaty has again risen since the last Consultative Meeting. The Antarctic system has thus been further strengthened. The steady increase in the membership underscores the Treaty's prestige, which has grown ever since it was concluded almost thirty years ago.

In our country there is an interest in Antarctica that extends far beyond the circle of experts. This interest springs, on the one hand, from the constant fascination for a continent that has largely remained untouched and, on the other, from the awareness of the fragile nature of this continent. The papers that we heard at the Preparatory Meeting last May and the discussions held over the ensuing months confirm that this concern is shared by the people of other nations. It is the duty of the States party to the Antarctic Treaty to take into account this concern and anxiety. We are therefore pleased to see that the draft agenda for this Meeting envisages dealing first of all with those matters that are of particular concern to the international public.

Recent accidental events have once again demonstrated the fragile nature of the Antarctic ecosystem and confirmed that the efforts traditionally made by the States party to the Antarctic Treaty to protect the Antarctic environment are becoming increasingly important at a surprising rate. The proposals submitted at the Preparatory Meeting as well as discussions have also shown that there is virtually no area of cooperation that does not involve the environment. The Antarctic Treaty Consultative Parties should therefore develop their cooperation in a responsible and efficient manner. In this cooperation, we will consider together how to improve further the current procedures for expanding environmental protection within the Antarctic system, not least by examining new avenues. My Delegation welcomes any new initiatives along these lines.

Scientific results obtained, for example, through climatic observations have shown to what extent Polar research and hence research in the Antarctica are essential in appraising global changes that are vital significance to humanity as a whole. Furthering scientific cooperation in Antarctica is therefore of key importance.

In order to achieve these major aims, the means available under the Antarctic Treaty System should be strengthened and extended in a flexible manner, while respecting the recognized and efficient basic principles of the Antarctic Treaty.

There is no panacea for some questions regarding the future of Antarctica. However, in seeking solutions, we should not forget that an agreement, even if it does not correspond to the ideal of all Consultative Parties, is essential for the Antarctic system as whole. The latter derives its stability and its success notably from the fact that until now we have arrived at a consensus on all important questions.

Mr Chairman,

My Delegation has the firm intention of contributing to the attainment of these aims by submitting its own proposals and by cooperating in a constructive manner with the Contracting Parties.

OPENING ADDRESS BY MR YUKIO IMAGAWA,

LEADER OF THE DELEGATION OF JAPAN

Mr Chairman,

In the name of the Japanese Delegation, I would like to extend my warmest congratulations on your nomination as Chairman of the XVth Antarctic Treaty Consultative Meeting. I am sure that under your expert guidance, this session will achieve its aims.

We are sincerely thankful to the Prime Minister, His Excellency Mr Rocard, for the warm welcome he has so kindly extended to us all. I would like to express the sincere recognition of my Delegation to the Government of France who has organised this Consultative Meeting following on from the Preparatory Meeting last May. I am sure that this Meeting, in this magnificent city, will add a new brilliance to the history of the Antarctic Treaty Consultative Meetings and that it will long remain in the memory of the participants.

Today, Finland, the Republic of Korea and Peru have been admitted as new Parties to the Consultative Meeting and are welcomed as such.

These three countries have already been active in research work in Antarctica and so can justifiably be admitted as members of the Meeting. I am sure that their presence will contribute enormously not only to the most important deliberations at the Meeting but also in strengthening and extending the current Antarctic Treaty System.

My Delegation is also pleased to note that Canada and Colombia joined the Treaty since the XIVth Consultative Meeting, and sincerely hopes that those countries not parties to the Treaty will become so in order to make the Antarctic Treaty more complete.

Mr Chairman,

In the past few years, interest in global environmental problems has been increasing. As far as Antarctic environmental protection is concerned, the Antarctic Treaty has proven its efficacy through careful considerations, by adopting three Conventions, two of which are already in force, Agreed Measures and numerous Recommendations.

During this Consultative Meeting, we have the important task of furthering the study of additional measures that should be taken to protect the Antarctic environment. We believe that these considerations should be based on an

objective evaluation of the impact of human activity on the environment and that plausible measures should be drawn up.

In conclusion, Mr Chairman, I would like to assure you that my Delegation is prepared to make all the efforts required to make this meeting a success.

Thank you.

OPENING ADDRESS BY AMBASSADOR WOO SUK HAN,

LEADER OF THE DELEGATION OF THE REPUBLIC OF KOREA

Mr Chairman,

On behalf of the Delegation of the Republic of Korea, I would like to extend to you my warmest congratulations on your election as Chairman of the Fifteenth Antarctic Treaty Consultative Meeting. I trust that, under your able leadership, this meeting will produce much positive results in our common endeavor to promote the goal and objectives of the Antarctic Treaty. I also wish to thank the Government of the French Republic for the excellent arrangements for this meeting.

Mr Chairman,

My Delegation is greatly honored to participate the meeting as a Consultative Party for the first time. The XVth Consultative Meeting has particular significance to my Delegation. It is the first Consultative Meeting in which the Republic of Korea participates in the capacity of a Consultative Party. This is, indeed, a great privilege and honor that the Republic of Korea, which my delegation represents, is being admitted as a Consultative Party to the Antarctic Treaty. And I wish to express our sincere appreciation to all Consultative Parties for their support and cooperation.

Taking this particular occasion, my Delegation wishes to reiterate our commitment to the principles and objectives of the Antarctic Treaty System and our determination to co-operate in the spirit and purposes of the Antarctic Treaty. Antarctic activities of the Republic of Korea are well known. They have been motivated by scientific interest and quest for the unknown continent. Since 1978, Korea has annually dispatched its scientific expeditions to the area. The results of researches have aroused public interest in my country, which has turned into popular support, enabling the launching of a permanent station in the Antarctic. With the establishment of the over-wintering King Sejong Station in February 1988, Korean scientists become able to carry out more systematic and sophisticated research programs.

We firmly believe that the Antarctic should be managed in a highly responsible manner in which the common interests at stake are fully taken into account. In conducting scientific researches in the area, the Republic of Korea clearly recognizes that the Antarctic environment is extremely vulnerable to human activities. The Republic of Korea has strictly abided by the rules and regulations for the

protection and preservation of the Antarctic environment, evolved through the Antarctic Treaty System.

The whole staff of our station work under the standing instruction to give top priority to environmental concern. Proper equipments such as the internationally approved sewage treatment units and incinerator in the station are under operation to avoid any adverse effect. Contingency response plans have also been formulated, to mitigate and minimize the impact of a possible accident on the surrounding environment. Prevention is better than cure and forethought preferable to afterthought: this is the maxim lying in the heart of our activities. The Republic of Korea wishes and pursues to be an example in the environmental perspective.

We also believe that international co-operation and co-ordination is essential and indispensable. We will continue to work with scientific communities and agencies of the world in our planning of future programs and their implementation.

The Korean Government is prepared to allow access to all data, samples and technical plans developed or possessed by our scientific team. For instance, we have recently designed and constructed a new equipment set of high resolution Fabry-Perot interferometer at the King Sejong Station to study solar winds, their origin and evolution. We would like to inform you that a brochure containing data and information acquired from this program will be soon distributed here.

Mr Chairman,

Activities in the Antarctic have expanded in kind and scale. With a view to responding to new challenges more efficiently, we gathered here to promote international co-operation. The agenda before us contains a number of important issues which draw our particular attention.

My Delegation will spare no efforts, in collaboration with other Delegates here present, to make positive contributions to this meeting.

Thank you.

OPENING ADDRESS BY MR CHRISTOPHER BEEBY,

LEADER OF THE NEW ZEALAND DELEGATION

Mr Chairman,

It is good to be in Paris. Thanks to the excellent facilities provided by the Government of France and with your able Chairmanship we are well placed to make good progress at this Fifteenth Antarctic Treaty Consultative Meeting.

It is vital that we do make progress here in Paris so that we discharge our responsibilities to Antarctica, to each other and to our publics. There is a great deal of interest in this meeting. No longer is Antarctica of concern only to a few countries and individuals that pursued its somewhat remote charms. Now there is global interest in the southern continent, New Zealand's southern neighbour. People want to know what is going on there. What happens in Antarctica has the potential to affect the rest of the world. We can expect, therefore, that what we do here and the results we achieve will be studied carefully and critically.

We are fortunate in having a sound basis for effective action. The long tradition of close co-operation among the Treaty Parties in Treaty meetings as well as in Antarctica itself has produced an impressive range of measures to regulate human activity in Antarctica and to protect the Antarctic environment. We expect to add to that record at this Meeting. I am thinking in particular of the revised Code of Conduct on Waste Disposal that has been prepared by SCAR and the progress that can be made in developing further the network of protected areas in Antarctica. We must take full advantage of this Meeting to move ahead on these and other items that are ripe for the adoption of specific measures.

This Meeting is also significant for the opportunity it gives us to take a broader look at the fundamental issue of protection of the Antarctic environment. We can all be grateful to the Delegation of Chile for its initiative to include on our agenda for the first time Item 7 concerning Comprehensive Measures for the Protection of the Antarctic Environment. The inscription of this item and the support it received at our Preparatory Meeting in May reflects the widespread recognition by the Treaty Parties that, notwithstanding the environmental protection measures already in place under the Treaty system, we need to look to a more comprehensive and integrated regime of environmental protection for Antarctica.

New Zealand's support for such a regime has been expressed in the White Paper on the Antarctic Environment that was presented to the New Zealand House of Representatives by the Prime Minister, the Right Hon. Geoffrey Palmer, on 9 August. That Paper states a clear commitment by the New Zealand Government to the elaboration of an integrated set of measures that builds on the previous achievements of the Treaty system to secure effective and comprehensive protection for the Antarctic environment. The proposals described in the White Paper are given more detailed expression in the Working Paper that we are putting forward at this meeting under Item 7. Through the Working Paper, which we will introduce in the debate that is to begin shortly, we seek to contribute to and advance the discussion that has already begun on identifying the means that will best ensure the protection of Antarctica and its environment.

Just as public interest in Antarctica has grown within our countries, so too has the interest of countries outside the Treaty. We are pleased to welcome the latest adherents to Treaty membership, Canada and Colombia. We also congratulate those that have attained Consultative status since our last meeting in Rio de Janeiro: Spain, Sweden, Finland, Peru and Republic of Korea. This continued growth in Treaty membership is proof of the vitality and success of the Treaty system.

By tradition Consultative Meetings are characterised by frank and friendly debate and a constructive search for acceptable solutions to commonly identified problems. The New Zealand Delegation will do its best to uphold that tradition and to contribute to a successful outcome to this Meeting.

OPENING ADDRESS BY MR ROLF TROLLE ANDERSEN,

LEADER OF THE NORWEGIAN DELEGATION

Mr Chairman,

Matters pertaining to the environment have long been central to the work at Consultative Meetings. Discussions under the agenda item on Man's Impact on the Environment, as well as under specific environmental items, have regularly resulted in important recommendations. Concerns about the environment have led to a number of legal instruments, such as the Agreed Measures, the Convention for the Conservation of Seals, the CCAMLR and the CRAMRA.

The Treaty Parties are proud of their tradition of foresight, of solving problems before they become contentious issues. They have consistently sought to achieve the best possible results - in light of available information and knowledge, and based on perceived needs.

There is reason to be satisfied with the track record of the Antarctic Treaty System. Considerable work has been done. A network of regulations is in place. When we now look towards the future, we must not lose sight of this accomplishment. We cannot afford to lose the achievements of 30 years of hard work.

The agenda we have set for ourselves demonstrates that our work will never be complete. Increasing activity, and a continuously developing understanding of the impacts of such activity require of us a constant and dynamic ability to review the status quo: are we satisfied with the regulations already in place, do we need to revise them, do we need to regulate new areas?

We will have ample opportunity to do just that, when we embark on our deliberations. The agenda offers us the necessary basis for an in-depth assessment of what needs to be done.

The agenda is full, and we would be well advised to get our work under way as quickly as possible. We have nine days in which to demonstrate that our traditional way of reaching important consensus decisions is still effective. It is the firm hope of my Delegation that we will succeed in getting concrete results at this meeting.

A focal point of our agenda this time would appear to be the new item on "Comprehensive Measures". This item offers us the opportunity to engage in a full consideration of matters pertaining to the protection of the Antarctic environment. Proposals have already been foreshadowed or circulated on a

preliminary basis. The Norwegian Delegation will contribute actively towards consensus solutions.

Our embarking on this general topic must not, however, make us lose sight of the need to make substantial progress on the other individual environmental items. Some of those items cover areas where immediate regulations are required. Agreement must be reached at this meeting.

While questions relating to the environment will rightly take up much of our time, we also have to bear in mind the need to progress in other fields. Matters dealt with under "The Operation of the Antarctic Treaty System", questions relating to scientific cooperation, and our traditional technical "housekeeping" questions are examples of areas which also will need attention;

Mr Chairman,

The world is changing, and so is the Antarctic. Matters pertaining to Antarctica are no longer the reserve of those with traditional interest. The world is watching what we decide to do, or not to do. Albeit much of this interest is due to developments outside Antarctica, it is nevertheless an interest which is real and legitimate. Concerns about the future of our planet, about possible climate changes, and dramatic changes in the ozone layer have lead to a stronger international awareness of the need to protect the global environment. There is a growing understanding of our mutual interdependence, and the need to pull together in order to find effective and lasting solutions.

We, the Parties to the Antarctic Treaty, have taken upon ourselves the obligation to manage the Antarctic. We have proven that we can do so, and that we are constantly prepared to look ahead. We must now take the opportunity to demonstrate that we have the ability and will to stick together in the search for meaningful regulations. We must safeguard past achievements. We must build on existing instruments. Above all, we must protect the most valuable accomplishment of all: the singular political co-operation in Antarctica. We have gotten used to taking this for granted because of our history of consensus decisions. We must not lull ourselves into believing than once there, this precious achievement will always remain. On the contrary, we have reached this cooperation by a constant awareness of the need to pull together for the common good. Through hard compromises we have managed to reach necessary, although sometimes difficult consensus decisions. This spirit has been the strength of Antarctic Treaty System. This spirit must prevail also in the future if we are to keep and further strengthen the Treaty System.

OPENING ADDRESS BY MR JANUSZ MICKIEWICZ,

LEADER OF THE DELEGATION OF POLAND

Mr Chairman,

At the outset, let me join the preceding speakers in congratulating you on your election. I am convinced that under your able and experienced guidance the XVth Consultative Meeting will produce the best possible results.

I would like also to thank the French Prime Minister, Monsieur Michel Rocard, for his warm welcoming words, and to express sincere gratitude to the Government of France for the excellent facilities put at the disposal of this meeting.

It is great pleasure for me and for my colleagues from the Polish Delegation to come to this beautiful country linked with Poland always by traditional bonds of friendship.

Mr Chairman,

We continue to be in the fortunate situation that our Antarctic family of Consultative and Non-Consultative Parties is constantly growing. That encouraging fact implies, on the other hand, an obvious need to shorten opening addresses. In this spirit, I will try to be brief.

It is appropriate to recall that our meeting coincides with the 30th anniversary of the Washington Conference which elaborated the Antarctic Treaty. The world of 1959 was different from that of 1989. It was a world of intense political and military rivalry. Therefore we should pay a great tribute to the authors of the Antarctic Treaty that, despite this disadvantageous situation, they were able to set aside the problems which divided them, in order to affirm the common interests of the whole mankind. They created the first international instrument under which an entire continent was declared a non-military and denuclearised zone. They established a firm basis for international scientific co-operation. From the beginning, the protection of the unique and fragile Antarctic environment has been the main concern of the Parties of the Treaty, and especially the Consultative Parties.

Mr Chairman,

My Delegation would like to extend its warm welcome and sincere congratulations to Finland, Peru and the Republic of Korea which have now joined us as Consultative Parties. They have already demonstrated their interest in Antarctica in

various forms. We are convinced that their participation in the Antarctic Treaty System will strengthen our common efforts to achieve its noble objectives.

Passing now to the agenda of our meeting, I wish to say that it contains a number of important and sometimes complex points. The Polish Delegation, and especially my four learned colleagues with profound experience in the Antarctic issues, is looking forward to participating with other Delegations in the discussions on all of these points.

Undoubtedly, the main subject of this meeting will be the item "Comprehensive measures for protection of the Antarctic environment and dependent and associated ecosystems". Without going into details at this stage, I wish to emphasize that in the opinion of the Polish Delegation priority should be given to the protection of the Antarctic environment. Unfortunately, even small changes in the Antarctic environment could generate painful repercussions for the whole planet. Nevertheless, legal instruments in force in the Antarctic Treaty System should not be weakened, including the rights of States engaged in research or harvesting activities with due regard for the provisions of the Convention on the Conservation of Antarctic Marine Living Resources.

We hope that this entire problem will be solved in a realistic and satisfactory manner.

Finally, I am pleased to inform you that a few weeks ago the Government of Poland approved all recommendations adopted by the previous Consultative Meetings.

Thank you, Mr Chairman.

OPENING ADDRESS BY DR. J. SERFONSTEIN,

LEADER OF THE SOUTH AFRICAN DELEGATION

It gives me great pleasure to congratulate you, Sir, on your election as Chairman of this meeting and I would like to assure you of the fullest support of the South African Delegation.

Mr Chairman,

The South African Delegation, which consists of an almost new team, welcomes the opportunity to be able to attend this meeting in Paris. We are especially thankful for the fact that the French Government has so graciously agreed to host the meeting in Paris, one of the most beautiful cities in the world. The Delegation realizes that a great deal of effort went into the preparation and also into the execution of this meeting and hopes that the deliberations will be fruitful and will lead to a better understanding and improved co-operation amongst the members of the Treaty.

South Africa is aware of the changing mood regarding the protection and wise use of the environment and the natural resources of the world. Our country has a proud record of environmental conservation and our concern with the environment is also reflected in our involvement and present research in Antarctica and will in future be reflected even more in the contents of our research projects. The Delegation therefore welcomes the emphasis placed on environmental matters at this meeting.

As one of the original signatories to the Antarctic Treaty, South Africa is in full support of the Treaty and its achievements and would like to see that the instruments developed over the years be strengthened and implemented. South Africa feels that the Treaty members have a sound foundation on which to build for the future. Due to its proximity, environmental developments in Antarctica might exert a more direct influence on South Africa than on most other members of the Treaty: for this reason also, South Africa welcomes the new awareness in dealing with environmental matters in Antarctica. The Delegation is therefore committed to a strong stand on environmental matters at this meeting and future deliberations.

In this context, a specific contribution we would like to make to this meeting is to assist in the development of a contingency plan for oil spills in the Antarctic region. We feel that the substantial experience we have gained on our own coastline may contribute towards the drawing up of such a contingency plan for the Antarctic. We trust that Delegations

will benefit from, and further develop on, ideas put forward in this document.

South Africa would also like to see much closer co-operation and a co-ordinated approach to research in future. Our country has participated in several international programmes in the past and will continue to do so in future. In furtherance of this objective we hereby announce that during the early part of 1990 a research cruise will be undertaken by the South African research vessel, the R.S.AFRICANA, in Antarctic waters and scientists from Treaty countries will be invited to participate in the expedition.

The new developments and fresh thinking about Antarctica, especially as far as the environment is concerned, may well open up a new era: South Africa is ready to move into this new era with enthusiasm. The South African Delegation feels confident that the deliberations of this XVth meeting will go a long way towards determining the direction and content of these new ideas.

OPENING ADDRESS BY MR MIGUEL ARIAS,

LEADER OF THE DELEGATION OF SPAIN

Mr Chairman,

On behalf of the Delegation of Spain, I would first like to congratulate you on your election as Chairman for the XVth Antarctic Treaty Consultative Meeting. This XVth Meeting is especially significant for my country as it is the first we are attending as Consultative Party. We extend our sincere thanks for the kind words of congratulations that we have been paid.

It is only normal that our gratitude should be more particularly directed to France, whose generosity has enabled us to meet here in this splendid city of Paris, and moreover in the year of the Bicentenary of the French Revolution.

We would also like to reiterate our thanks to the Consultative Parties that supported our candidature. We are pleased to see that along with the Kingdom of Spain, the Kingdom of Sweden has also acceded to Consultative status and to whom we also extend our sincere congratulations.

We believe, Mr Chairman, that there is no need in going into detail here on the merits of Spain's commitment to Antarctica. However, we do feel that at least brief mention should be made of our three Antarctic expeditions to which should be added the forthcoming 89-90 campaign; the establishment of the Juan Carlos I Scientific Base; the construction of a polar vessel which it is hoped will be launched at the end of 1990; the drawing up of a Research Programme specific to Antarctica under the National Scientific Research Plan; as well as other scientific activities carried out with the invaluable collaboration of Argentina, Australia, Belgium, Chile, Federal Republic of Germany, and Poland.

Mr Chairman,

The agenda of this XVth ATCM includes a series of major points among which is the protection of the Antarctic environment.

In this regard, the Delegation of Spain shares the concern of public opinion. It is for this reason that we believe it is necessary for this Consultative Meeting to examine in depth this subject for which proposals have already been submitted by other Delegations. Spain is examining these proposals closely.

In this respect, the Delegation of Spain, aware of the specific and fragile nature of the Antarctic ecosystem, considers it would be opportune to call a meeting specifically to draw up a broad regime for environmental protection in Antarctica and for its dependent and associated ecosystems.

We are convinced that the Antarctic Treaty System, which goes hand in hand with the consensus system, and without being unfaithful to that key feature of its personality, will be able to rise to this challenge.

To conclude, Mr Chairman, I would like to say that the Delegation of Spain will do its utmost to contribute actively to achieving successful results in this Meeting.

Mr Chairman, thank you

OPENING ADDRESS BY MRS DESIREE EDMAR,

LEADER OF THE DELEGATION OF SWEDEN

Mr Chairman,

On behalf of the Swedish Delegation I would like to congratulate you upon your election as Chairman of the Fifteenth Antarctic Treaty Consultative Meeting. It is already evident that this meeting will constitue a milestone when it comes to further improvement of the protection of the Antarctic environment. The valuable address by Prime Minister Rocard gave an inspiring impetus to our work. It is of course also beneficial that the meeting takes place in the cultural and intellectual environment of one of the greatest cities of the world.

We are convinced, Mr Chairman, that under your wise guidance, we will achieve constructive results. This is particularly important at this meeting.

The Swedish Delegation would like to extend its congratulations to the new Consultative Parties, all of which have amply demonstrated their commitment to Antarctic research and to the common objectives of the Antarctic Treaty System. We are looking forward to working with you.

Mr Chairman,

Environmental concern is no luxury - it is basic to our survival. Almost two decades have passed since the 1972 Stockolm Conference on the Human Environment. These decades have confirmed the fundamental importance of environment issues. Domestic measures such as legislation, economic means for research, etc, help but are far from sufficient. Environmental pollution is transboundary in character. Decisive efforts are needed at the international level to prevent a further degradation of the human environment.

Even if the environmental dangers are more and more recognized, we often find that too little is actually done too late. The time that lapses between the recognition of a threat, an insight of the need to do something about it, the organisation of a conference on the issue and the implementation of an action plan to reach concrete results, is no doubt far too long.

In this regard however, the Antarctic Treaty System could serve as a good example. The States Parties to the Antarctic Treaty have shown a concern for protection before the environment has been really threatened, and measures have been taken in order to prevent infringements of the vulnerable

Antarctic nature. The Antarctic Treaty System offers a good basis for further steps in this direction.

Today we meet an even greater challenge. The Antarctic continent and related ecosystems have now come into focus. It has become obvious that the future of the Antarctic environment is of increasing concern to the public opinion and non-parties to the Antarctic Treaty. The Treaty parties have recognized the need for a more extensive protection regime and steps are being taken to enhance the protection of the environment within the framework of the Antarctic Treaty System. Sweden warmly welcomes this development.

In order to meet the new challenges, it is clear that only concrete results will count. Years of discussions or statements of a general character will not bring us further. We must proceed with resultoriented action. The Antarctic Treaty System offers not only a mechanism but also a network of environmental measures. Starting from this, we must now go ahead by identifying further needs and continue to discuss the actions required.

The nature of the threat to the Antarctic environment is different from environmental problems in other parts of the world. It is quite obvious that if a polar ecosystem is damaged, it is often a slow process - not to say impossible - to restore it. The protection of a polar environment must therefore in the first place be of a preventive nature. If negative environmental impacts occur notwithstanding the protective efforts, a safety net of reparative character must be established.

Mr Chairman,

In order to achieve early, lasting and tangible results, we must avoid duplication of work. We must benefit from every existing knowledge and experience of the polar environment. The catchword here is co-operation - at the political and at the scientific levels.

The question is then: Where do we go from here?

Sweden believes that the Antarctic Treaty Parties must call a new Consultative Meeting - preferably a Special Consultative Meeting - in 1990. This meeting should focus on comprehensive protection measures for the Antarctic environment. The protection of the environment is, and will continue to be, a developing process - something that we need to address continuously in the future. One aim and result of the meeting must therefore be to develop the already existing mechanisms. But we also need to identify and meet without prejudices the new challenges facing us. The form we choose to respond to them is less important than the substance.

In order to meet more acute needs or to respond to already identified demands, priority must be given to measures in areas where it is urgent and necessary to achieve quick results. The "environmental infrastructure" which already exists within the Treaty system should save as a good basis. Thus, a meeting must not be used as an excuse for postponing actions that can be taken already today. If agreement is reached to hold a Special Consultative Meeting we would like to suggest that a time limit be set.

A meeting on environment issues must be well prepared in substance if we are to achieve both well-founded and quick results. Sweden is willing and eager to contribute substantively to the preparations of an Antarctic Treaty Meeting on the environment.

Mr Chairman,

This statement has focused on environmental aspects of developments in Antarctica. These are priority issues. The agenda of our meeting here in Paris also lists a number of other items of both political and practical importance in regard to Antarctic co-operation. The Swedish Delegation will address these issues when we get to them. We are looking forward to two weeks of inspired and constructive work.

OPENING ADDRESS BY DR A.N. CHILINGAROV,

LEADER OF THE U.S.S.R. DELEGATION

Mr Chairman,

I should like to join the other Delegations who have spoken before me in conveying to you my sincere congratulations on your election as Chairman of our Meeting.

Allow me likewise to thank, through you, the French Government for the excellent conditions it has provided for our Meeting.

On behalf of the Delegation of the Soviet Union, I should also like to extend greetings to the Delegations of Finland, Peru and South Korea, which countries have acceded to the status of Consultative Parties to the Antarctic Treaty.

In the opinion of the Delegation of the Soviet Union, the increase in the number of Parties to the 1959 Antarctic Treaty and the growing number of Consultative Parties bear witness to the fact that many in our international community now realise the incalculable importance of the existing Antarctic System.

In our view, the 1959 Treaty is successful because it is based on practical experience of governmental activities in Antarctica and because the original Parties displayed the political will to come to the compromise they achieved as the only possible means of resolving the complex political problems connected with Antarctica.

Within the framework of the Antarctic Treaty, the most important feature of which lies in the fact that the entire sixth continent has been declared a completely demilitarized zone, we consider that increasing attention should be focused on concrete measures geared to further perfecting the regime for safeguarding the unique natural environment of the region.

Allow me, Mr Chairman, to voice the hope that the participants will avail themselves of this meeting to impart added strength to the ideals of international scientific co-operation in Antarctica, by which our expeditions have been guided since 1957. We are, moreover, convinced that our co-operation will work to the advantage not only of the direct participants, but will also serve the interests of science and progress for all mankind.

Thank you, Mr Chairman.

OPENING ADDRESS BY DR J.A. HEAP,

LEADER OF THE DELEGATION OF THE UNITED KINGDOM

The United Kingdom Delegation wishes to thank the Prime Minister of France, Mr Rocard, for so graciously opening our meeting and for his inspiring remarks. My Delegation is indeed grateful for the opportunity to carry forward our common endeavours aimed at ensuring that Antarctica contributes all it can to the common good on an environmentally sustainable basis and wishes to thank the Government of France for the magnificent facilities it has made available to us for that purpose.

Since we last met in Rio de Janeiro two years ago, the "ozone hole" has been politically discovered, some three years after its physical discovery was announced in a brief letter to Nature by members of the British Antarctic Survey. Perhaps more than anything else, this discovery has alerted the world to the need to take care of the environment that sustains its growing population. It was a discovery that was made in Antarctica. It would not have been made but for the political accommodation made thirty years ago and enshrined in the Antarctic Treaty. Continued care of that political accommodation must be a priority overriding all else.

The widespread concern for the environment has led to a considerable campaign to enhance its protection in the Antarctic. This is right; it is important that Antarctic activity should not threaten the capacity of the Antarctic to continue to provide scientific results of which the world stands very much in need. So, Mr Chairman, my Delegation believes that our first priority, both here in Paris and in the future, is to encourage research in Antarctica into issues of global significance at minimum environmental cost.

However, Mr Chairman, there is another aspect of the campaign for Antarctic environmental protection which gives us pause for concern. It is a matter of common knowledge, highlighted by the report of the Brundtland Commission on "Our Common Future" that within the next century finite world resources will have to provide food, energy and materials for a global population double its present size. In that context, my government believes that Antarctica should be able to contribute all it can to the common good in an environmentally sustainable manner and in a way that does not add to the threats to the global environment. It is in the light of that belief that the Government has enacted legislation which will enable the United Kingdom to ratify the Antarctic minerals convention within the next few months. This has been done in the firm belief that the Convention, once it has entered into force, will ensure that degree of environmental sustainability which is at the root of British policy. In particular, the Government has welcomed the provision, central to the

convention, that no Antarctic mineral resource activity may take place until there is adequate information to enable informed judgements to be made that it will not cause the environmental consequences which critics of the Convention fear. The British Government therefore sees no justification for an a priori judgement that Antarctica should not, in this fields as in others, contribute what it can to the common, good. It may turn out that it cannot contribute anything - either because nothing is there or becauce the environmental terms of the Convention cannot be met. In either case, so be it. If other human activities posing environmental risks elsewhere in the world were to be governed by such a principle we might all breathe easier.

Against this background, the British Government is looking forward to the achievement of six objectives. The first is to take further steps here to give concrete expression to our common desire to protect the environment in the areas of waste disposal, marine pollution, marine accidents and tourism. The second is to reach a common understanding as to the sort of activity which should trigger the implementation of Comprehensive Environmental Evaluations and to extend them beyond the field of scientific research and science logistics to which they presently apply. The third is to initiate a comprehensive review of existing environmental protection and conservation measures with a view to increasing their coherence and adding to them where that is necessary. The fourth is further to enhance the protection of the Antarctic environment in the minerals field by negotiating the Liability Protocol required under Article 8 of the Antarctic Minerals Convention. The fifth, to which I have already referred, is to encourage the pursuit of scientific investigations in the Antarctic which are of global significance along lines being actively pursued by the Scientific Committee on Antarctic Research. The sixth is to take steps towards the infrastructural development of the Antarctic Treaty in a manner which will enhance our capacity to cooperate in pursuit of common objectives.

We look forward to making progress towards all these objectives at this meeting.

Thank you, Mr Chairman.

OPENING ADDRESS BY MR RICARDO GALARZA,

LEADER OF THE DELEGATION OF URUGUAY

Mr Chairman,

In the name of the Delegation of Uruguay, I would like to extend my most sincere congratulations to yourself and the Secretary on your appointments in this XVth Consultative Meeting with the certainty that under your guidance our work will have the success that this event merits.

Our Delegation also extends its thanks to the French Government and people for their warm hospitality and the facilities that have made available for the Meeting to take place.

We would like to welcome and congratulate the new Consultative Parties and we rest assured that they will play an important role in our Antarctic Community.

The presence of the Non-Consultative Parties is also highly satisfying.

The Meeting being held here in the Paris of 1989 is of an especial nature since as it is taking place against the background of the celebration of the Bicentenary of the French Revolution which was of such historic importance.

The Antarctic Treaty for which we are here today, the basic bond in the System to which it gave its name, has been and continues to be an innovative text and exemplary in international relations through the work of a group of visionary states.

Its virtues range from its simple but efficient institutional form through to its exceptional main underlying principles which have conditioned a safe, efficient and pragmatically responsible regime, that has grown over nearly thirty years, foretelling of virtually indefinite continuation, both in unity of thought and action obtained through negotiation and still open to questions of a current nature. In this context, 1991 will be a simple step along the way dedicated to the discussion in order to continue with the firm conviction of having taken the right path far from utopian or alienating deviations.

A close examination of the topics we shall be discussing during the Meeting show that the main concerns of the States working in and for the Antarctic are not new but have been given greater importance: protection of the Antarctic environment and international cooperation. Our Delegation is ready to support all measures that effectively put these

principles into practice in a context that combines with other instruments under the Antarctic System that are already in force or soon to be so.

This System that has always shown its ability to evolve coherently now gives us a further example of this in the form of the Convention adopted for the Control of Antarctic Mineral Resource Activities. This document, in our view, without being perfect, like everything that his human, creates a regime that is far-sighted, orderly and realistic. It takes into account the various interests involved, avoids conflicts on the confrontation but above all it seeks to protect the Antarctic environment and its dependent and associated ecosystems. This orientation is no more than a faithful reflection of the essence and spirit that summarises the Antarctic Treaty System of which this Convention will sooner or later be part.

In the light of the foregoing, the Delegation of Uruguay will make every effort to ensure that the major topics that have brought us here will be successfully concluded.

Thank you, Mr Chairman.

OPENING ADDRESS BY AMBASSADOR CHRISTO TEPAVITCHAROV,

LEADER OF THE BULGARIAN DELEGATION

Mr Chairman,

On behalf of the Bulgarian Delegation, I would like to congratulate you on your election as Chairman of the XVth Antarctic Treaty Consultative Meeting. Let me also, through you, convey the warm thanks of my Delegation to the Government of France for the kind invitation to participate in this Meeting and for the excellent conditions and facilities provided for productive work.

At the very outset, we would also like to extend our congratulations to Spain, Sweden, Finland, Peru and the Republic of Korea which are participating in the Meeting as Consultative Parties.

Mr Chairman,

Bulgaria acceded to the Antarctic Treaty on 11 September 1978 motivated by a firm conviction that it would be the interest of all mankind if Antarctica remains forever an area used exclusively for peaceful purposes, where the freedom of choices of scientific research encourages and facilitates international cooperation and limits the ground for rivalry and confrontation. For 28 years, the Antarctic Treaty System has proved its workability and its ability to live up to the principles defined by the Washington Treaty. Bearing in mind these considerations, the Bulgarian Government will continue to do its best to strengthen and develop the international legal regime of Antarctica in full compliance with the assumed Treaty obligations.

Bulgaria has long believed that one important way to strengthen the Antarctic Treaty System lies in the promotion of international co-operation and the conducting of scientific investigation in such a way as to safeguard the rights of all states in this respect by allowing them to take advantage of the basic principles enshrined in the Antarctic Treaty System regardless of their stage of development, of the insufficient experience they may have or the limited resources they can allocate to the Antarctic scientific programs. Due to the high interest for Antarctic scientific investigation and the recognition of the necessity to involve more scientific efforts regardless of political differences or considerations, valuable cooperation with the British Antarctic Survey and the Soviet Arctic and Antarctic Research Institute made it possible for six Bulgarian scientists to take part in several joint research projects in Antarctica in 1987-88. While gaining practical experience for carrying out research work under the extreme

conditions in Antarctica, which is important for subsequent further projects, some complex scientific investigations were initiated. I avail myself of this opportunity to extend once more our gratitude to the British and Soviet institutions for their readiness to collaborate with us and to express the belief and the wish of the Bulgarian scientific community to see this cooperation and assistance continued and enlarged in the future.

Mr Chairman,

One of the challenges which the Antarctic Treaty System is facing now is the protection and preservation of the fragile Antarctic environment. The relatively untouched Antarctic environment is particularly vulnerable to human interference, which is rapidly growing. It is the responsibility of the Treaty Parties, especially those with consultative status, to elaborate comprehensive measures for the protection of the Antarctic environment. In doing so, we should not ignore the available scientific information from other programs for scientific investigations showing that the processes which we are detecting in the Antarctic environment are closely interrelated to global environmental problems generated in other parts of the world and that as such they are of interest not only to the State-Parties to the Antarctic Treaty but to mankind as a whole. In the view of my Delegation, the protection of the environment, and in particular the Antarctic environment, is a priority issue, which needs all the efforts, talent, imagination, good will of scientists and politicians, and determination to deal with those problems in an efficient and speedy manner. It also needs understanding and some financial sacrifice by the highly developed nations to speed up scientific research to make freely available all results conducive to the development and the introduction of waste-free and clean technologies on a world scale.

Through you, Mr Chairman, the Bulgarian Delegation would like to convey its thanks to the Prime Minister of France, Mr Rocard, for the opening address which will certainly contribute to clarify the issues on which substantial results are expected from the XVth Antarctic Treaty Consultative Meeting.

Thank you, Mr Chairman.

OPENING ADDRESS BY AMBASSADOR B. VALLADARES,

LEADER OF THE DELEGATION OF ECUADOR

Mr Chairman,
Distinguished Delegates,

On behalf of the Delegation of the Republic of Ecuador, I would like to congratulate you, Mr Chairman, on your successful election to chair the XVth Antarctic Treaty Consultative Meeting.

Ecuador has historically demonstrated its interests in scientific research in Antarctica. As a result of this interest, Ecuador initially made efforts in collaboration with other countries. However, more recently, it made it first scientific expedition alone in the southern summer of 1988. The findings of this expedition are brought to the attention of the Consultative Parties in the document entitled "Ecuadorian Antarctic Act".

The Ecuadorian Delegation would like to take advantage of this occasion to inform the Meeting that a second expedition is scheduled to leave Guayaquil city on 3 February 1990. As can be seen in the paper we have submitted, the vessel "Orion" will be used for this expedition. The Consultative Parties will be advised of the results of scientific research in due course. The efforts deployed by Ecuador are being made despite its limited means, as is the case in developing nations. Ecuador will pursue its efforts because it is aware of the importance of scientific findings obtained in Antarctica for the international community.

Finally, Ecuador trusts that, in the interests of humanity, Antarctica will continue to be used exclusively for pacific ends.

The Ecuadorian Delegation extends its best wishes for every success of the Meeting for the sake of the aims enshrined in the Antarctic Treaty.

OPENING ADDRESS BY MR A. BOS,

LEADER OF THE DELEGATION OF NETHERLANDS

Within the system of international law the Antarctic Treaty takes a rather unique place. Some forty governments from all parts of the world have taken it upon themselves to share responsibilities and to develop common policies with regard to this most southern part of the globe, an endeavour truly international in every respect. These common policies aim at maintaining Antarctica as an area to be used for peaceful purposes only and at promoting international scientific co-operation within the Treaty area.

The Netherlands belong to the category of long-time supporters of the Antarctic Treaty. For us it was self-evident that we should accede to this Treaty, given our tradition of so many centuries of promoting peaceful international co-operation through the development and voluntary acceptance of international legal instruments by sovereign governments. Since our accession to the Treaty in 1967, we have played our part as a non-consultative party in further refining this system by the development of a large number of specific recommendations and provisions. In particular since the beginning of the present decade our scientists have been making substantial contributions to Antarctic science.

For most people the Antarctic represents the extreme South, the extreme cold and the extreme desolate. For those who learn to know the Antarctic somewhat better this impression rapidly alters: the Antarctic becomes less far away, it consists of more than ice and desolation and, most importantly, it inseparably is a living and essential part of our global biosphere.

The times in which Antarctic matters attracted interest from just a relatively small number of governments and scientists have gone. The Antarctic has become a topic in the mass media and, occasionally, is debated in our parliaments. We, civil servants and diplomats, charged by our governments to represent their interests and to develop common policies concerning the Antarctic, must get used to the fact that the Antarctic has become, so to say, hot news. Let us, however, be glad about this and make use in a creative fashion of the momentum generated by this intensification of public interest in order to preserve and better understand this common heritage.

Certainly, the new interest for Antarctica stems from some most serious developments and concerns:

- Ozone layer depletion, in particular above the Antarctic, but also in other places;

- the possibility of important climatic changes and, resulting therefrom, marked rises in sea levels around the world, certain shipping accidents in polar regions with dramatic environmental pollution effects.

The now almost universal appreciation of the vulnerability of life on this planet has placed the search for commonly acceptable environmental protection measures on top of the international political agenda. It is our task in this meeting to contribute to this search by further developing and better defining "an Antarctic conservation strategy".

We shall address in the coming days a number of important and practical questions from the following perspective:

- Although the environmental aspect certainly serves a large part of the time allotted to us for this meeting and all of our best efforts, there are other important aspects which also deserve our full attention, in particular the promotion of scientific cooperation. We should not loose sight of the need for maintaining a balance in this respect.

- We should maintain the existing Treaty structure. Any additional instruments which we might develop should have their place within this structure.

- We should maintain a unanimous stance, in particular in the framework of the United Nations, towards other states which have not acceded to the Antarctic Treaty.

Finally, my Delegation wishes to express its great appreciation for our host Government for the excellent preparations for this meeting and for the professional and most agreeable facilities which have been put at our disposal for holding this meeting.

OPENING ADDRESS BY MR PETRU GAVRILESCU,

LEADER OF THE DELEGATION OF ROMANIA

Mr Chairman,
Ladies and Gentlemen,

Mining in Antarctica presents potential immeasurable risks for humanity bearing in mind the acceleration in global climatic changes and the particular role of Antarctica in these changes.

Under these conditions, the Romanian Delegation believes the moratorium on the mining of mineral resources in Antarctica should be extended indefinitely.

Recent research has demonstrated the fragile physical and biological character of the Antarctic continent. Uncontrolled human activity in Antarctica and the possibility of industrial accidents would lead to irreversible and immeasurable effects. Therefore, we share the position of certain States, including Australia and France, that are in favour of adopting comprehensive measures for the protection of the Antarctic environment and its dependent and associated ecosystems as well as declaring Antarctica a natural reserve for the planet.

Given the climatic changes recorded worldwide, notably the greenhouse effect, the proposal by the two States to convene in 1990 a Special Consultative Meeting of the Antarctic Treaty Consultative Parties with a view to adopting a comprehensive strategy for this continent is both opportune and useful. We believe that this Meeting could also examine the way in which the international texts for the Antarctic Treaty System are respected and could recommend necessary measures to protect effectively the Antarctic environment.

Romania is not a Consultative Party to the Antarctic Treaty and so is not directly implied in the convening of the proposed meeting. It does, however, support this measure which is in line with the position it has consistently held for the introduction of efficient comprehensive measures for the environmental protection in the interests of humanity.

ANNEX B

REPORTS ON THE OPERATION OF THE ANTARCTIC TREATY SYSTEM

(i) COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES (CCAMLR)

(ii) SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH (SCAR)

(iii) CONVENTION FOR THE CONSERVATION OF ANTARCTICA SEALS (CCAS)

(iv) FOURTH SPECIAL ANTARCTIC TREATY CONSULTATIVE MEETING

(V) STATUS OF ANTARCTIC TREATY RECOMMENDATIONS

(i) STATEMENT BY THE CCAMLR OBSERVER AT THE XVTH ATCM (PREPARED BY THE EXECUTIVE SECRETARY OF CCAMLR)

INTRODUCTION

The Commission for the Conservation of Antarctic Marine Living Resources is pleased to accept the invitation of the Antarctic Treaty Consultative Parties to be represented at the XVth ATCM as an observer and welcomes the opportunity to inform the Consultative Parties of the current status of its work.

Membership of the Commission

2. The Commission for the Conservation of Antarctic Marine Living Resources and the Scientific Committee for the Conservation of Antarctic Marine Living Resources were established in 1982 by the Convention on the Conservation of Antarctic Marine Living Resources. The objectives of the Convention and functions of the Commission and Scientific Committee are included here as Attachment 1.

3. There are currently twenty members of the Commission and the Scientific Committee. A further seven countries have acceded to the Convention, but have not yet become members. Membership of the Commission is conditional on fishing activity or the conduct of research related to the objectives of the Convention. During 1987 and 1988 nine members were involved in fishing activities and all Commission members conducted research on Antarctic marine living resources. A list of Members and acceding states is included as Attachment 2.

Current Level of Fishing Activity

4. Levels of fishing activity taken from the most recent available data are given in Attachment 3. In summary:

(a) the total catch of krill in 1987/88 was 370 663 tonnes and finfish, 88 354 tonnes;

(b) as in previous years most of the krill, 364 173 tonnes, and fish, 79 905 tonnes, was taken from the Atlantic ocean sector; and

(c) the USSR and Japan were the major fishing countries taking 369 811 tonnes and 73 112 tonnes respectively.

Management of Marine Living Resources

5. Commercial harvesting of Antarctic finfish began in the mid-sixties. By 1970 the catch had reached 400 000 tonnes per year. Three years later it had fallen to less than 50 000 tonnes and has remained at about that level ever since. Exploratory fishing for krill began in the early seventies. Catches increased steadily from less than 50 000 tonnes in 1975 to a peak of over 500 000 tonnes in 1982 and over the past few years has been steady at just under 400 000 tonnes. The reduction in catch in the early eighties was probably due to concerns that the processed krill contained unacceptably high levels of fluorine, an element occurring naturally in the krill shell. More efficient peeling machines were developed to eliminate this problem. More recently variations in the catch have been attributed to economic considerations, in particular market acceptance of the products.

6. In the seven years since CCAMLR was established, systems for acquiring data for the management of commercially harvested fish species have been instituted, a mechanism to analyze this data to provide advice to the Commission annually has been developed and, on the basis of this advice, measures have been adopted for the protection of the heavily targeted species. A complete list of measures currently in force is included as Attachment 4. The acquisition of biological data from scientific surveys is an essential element in this management process and a high level of co-operation among Members in conducting scientific surveys of fish stocks has developed.

7. Within the field of fisheries science, there are tried and tested methods for management of finfish stocks. Unfortunately this is not the case for Antarctic krill. In spite of a large increase in scientific effort in the years immediately preceding the establishment of CCAMLR there was still much to learn of the general biology, distribution and abundance of krill when CCAMLR commenced operation. A great deal more information on krill has been gathered by CCAMLR Members over the past seven years and intensive studies are continuing, but a reliable means of estimating the status and dynamics of krill stocks has still bot been devised.

8. On the basis of the information that was available at the early meetings of the Scientific Committee, it was agreed that the global level of catch, 4 to 500 000 tonnes, was not high enough to be having any significant effect on animals that feed on krill. In more recent years, although total catches remained relatively steady around 400 000 tonnes, there has been some concern that fishing may be concentrated in the foraging areas of krill predators and could be having an impact. These concerns have led to more detailed reporting of catch data in specific study areas, but at this stage no management action has been recommended.

9. While continuing to monitor the development of the krill fishery the Scientific Committee has identified priority areas for research to be undertaken through national programs and has itself sponsored work on the development of methods necessary for the assessment of the impact of fishing on krill stocks. Equal attention has been given to the development of a program to monitor the impact of fishing on krill predators. Recommendations in these important areas of the Commission's responsibilities are beginning to flow from the Scientific Committee and the Commissions's work is set to broaden into these areas over the next couple of years.

Observation and Inspection System

10. Following intensive work at the last three meetings of the Commission a system of observation and inspection to ensure compliance with measures adopted by the Commission, will commence operation in the 1989/90 fishing season. The system is nationally operated, that is to say observers and inspectors are appointed by, and report to, their governments who in turn report to the Commission. Inspections and observations can be carried out by an inspector or observer from one country on fishing or research vessels of other countries. Prosecutions or the imposition of sanctions in respect of violations of measures adopted by the Commission are the responsibility of the flag state and are to be reported to the Commission. The system is modelled on similar systems operating in other international organizations.

11. From information provided by Members under the terms of the system, sixteen observers and inspectors have been designated for 1989/90 and seventy eight vessels will be engaged in fishing in the Convention Area 1989/90.

CCALMR Data Center

12. The Commission maintains databases containing commercial catch and fishing effort data submitted annually by countries that fish in the Convention Area. These databases are essential to the regulatory role of the Commission and are intended to be a complete record of all commercial fishing activities conducted in Antarctica waters from the time that data began to be assembled, the 1969/70 fishing season.

13. The Commission also maintains databases containing information on the age structure of the various fish populations derived from sampling of the commercial catch and from samples taken in scientific surveys.

14. The databases described above are fully operational and are used daily. Procedures for the release of data have been agreed and the Secretariat responds frequently to requests for data from individual scientists and research institutions in Member countries.

15. To facilitate the submission of all fisheries and fisheries research data and to help ensure its completeness and accuracy, standard formats are used. Procedures and formats for the reporting of data on seals and birds from scientific work connected with the CCAMLR Ecosystem Monitoring Program are currently under consideration by the Scientific Committee.

Marine Debris and the Incidental Mortality Antarctic Marine Animals

16. At its third Meeting the Commission noted the problem being caused by marine debris in other regions of the world's oceans. It was agreed that from the available information there did not appear to be a problem in the Convention Area at that time. But in case that situation should change, a procedure was introduced aimed at monitoring the extent of this kind of marine pollution, and its effects. Steps were also taken to educate persons working in the Antarctic on the damage that can be caused by the dumping of refuse and discarded gear in the ocean.

17. Under the existing procedure members regularly report their observations of marine debris and entangled animals. To assist in increasing awareness of the potential damage caused by litter in the ocean, the Commission has published a brochure for dissemination to those who work in or visit Antarctica and a placard for mounting on the bulkheads of ships which operate in the Antarctic describing the sources, fates and effects of marine debris.

18. The Commission has accepted an offer of assistance from SCAR specialist groups to provide an independent report on the current impact of marine debris on Antarctic animals and on ways to improve the existing system for monitoring the problem.

Registration of Monitoring Sites

19. In an attempt to assess the effects of fishing on predators of krill the Scientific Committee through an expert working group has introduced a program to monitor selected species of birds and seals in specified regions throughout Antarctica. It is called the CCAMLR Ecosystem Monitoring Program (CEMP). The Program involves the collection and analysis of data which are expected to indicate changes in the number and condition of predators which in turn may be related to variations in food availability. Members through their national scientific programs have commenced work in support of CEMP at breeding sites in the specified monitoring regions.

20. So as to ensure that extraneous effects are not introduced through human interference at the CEMP study sites, the Scientific Committee has sought the Commission's assistance in

instituting some form of protected status for the sites. A detailed proposal was considered by the Commission at its last meeting.

21. The Commission has noted that any action in this regard should take account of "actions taken under other components of the Antarctic Treaty System and that the procedure for registering CEMP sites should therefore provide for consultation and co-operation with the Antarctic Treaty Consultative Parties, the Contracting Parties to the Convention for the Conservation of Antarctic Seals and the Convention on the Regulation of Antarctic Mineral Resource Activities". The matter will be further addressed at the next meeting.

Co-operation with Other International Organisations

22. The Convention requires that CCAMLR cooperate with specified organizations and encourages co-operation with any other organization which could contribute to the work of the Commission and Scientific Committee. Invitations to participate as observers to Meetings of the Commission have been extended to the Antarctic and Southern Ocean Coalition (ASOC), the Food and Agriculture Organisation (FAO), the Intergovernmental Oceanographic Commission (IOC), the International Union for the Conservation of Nature and Natural Resources (IUCN), the International Whaling Commission (IWC), the Scientific Committee on Antarctic Research (SCAR) and the Scientific Committee on Oceanic Research (SCOR). CCAMLR receives invitations to attend meetings of all of these organizations except ASOC.

23. CCAMLR Members provide data annually to the FAO for inclusion in its data base of world fisheries statistics and a very successful collaborative effort by the two organizations resulted in 1985 in the publication of two volumes in three languages of identification sheets for all marine living resources known to be important to fisheries and conservation in the Convention Area.[1]

24. CCAMLR and the IOC have also developed a close working relationship. In 1987, they jointly sponsored a seminar on "Antarctic Ocean Variability and its influence on Marine Living Resources, Particularly Krill", involving some eighty scientists and thirty presented papers. The proceedings of the Seminar were published.[2]

[1] FAO Species Identification Sheets for Fishery Purposes - CCAMLR Conservation Area (FAO, Rome, 1985).

[2] Antarctic Ocean Resources Variability - D Sahrhage (Ed.), Springer-Verlag, 1988.

25. Because of the similarity of function and operation of the IWC and CCAMLR there has been from the outset an effective and profitable communication between the two organizations. There are obviously areas of common interest and CCAMLR has received helpful information and advice from the IWC. There was to have been a jointly convened workshop on the feeding ecology of southern baleen whales in 1989, but it has had to be deferred and may be held in 1991. The success of the Workshop is dependent on the preparation of working papers involving extensive analyses of both whale and krill data. Unfortunately, scientists who were to participate are fully occupied with the Comprehensive Assessment of Whale Stocks, which is an important element in the review of the current moratorium on commercial whaling, imposing by the IWC, scheduled for 1990.

26. Co-operation between CCAMLR and SCAR has developed steadily. SCAR has provided advice to the Scientific Committee and its working groups, on a number of topics and CCAMLR has contributed funds for the publication of SCAR reports on matters relevant to CCAMLR objectives. As a further development in this co-operation the Commission at its last meeting, decided that the CCAMLR observer to the SCAR Meeting should report directly to the Commission as well as to the Scientific Committee.

27. The Convention states that "the Commission and Scientific Committee shall cooperate with the Antarctic Treaty Consultative Parties on matters falling within the competence of the latter". The Commission has not sought to establish a formal mechanism for cooperation with the Antarctic Treaty Consultative Parties and there has been no formal invitation to the Consultative Parties to send a representative to CCAMLR meetings. CCAMLR has relied on communication being informally effected through delegates who regularly attend the meetings of both organisations and, more recently, through CCAMLR participation as an observer at Treaty Meetings at the invitation of the Consultative Parties.

28. So far there have been no references from CCAMLR to the Consultative Parties of "matters falling within the competence of the latter". There have been instances, however, where matters raised for discussion have been judged inappropriate for CCAMLR and vaguely left for the attention of the Consultative Parties. Matters of common concern have also arisen, for example the protection of monitoring sites mentioned above in paragraphs 14 and 15. It might be mutually beneficial if both organizations were to consider more direct procedures to ensure that such matters are brought to attention.

ATTACHMENT 1

OBJECTIVES OF THE CONVENTION

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 minimization 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.

Function of the Commission

4. 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 subparagraphs (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.

Function of the Scientific Committee

5. 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.

6. 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.

7. In carrying out its functions, the Scientific Committee shall have regard to the work of other relevant technical and scientific organizations and to the scientific activities conducted within the framework of the Antarctic Treaty.

ATTACHMENT 2

The Members of the Commission as at October 1989 are:

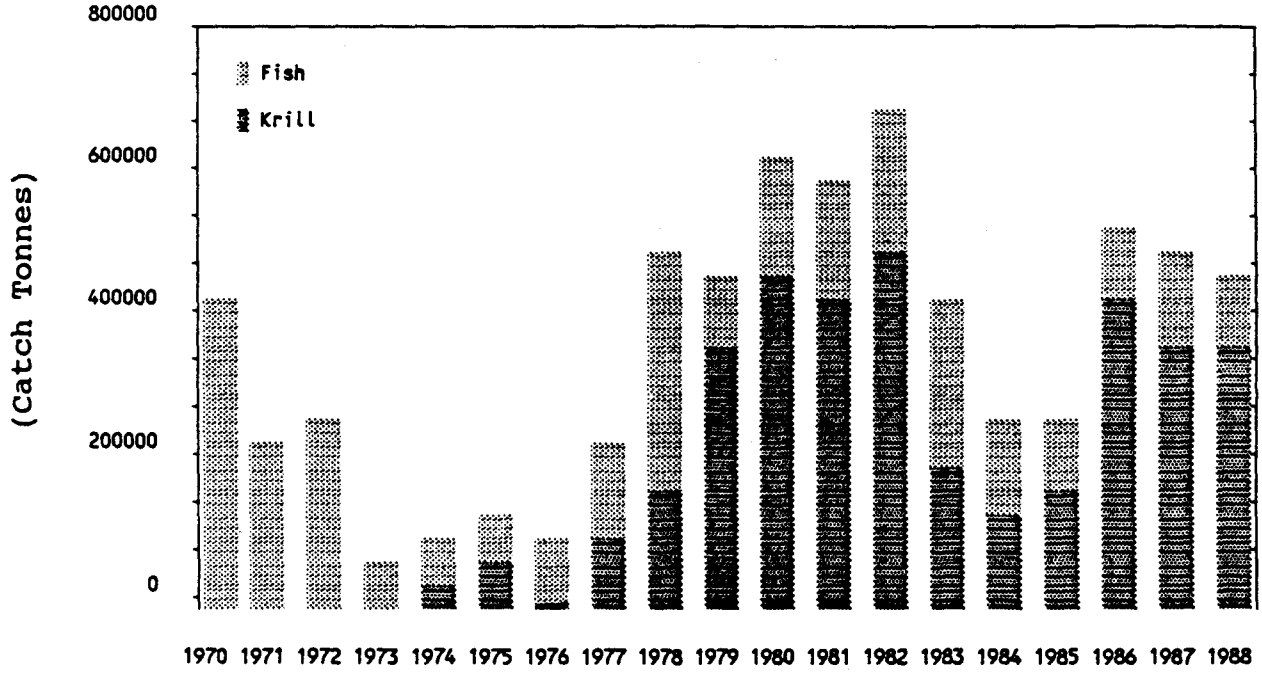
Argentina
Australia
Belgium
Brazil
Chile
European Economic Community
France
German Democratic Republic
Germany, Federal Republic of
India
Japan
Korea, Republic of
New Zealand
Norway
Poland
South Africa
Spain
Union of Soviet Socialist Republics
United Kingdom of Great Britain and Northern Ireland
United States of America

States that have acceded to the Convention but are not Members of the Commission as at October 1989 are:

Canada
Finland
Greece
Italy
Peru
Sweden
Uruguay

ATTACHMENT 3

TOTAL COMMERCIAL CATCH OF KRILL AND OTHER SPECIES BY SPLIT YEAR



Split Year (July to June)

TOTAL COMMERCIAL CATCH (ALL SPECIES, ALL AREAS)

BY COUNTRY AND SPLIT-YEAR

SPLIT-YEAR	BULGARIA	CHILE	SPAIN	FRANCE	GERMANY DEMOCRATIC REPUBLIC OF	UNITED-KINGDOM
1970	0	0	0	0	0	0
1971	0	0	0	0	0	0
1972	0	0	0	0	0	0
1973	0	0	0	0	0	0
1974	0	0	0	0	0	0
1975	0	0	0	0	0	0
1976	0	276	0	0	0	0
1977	0	92	0	0	790	0
1978	3 439	0	0	0	10 313	0
1979	3 408	0	0	0	4 961	0
1980	1 225	0	0	283	9 970	0
1981	0	0	0	1 921	8 279	0
1982	0	0	0	6 158	0	0
1983	0	3 752	0	2 102	0	0
1984	0	1 649	0	1 071	0	0
1985	0	2 598	0	760	624	0
1986	0	3 264	0	1 114	1 297	0
1987	0	4 063	479	490	809	0
1988	0	5 938	0	488	1 198	61

SPLIT-YEAR	JAPAN	KOREA	POLAND	UNION OF SOVIET SOCIALIST REPUBLICS	UNITED STATES OF AMERICA
1970	0	0	0	399 704	0
1971	0	0	0	212 804	0
1972	0	0	0	222 903	0
1973	59	0	0	35 280	0
1974	646	0	0	69 920	0
1975	2 677	0	0	114 210	0
1976	4 750	0	0	58 574	0
1977	12 802	0	17 054	196 255	0
1978	25 219	0	64 016	386 361	0
1979	36 961	511	37 486	374 894	0
1980	38 275	0	19 673	526 663	0
1981	27 698	0	18 139	515 856	0
1982	35 116	1 429	8 324	601 569	0
1983	42 282	1 959	373	375 697	0
1984	49 531	5 314	10 079	196 556	0
1985	38 274	0	5 709	216 245	0
1986	61 074	0	5 991	431 161	0
1987	78 360	1 527	4 532	384 228	23
1988	73 112	1 525	6 875	369 811	9

ATTACHMENT 4

SCHEDULE OF
CONSERVATION MEASURES IN FORCE

(Issued in July 1989)

This schedule lists Conservation Measures adopted by the Commission in accordance with Article IX of the Convention for the Conservation of Antarctic Marine Living Resources that are currently in force.

Conservation Measures are numbered in simple consecutive order in arabic numerals with a roman numeral identifying the number of the meeting of the Commission at which they were adopted. For example, Conservation Measure 3/IV denotes the third Conservation Measure adopted by the Commission, and indicates that the Measure was adopted at the Fourth Meeting of the Commission, i.e. in 1985.

- Conservation Measure 1/III: Closure of waters adjacent to South Georgia
- Conservation Measure 2/III: Mesh size
- Conservation Measure 3/IV: Prohibition of directed fishery on Notothenia rossii around South Georgia
- Conservation Measure 4/V: Regulation on mesh size measurement
- Conservation Measure 5/V: Prohibition of directed fishery on Notothenia rossii in the Peninsula Area
- Conservation Measure 6/V: Prohibition of directed fishery on Notothenia rossii around South Orkneys
- Conservation Measure 7/V: Regulation of fishing around South Georgia
- Conservation Measure 9/VI: Catch reporting system for Champsocephalus gunnari around South Georgia
- Conservation Measure 11/VII: Prohibition of directed fishery on Champsocephalus gunnari around South Georgia from 4 November 1988 to 20 November 1989
- Conservation Measure 12/VII: Catch limitation on Patagonotothen brevicauda guntheri around South Georgia for the 1988/89 season

(ii) REPORT FROM THE SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH (SCAR) TO THE XVth ANTARCTIC TREATY CONSULTATIVE MEETING

1. General Report on SCAR activities

Since the Fourteenth ATCM the two major events in SCAR's proceedings have been:

- The Twentieth General Meeting of SCAR in September 1988;
- The Fourth International Symposium on Antarctic Biology in September 1988.

In addition, many of SCAR's subsidiary Working Groups and Groups of Specialists have met.

In September 1988, Italy, Sweden and Uruguay were admitted to full membership of SCAR and Ecuador was admitted to associate membership. SCAR now has 21 full national members and 7 associates.

Two important matters have developed within SCAR's consideration of future needs in international Antarctic science. These are the identification of Antarctic science programmes that will contribute in a crucial way to a world-wide study of global change, being organised under the auspices of the International Council of Scientific Unions, and an intention to hold a major international conference on Antarctic science in 1991.

1.1 The Role of Antarctica in Global Change

For the last few years, the International Council of Scientific Unions has been developing proposals for a major global research programme in the 1990s to study global change. The programme is to be known as the International Geosphere-Biosphere Programme (IGBP). This broad-based study of changes occurring in the global environment will incorporate aspects of a number of other programmes such as the World Climate Research Programme, the International Global Atmospheric Chemistry Programme, the International Space Year, the Joint Global Ocean Flux Study, the Global Energy and Water Cycle Experiment, etc. SCAR believes that the IGBP is going to be an important activity which might influence the future of mankind. The polar regions are of exceptionally high importance in some of the global processes and Antarctic science can, and should, make a substantial contribution to IGPB for two main reasons:

1) major interactions between the polar atmosphere, ice, ocean and biota affect the entire global system through feedbacks, biogeochemical cycles, deep ocean circulation and changes in ice mass balance;

2) the effects of global climate change are predicted to be larger and more pronounced in the polar regions than in mid-latitudes and therefore better observed and monitored. Antarctica is also a rich repository of palaeoenvironmental information in its ice sheet and ocean and lake sediments.

SCAR has formed a SCAR/IGBP Steering Committee and in 1989, on behalf of SCAR, ICSU Press published a report entitled The Role of Antarctica in Global Change. Copies of this publication have been distributed through National Committees and copies are generally available for purchase. Over the coming years these proposals will be developed into an implementation plan, as the national Antarctic programmes enter commitments to undertake the required research.

1.2 Conference on Antarctic Science

In the thirty years or so since the International Geophysical Year Antarctic science has advanced immensely. It is now studying continent-wide processes on a much larger scale than previously, it is becoming increasingly concerned with inter-disciplinary and multi-disciplinary problems and more and more it is becoming important for Antarctic science to make a significant contribution to the growing number of international programmes studying global physical, geophysical and biological processes.

For these reasons, SCAR has decided that it is timely to review the advances in all aspects of Antarctic science over the past thirty years and to formulate and/or review the plans and priorities in international Antarctic science for the coming decade.

With these objectives in view, SCAR is planning to hold a major multi-disciplinary Antarctic science conference in the third quarter of 1991.

A number of SCAR subsidiary groups are actively undertaking, or making plans for, international collaborative research programmes of a regional nature which, in many cases, contribute to global-scale programmes of other science organisations. Some examples of these are given below:

1.3 Antarctic Sea Ice

It is intended that later in 1989 SCAR will publish its plan for a ten-year multi-disciplinary international collaborative study of the Antarctic sea-ice zone. The plan will include extensive use of ice-buoys and remote sensing techniques, using the new satellites that are due to be launched in the coming decade, and two intensive observation periods - in 1992 (the International Space Year) and 1996 - with over-wintering ship programmes.

The sea ice programme will contribute to and be co-ordinated with, the World Climate Research Programme, the World Ocean Circulation Experiment (Southern Ocean core project) and the Joint Global Ocean Flux Study. The programme will also include studies of the sea-ice zone biota. A workshop on the Ecology of the Antarctic Sea Ice Zone will be held in 1990. The biological aspects of the long-term programme will be co-ordinated with the activities of a Working Group on sea-ice ecology set up by SCAR's sister organisation, the Scientific Committee on Oceanic Research of ICSU, which is concerned with both polar regions.

1.4 Antarctic Lithosphere

To further the understanding of the structure and evolution of the Antarctic lithosphere about twenty geoscience transects across major geological features have been identified. For each of these a co-ordinator (or co-ordinators) have been appointed whose task is to bring together all relevant information from all participating national programmes. This work contributes to the Global Geotransects Programme of the International Lithosphere Programme, another ICSU body. In addition, it is necessary to acquire new data and to this end it has been agreed that the most productive way to proceed is to plan a multi-national programme of field research on a trans-continental transect about 300 km wide approximately along the 120°W to 60°E meridian. The first field season will be in 1990-91 and will concentrate on the Byrd sub-glacial basin.

1.5 Antarctic Palaeoenvironments

The SCAR Executive Committee has endorsed warmly a proposal from the SCAR Group of Specialists on the Evolution of Cenozoic Palaeoenvironments of Southern High Latitudes to develop a major five-year programme which would integrate a variety of geological, geophysical and glaciological studies, in an attempt to understand better the relationships between Cenozoic terrestrial and marine glacial and interglacial history, Antarctic sedimentary basin geophysical data, Cenozoic global sea-level variations, and Cenozoic global climate change data. The programme proposed is of such geographical and scientific scope that a well integrated international effort is deemed essential for its successful execution.

1.6 Antarctic Terrestrial Biology

SCAR is coordinating, and disseminating information about, national programmes in terrestrial biology under a new programme entitled Biological Investigations of Terrestrial Antarctic Systems (BIOTAS). The coordinators of this international programme publish a periodic newsletter.

1.7 Antarctic Atmospheric Sciences

SCAR has transformed its Working Group on Upper Atmosphere Physics into a Working Group on Atmospheric Sciences, with one section concerned with the troposphere, one with the stratosphere and mesosphere, and the third with solar-terrestrial relationships.

One of its tasks is to coordinate research into the problems of ozone depletion over the Antarctic in Spring, and other "greenhouse" gases, which contribute to global studies of these problems within the Global Atmospheric Chemistry Programme and World Climate Research Programme. In the higher atmosphere studies the SCAR group is actively co-operating in such programmes as Polar Auroral Dynamics and planning for the Solar Terrestrial Energy Programme in the 1990s.

1.8 Operations and Logistics

SCAR believes that the Representatives at XV ATCM will be interested to learn that in 1988, the Managers of National Antarctic Programmes constituted themselves, with the approval of SCAR, into a Council of Managers of National Antarctic Programmes, federated to SCAR. Under this Council has been established a Standing Committee on Antarctic Logistics and Operations (SCALOP). The terms of reference of which include "inter alia", to serve SCAR by providing advice on Antarctic operations and logistics. This group therefore replaces the SCAR Working Group on Logistics which has been disbanded.

1.9 Publications

During 1988 and 1989 SCAR has continued its active policy for the publication and dissemination of information on Antarctica. Special attention is drawn to the following publications sponsored by SCAR:

(i) International Research in Antarctica, Oxford University Press in association with ICSU Press and SCAR (1988)

- a review of achievements in Antarctic Science, copies sent to all permanent national delegations to the UN as well as National Committees.

(ii) The role of Antarctica in Global Change, SCAR (1989) in collaboration with ICSU Press.

(iii) Biology and Ecology of the Antarctic Krill (Euphasia Superba Dana) SCAR (with financial contribution from CCAMLR) (1989)

- review of the present status of Antarctic Krill.

(iv) Report on Waste Disposal in the Antarctic published on behalf of SCAR by Australian Antarctic Division (1989).

(v) The following newsletters were published:

- Antarctic Climate Research (2 issues);
- Biological Investigations of Marine Antarctic Systems and Stocks (3 issues);
- Biological Investigations of Terrestrial Antarctic Systems (2 issues);
- Atmospheric Sciences (3 issues).

2. Convention for the Conservation of Antarctic Seals (CCAS)

SCAR submitted to the CCAS review meeting in September 1988 a substantial report on matters within the competence of SCAR under the Convention for the Conservation of Antarctic Seals and was represented at the conference.

The report described how SCAR had discharged its responsibilities under CCAS and offered information and views on scientific matters to be considered at the Review Meeting.

3. SCAR Responses to ATCM requests for scientific advice and comments on related topics of ATCM agenda

3.1. Measures for the Protection of the Antarctic Environment

3.1.1 General Philosophy

It is the considered view of the SCAR Executive that, to be effective, any measures for the protection of the Antarctic environment must be based on sound scientific understanding of the environment and ecosystems.

3.1.2 Objectives of Conservation in the Antarctic

SCAR believes that the representatives at XV ATCM would be interested in a statement prepared at XX SCAR on the Objectives of Conservation in the Antarctic.

3.1.3 Introduction of non-indigenous biota into the Antarctic

SCAR is concerned about the increasing risks associated with the introduction of living materials into the Antarctic and wishes to bring to the notice of the Representatives to XV ATCM a report on this subject, which was approved at XX SCAR.

3.2 Human Impact on the Antarctic Environment

3.2.1 General

SCAR has long been conscious of the need to limit human disturbance of the Antarctic environment and has provided advice and comment on such matters as the agreed measures for

the conservation of Antarctic flora and fauna, protected areas, man's impact on the Antarctic environment, a guide for visitors, the possible effects of mineral resource activities and collaborated with IUCN in producing reports on the conservation of the Antarctic and sub-Antarctic islands. Because of the growing importance of these matters, SCAR has now established a SCAR Group of Specialists on Environmental Affairs and Conservation and is ready to assist the Treaty parties as may be required.

3.2.2 Waste Disposal

At its meeting in September 1988, SCAR approved subject to the addition of further detail and to final editorial correction, the text of a report on waste disposal in the Antarctic prepared by an "ad hoc" group of experts, specially constituted by SCAR following ATCM Rec XIII-4. The report has been published by the Australian Antarctic Division on behalf of SCAR under the title "Waste Disposal in the Antarctic" and copies were sent to National Committees in June 1989 with a request that they convey one copy to their governments as SCAR's response to ATCM Rec XIII-4.

The representatives of national operating agencies present at XX SCAR had all agreed that they could accept all the recommendations in the report.

3.2.3 Environmental Impact Assessment

SCAR again draws attention to its publication Man's Impact on the Antarctic Environment, produced in response to ATCM Rec XII-3. SCAR has recommended that its National Committees urge operators of Antarctic programmes to accept and begin implementing the guidelines and procedures for environmental impact assessment set forth in ATCM Rec XIV-2.

3.2.4 Scientific drilling and use of explosives

SCAR, and particularly its Earth science groups, recognise that scientific activities in Antarctica can, by being frequent or on a large scale, have a significant impact on the Antarctic environment. They, therefore, support strongly the rational concern for safety procedures and the detailed assessment of the impact of scientific activities on the Antarctic environment. SCAR emphasises the need for continuation of scientific drilling and also the use of explosives in marine seismic surveys and anticipates their expansion into the foreseeable future in pursuance of legitimate Earth science investigations which cannot be carried out without these techniques. However, SCAR is concerned lest the list of activities considered likely to cause significant impact on the environment be used arbitrarily to limit proposed scientific drilling and the use of chemical explosives without informed and adequate evaluation of the environmental impact in accordance with the procedures set out in ATCM Recommendations XIV-2 and XIV-3.

3.3 Antarctic Protected Areas

Sites of Special Scientific Interest (SSSIs) and Specially Protected Areas (SPAs)

3.3.1 ATCM Recommendations XIV-4, XIV-5, XIV-6

SCAR welcomed the designation of new SSSIs 22 to 28 and the extension of the designation of SSSI No 2.

3.3.2 SCAR recommends that:

1) SPA No 11 - Cape Shirreff be extended and be re-classified as a SSSI;

2) three new Sites of Special Scientific Interest be established as follows:

   . Ablation Point - Ganymede Heights, Alexander Island
   . Avian Island, Marguerite Bay
   . Mount Flora, Hope Bay, Trinity Peninsula

   Details of these proposals and management plans for the SSSIs were conveyed to National Committees in August 1989 for onward transmission to their governments.

3) Proposals for an SPA at Lions Rump, King George Bay, King George Island and for an SSSI at Battleship Promontory, Convoy Range, Victoria Land, have been deferred for further consideration within SCAR.

3.3.3 SCAR has also considered proposals for SSSIs at Shackleton Range, Coats Land and six in the Palmer Station - Arthur Harbour area. SCAR believed that it would be more beneficial if these were to be redrafted as proposals for, the suggested new category of, Antarctic Protected Areas. It is hoped that these, and other proposals for SPAs, will be submitted by National Committees through their governments to XV ATCM.

3.4 Promotion of international scientific cooperation

The promotion of international scientific cooperation in Antarctic research is the basic objective of SCAR's activities. This subject is therefore constantly under review by SCAR and all the ongoing and planned activities referred to in section 1 of this report are relevant. The proposed Antarctic Science Conference in 1991 will be designed to review the whole field of international scientific research in the Antarctic and to identify areas where further stimulation or new programmes are desirable, especially through collaboration.

3.5 Facilitation of International Scientific Cooperation

3.5.1 Environmental Data Management

Copies of a report by SCAR (XX-SCAR-15) approved at XX SCAR as SCAR's response to ATCM Rec XIII-5(ii), were sent to National Committees for transmission to their governments in October 1988. SCAR wishes to advise the representatives at XV ATCM that this response applies only to the context of Rec XIII-5, Man's impact on the Antarctic environment. In most of the geophysical disciplines, an effective World Data Center system exists under the auspices of the International Council of Scientific Unions but nevertheless there is a growing need to re-examine the whole question of scientific data and information exchange in relation to global science programmes. This is under consideration by appropriate international science organisations, including SCAR. SCAR will discuss the question of scientific data and geographic information systems again at its twenty first meeting, in 1990. Meanwhile, SCAR has established an "ad hoc" committee to assess the level and extent of arrangements in the various scientific disciplines for international data and information organisation. In addition the committee is to identify possible problems and possible future needs. The SCAR Working Group on Geodesy and Geographic Information is actively considering the establishment of a digital data base as a foundation for an Antarctic Geographic Information system.

3.5.2 Concentration of siting of stations

To try to help to avoid further stations being constructed in regions where their science programmes may be relatively unproductive because of the proximity of other stations doing similar work, SCAR would be willing if so requested to discuss with and give advice to nations contemplating the construction of new stations.

3.6 Operational Marine Meteorological and Sea-Ice Information Services for Navigation

In response to ATCM Rec XIV-10, SCAR invited WMO and IOC to join with SCAR in arranging a meeting of experts on Antarctic meteorology, oceanography and sea-ice in Leningrad 20-24 February 1989.

The report and recommendation of that meeting, constitutes a joint response from SCAR and WMO with the concurrence of IOC to ATCM Rec XIV-10. Copies were sent to National Committees in September 1989, for onward transmission to their governments.

Some of the recommendations should be implemented without delay and it is hoped that XV ATCM will initiate appropriate actions.

SCAR emphasises that many of the activities now being planned within the scientific research programmes will

contribute substantially to the information gathering that will be necessary for improving services to navigation and also that the effectiveness of any action taken to improve these services will be dependent upon the level and efficiency of the synoptic reporting system.

Also, it should be appreciated that any improvements in the services for marine navigation will also be of assistance to air operations.

3.7 Air Safety in Antarctica

While aware of the desirability of any measures to improve air safety in Antarctica, SCAR urges the Consultative Parties to ensure that the effective prosecution of science is not compromised by undue and unnecessary regulatory measures.

3.8 Convention on the Regulation of Antarctic Mineral Resource Activities

The adoption of the Convention at Wellington, New Zealand on June 2 of last year, fills an important gap in the juridical framework of the Antarctic Treaty System by providing for the regulation of mineral resource activities in the Antarctic region, of interest to the international community as well as the Antarctic Treaty nations.

The SCAR community is therefore expecting that the future entry into force of the Convention may prove to be a factor providing additional strength to the Antarctic Treaty System, with which SCAR maintains close links. Furthermore, in the spirit of the Antarctic Treaty, SCAR expects that the activities associated with the exploration for, and exploitation of, mineral resources will be conducted in harmony with all other elements of the system.

In this regard, SCAR notes with great satisfaction the strong concern for the protection and conservation of the environment that is the fundamental principle of the new Convention. SCAR also appreciates that the Convention requires mineral activities to take into full account the need to respect other established uses of Antarctica, in particular scientific investigations.

SCAR further appreciates that decisions on the conduct of minerals activities in Antarctica, as prescribed in the Convention, will require adequate information on possible impacts on the environment. Bearing in mind the extensive amount of scientific information on the Antarctic environment already available through its scientific community, SCAR foresees an important role in providing expertise and advice on matters within its competence.

To fulfil this, SCAR believes it would be appropriate that SCAR has observer status on the Commission and on the Advisory Committee of the Convention. In addition, it would be willing

to collaborate with the institutions of the Convention in the promotion of scientific research in Antarctica.

Information derived from the minerals activities, on the other hand, will be of great value to Antarctic science. SCAR is, therefore, concerned that possibly the full and proper archiving of these data may be delayed. SCAR therefore urges that in the spirit of the Convention, the data will be released for scientific use as soon as practical.

XX SCAR adopted a recommendation on this aspect as follows:

Recommendation XX-GEOL SEG-1.

RECALLING that Article III Section 1c of the Antarctic Treaty stipulates that scientific observations and results from Antarctica shall be exchanged and made freely available;

ANTICIPATING that future activities under the Convention on the Regulation of Antarctic Minerals Activities will, if they occur, generate a large body of geological and geophysical data from Antarctica and its continental margins;

RECOGNISING that these data would constitute an important component of information about the tectonic and palaeoenvironmental evolution of the Antarctic region; and

FURTHER RECOGNISING that the timely release of such data will help minimize the risk to the Antarctic environment that are associated with minerals activities;

SCAR and especially the SCAR WGs on Geology and Solid Earth Geophysics RECOMMEND that scientific data from activities conducted in conformity with provisions of the Antarctic Minerals Convention be made available on request to the Antarctic and wider scientific communities as soon as possible at the cost of reproduction.

SCAR appreciates that the implementation of the requirements of the Convention with regard to the full protection of the Antarctic environment will depend strongly on base-line data. Consequently, SCAR strongly urges that the allocation of resources to the acquisition of this base-line information should not be at the expense of national scientific research programmes.

SCAR notes that the Convention requires minerals activities to take full account of established uses of Antarctica, but is concerned that such activities at the exploration and development phases of the Convention, should they occur, shall not limit the possibility of future scientific research.

The SCAR Executive Committee, recognising the continuing discussion and development of the Convention, re-states its strong concern for the protection and conservation of the Antarctic environment and its necessary use for scientific investigation.

(iii) **REPORT SUBMITTED TO THE XVTH ANTARCTIC TREATY CONSULTATIVE MEETING BY THE DEPOSITARY GOVERNMENT OF THE CONVENTION FOR THE CONSERVATION OF ANTARCTIC SEALS (UNITED KINGDOM) IN ACCORDANCE WITH RECOMMENDATION XIII-2, PARAGRAPH 2 (d)**

1. This report covers events regarding the Convention for the Conservation of Antarctic Seals (CCAS) from October 1987 to the present. Events prior to October 1987 were reported to the XIVth Antarctic Treaty Consultative Meeting (see Final Report, Annex D).

2. On 20 May 1988 the Government of Sweden indicated to the Depositary Government its desire to accede to the Convention. In accordance with Article 12 of CCAS the Depositary Government notified all the then Contracting Parties of Sweden's desire on 24 May 1988. On 17 March 1989 the Depositary Government informed the Government of Sweden that all the then Contracting Parties had consented to accession by Sweden and therefore invited Sweden to accede.

3. On 26 May 1988 the Government of Canada indicated to the Depositary Government its desire to accede to the Convention. In accordance with Article 12 of CCAS the Depositary Government notified all the then Contracting Parties of Canada's desire on 26 May 1988. On 17 March 1989 the Depositary Government informed the Government of Canada that all the then Contracting Parties had consented to accession by Canada and therefore invited Canada to accede.

4. On 8 September 1987 the Depositary Government issued to all the then Contracting Parties an invitation to attend a meeting in London between 12 and 16 September 1988 to review the operation of the Convention in accordance with Article 7 of the Convention ten years after its entry into force. The meeting was held between those dates and was attended by all the Contracting Parties: Argentina, Australia, Belgium, Chile, France, Federal Republic of Germany, Japan, Norway, Poland, South Africa, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland and the United States of America. Brazil, Canada, New Zealand, Peru and Sweden participated as observers by invitation of the Contracting Parties. The Commission for the Conservation of the Antarctic Marine Living Resources (CCAMLR) and the Scientific Committee on Antarctic Research (SCAR) were also present as observers. At the special invitation of the Contracting Parties the International Union for Conservation of Nature and Natural Resources (IUCN) provided an expert to assist the Meeting in its consideration of the conservation aspects of the Convention's operation.

5. The Final Report of the meeting was formally circulated to Contracting Parties' Diplomatic Missions in London on 27 September 1989, conveying proposals, agreed at the meeting, for amendments to be made to the Annex to the Convention.

6. Signatories of CCAS which were not Contracting Parties at the material time, as well as states which have been invited to accede, have been kept informed of developments involving the Depositary Government by receiving copies of the relevant diplomatic correspondence.

(iv) **REPORT SUBMITTED BY THE CHAIRMAN OF THE FOURTH SPECIAL ANTARCTIC TREATY CONSULTATIVE MEETING ON ANTARCTIC MINERAL RESOURCES IN ACCORDANCE WITH RECOMMENDATION XIII-2, PARAGRAPH 2(a)**

Two further sessions of the Fourth Special Antarctic Consultative Meeting on Antarctic Mineral Resources were held following the Fourteenth Antarctic Treaty Consultative Meeting held in Rio de Janeiro in October 1987. An informal session was held in Wellington, New Zealand, from 18 to 29 January 1988. The final session of the Fourth Special Consultative Meeting was held in Wellington from 2 May to 2 June 1988. Both sessions were chaired by Mr Christopher Beeby of New Zealand.

The final session was attended by representatives of all the then Consultative Parties, namely Argentina, Australia, Belgium, Brazil, Chile, China, France, German Democratic Republic, Federal Republic of Germany, India, Italy, Japan, New Zealand, Norway, Poland, South Africa, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland, the United States of America and Uruguay. On the invitation of the Consultative Parties, representatives of thirteen Contracting Parties to the Antarctic Treaty that were not Consultative Parties, namely Bulgaria, Canada, Czechoslovakia, Denmark, Ecuador, Finland, Greece, Republic of Korea, Netherlands, Papua New Guinea, Peru, Romania, and Sweden, also attended the final session.

At the final session consultations were held under the auspices of the Chairman to advance work on key aspects of the informal negotiating text that had been under negotiation (MR/17 and its subsequent revisions I to V/CORR.1). A Main Committee, open to participation by all delegations was established under the Chairmanship of Mr Rolf Trolle Andersen of Norway, to review particular aspects of the text and to consider proposals for amendments.

A Drafting Committee comprising representatives from Argentina, Brazil, Chile, China, France, Federal Republic of Germany, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland and the United States of America, which was chaired by Mr Orlando R. Rebagliati of Argentina, continued the work that had begun at the informal session in Wellington in January 1988 to review drafting issues in the text and to ensure the concordance of the text in the official languages of the Antarctic Treaty.

At the conclusion of the final session the representatives of the Consultative Parties adopted by consensus, in the four official languages of the Antarctic Treaty, the Convention on the Regulation of Antarctic Mineral Resource Activities, and, together with the representatives of the Non-Consultative Parties participating in the final session, signed the Final Act of the Fourth Special Antarctic Consultative Meeting on

Antarctic Mineral Resources to which the Convention is attached.

In accordance with the Final Act, the Drafting Committee met in Sydney, Australia, in September 1988 for the purpose of bringing into concordance with the text of the Convention in the four official languages of the Antarctic Treaty, a Chinese text. The Committee also considered questions of linguistic consistency in the authentic texts in the official languages of the Antarctic Treaty with a view to their rectification in accordance with the rules and procedures set forth in the Vienna Convention on the Law of Treaties 1969. In accordance with those rules and procedures, the Depositary of the Convention circulated the results of the Drafting Committee's work to all Contracting Parties to the Antarctic Treaty and prepared final authentic texts of the Convention in the Chinese, English, French, Russian and Spanish languages.

The Convention on the Regulation of Antarctic Mineral Resources Activities was opened for signature at Wellington, New Zealand, on 25 November 1988. It will remain open for signature until 25 November 1989 by States which participated in the final session of the Fourth Special Antarctic Treaty Consultative Meeting.

As at 9 October 1989 the Convention has been signed by the following countries:

Argentina
Brazil
Chile
China
Denmark
Finland
Republic of Korea
New Zealand
Norway
Poland
South Africa
Sweden
USSR
United Kingdom
United States
Uruguay

In accordance with Article 62, the Convention will enter into force on the 30th day following the date of deposit of instruments of ratification, acceptance, approval or accession by 16 Antarctic Treaty Consultative Parties which participated as such in the final session of the Fourth Special Antarctic Treaty Consultative Meeting, provided that number includes all the States necessary in order to establish all of the institutions of the Convention in respect of every area of Antarctica, including 5 developing countries and 11 developed countries.

As recorded in the Final Act of the Fourth Special Consultative Meeting, the Meeting noted the requirement under Article 8 of the Convention for a separate Protocol on liability and agreed that it would be desirable to begin work on its elaboration at an early stage.

(v) STATUS OF ANTARCTIC TREATY RECOMMENDATIONS

(SUBMITTED BY THE UNITED STATES OF AMERICA)

The attached list shows the Depositary Government's record of the current status of Antarctic Treaty recommendations.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at First Meeting (Canberra 1961)	10 Recommendations adopted at Second Meeting (Buenos Aires 1962)	11 Recommendations adopted at Third Meeting (Brussels 1964)	28 Recommendations adopted at Fourth Meeting (Santiago 1966)	9 Recommendations adopted at Fifth Meeting (Paris 1968)
	Approved	Approved	Approved	Approved	Approved
Argentina	All	All	All	All	All
Australia	All	All	All	All	All
Belgium	All	All	All	All	All
Brazil (1983)+	All	All	All	All	All
Chile	All	All	All	All	All
China (1985)+	All	All	All	All	All
Finland (1989)+					
France	All	All	All	All	All
German Dem. Rep. (1987)+	All	All	All	All	All
Germany, Fed. Rep. (1981)+	All	All	All except 8	All except 1-11 and 13-19*	All except 5*86
India (1983)+	All	All	All except 8***	All except 18	All
Italy (1987)+	All	All	All	All	All

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2
*** Accepted as interim guideline

\+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forwar

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at First Meeting (Canberra 1961)	10 Recommendations adopted at Second Meeting (Buenos Aires 1962)	11 Recommendations adopted at Third Meeting (Brussels 1964)	28 Recommendations adopted at Fourth Meeting (Santiago 1966)	9 Recommendations adopted at Fifth Meeting (Paris 1968)
	Approved	Approved	Approved	Approved	Approved
Japan	All	All	All	All	All
Korea, Rep. of (1989)+					
New Zealand	All	All	All	All	All
Norway	All	All	All	All	All
Peru (1989)+					
Poland (1977)+	All	All	All	All	All
South Africa	All	All	All	All	All
Spain (1988)+	All	All	All	All	All
Sweden (1988)+					
U.S.S.R.	All	All	All	All	All
U.K.	All	All	All	All	All
Uruguay (1985)+	All	All	All	All	All
U.S.A.	All	All	All	All	All

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

Approval, as notified to the Government of the United States of Americ of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	15 Recommendations adopted at Sixth Meeting (Tokyo 1970)	9 Recommendations adopted at Seventh Meeting (Wellington 1972)	14 Recommendations adopted at Eighth Meeting (Oslo 1975)	6 Recommendations adopted at Ninth Meeting (London 1977)	9 Recommendations adopted at Tenth Meeting (Washington 1979)
	Approved	Approved	Approved	Approved	Approved
Argentina	All	All	All	All	All
Australia	All	All	All	All	All
Belgium	All	All	All	All	All
Brazil (1983)+	All except 10	All except 5	All	All	All
Chile	All	All	All	All	All
China (1985)+	All except 10	All except 5	All	All	All
Finland (1989)+					
France	All	All	All	All	All
German Dem. Rep. (1987)+	All	All	All	All	All
Germany, Fed. Rep. (1981)+	All except 9, 10**	All except 5	All except 1,2,5	All	All
India (1983)+	All except 9 and 19	All	All	All	All except X-1 & X-9
Italy (1987)+	All	All except 5	All	All	All X-1 & X-9

** VI-8 terminated by VIII-5

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	15 Recommendations adopted at Sith Meeting (Tokyo 1970)	9 Recommendations adopted at Seventh Meeting (Wellington 1972)	14 Recommendations adopted at Eighth Meeting (Oslo 1975)	6 Recommendations adopted at Ninth Meeting (London 1977)	9 Recommendations adopted at Tenth Meeting (Washington 1979)
	Approved	Approved	Approved	Approved	Approved
Japan	All	All	All	All	All
Korea, Rep. of (1989)+					
New Zealand	All	All	All	All	All
Norway	All	All	All	All	All
Peru (1989)+					
Poland (1977)+	All	All	All	All	All
South Africa	All	All	All	All	All
Spain (1988)+	All	All	All	All	All except X-1 & X-1X
Sweden (1988)+					
U.S.S.R.	All	All	All	All	All
U.K.	All	All	All	All	All
Uruguay (1985)+	All	All	All	All	All
U.S.A.	All	All	All	All	All

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	3 Recommendations adopted at Eleventh Meeting (Buenos Aires 1981)	8 Recommendations adopted at Twelfth Meeting (Canberra 1983)	16 Recommendations adopted at Thirteenth Meeting (Brussels 1985)	10 Recommendations adopted at Fourtheenth Meeting (Rio de Janeiro 1987)	11 Recommendations adopted at Fiftheenth Meeting (Paris 1989)
	Approved	Approved	Approved	Approved	Approved
Argentina	All	All	All	All	
Australia	All	All	All	All	
Belgium	All	All	All		
Brazil (1983)+	All	All	All	All	
Chile	All				
China (1985)+	All	All	All	All	
Finland (1989)+					
France	All	All	All	All	
German Dem. Rep. (1987)+	All	All	All	All	
Germany, Fed. Rep. (1981)+	All	All	All except 10 to 13	All	
India (1983)+					
Italy (1987)+					

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	3 Recommendations adopted at Eleventh Meeting (Buenos Aires 1981)	8 Recommendations adopted at Twelfth Meeting (Canberra 1983)	16 Recommendations adopted at Thirteenth Meeting (Brussels 1985)	10 Recommendations adopted at Fourtheenth Meeting (Rio de Janeiro 1987)	11 Recommendations adopted at Fiftheenth Meeting (Paris 1989)
	Approved	Approved	Approved	Approved	Approved
Japan	All	All	All	All	
Korea, Rep. of (1989)+					
New Zealand	All	All	All	All	
Norway	All	All	All		
Peru (1989)+					
Poland (1977)+	All	All	All	All	
South Africa	All	All	All	All	
Spain (1988)+	All except X1-1				
Sweden (1988)+					
U.S.S.R.	All	All	All	All	
U.K.	All	All	All		
Uruguay (1985)+	All	All	All	All	
U.S.A.	All	All	All	All	

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

ANNEX C

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS

(i) A JOINT AUSTRALIAN-FRENCH PROPOSAL IN THE FORM OF A PAPER INCLUDING A DRAFT RECOMMENDATION FOR ATCM XV: WORKING PAPER SUBMITTED BY AUSTRALIA AND FRANCE (XV ATCM/WP/2)

(ii) FRANCO-AUSTRALIAN DRAFT WORKING PAPER ON POSSIBLE COMPONENTS FOR A COMPREHENSIVE CONVENTION FOR THE PRESERVATION AND PROTECTION OF ANTARCTICA: WORKING PAPER SUBMITTED BY AUSTRALIA AND FRANCE (XV ATCM/WP/3)

(iii) WORKING PAPER ON THE PROTECTION OF THE ANTARCTIC ENVIRONMENT SUBMITTED BY NEW ZEALAND (XV ATCM/WP/4)

(iv) COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS: WORKING PAPER SUBMITTED BY CHILE (XV ATCM/WP/7)

(v) COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS: WORKING PAPER SUBMITTED BY THE UNITED STATES (XV ATCM/WP/8)

(vi) COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS: PROPOSED OUTLINE OF A DRAFT RECOMMENDATION BY THE SWEDISH DELEGATION (XV ATCM/WP/14)

(i) **A JOINT AUSTRALIAN-FRENCH PROPOSAL IN THE FORM OF A PAPER INCLUDING A DRAFT RECOMMENDATION FOR ATCM XV: WORKING PAPER SUBMITTED BY AUSTRALIA AND FRANCE (XV ATCM/WP/2)**

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND ITS DEPENDENT AND ASSOCIATED ECOSYSTEMS

1. BACKGROUND

From the establishment of the Antarctic Treaty System, the Consultative Parties, in exercise of their special responsibilities, have demonstrated a sustained concern to protect and conserve the fragile and unique Antarctic environment.

That sustained concern is fully justified for a number of reasons. Antarctica has a major influence on the world climate. Moreover, by reason of its location, harsh climate and relatively pristine wilderness qualities, the Antarctic environment offers special opportunities for research in many fields. Many of the most important areas of study concern the world's climate. Partly as a result of Antarctic research, we know that human activities are responsible for many changes in the global environment. The process of studying those changes and of developing responses to them is assuming some considerable urgency.

The Antarctic region, including the Southern Ocean, is inextricably linked with the global environment and thus has an essential role in studies of it. Interactions between the atmosphere, ice, ocean and living systems affect the entire global system through mechanisms still unsufficiently understood. Antarctica has a major influence on the global environment. The Antarctic ice sheet contains 70% of the world's fresh water. Any significant changes to the Antarctic environment could have global consequences for atmospheric and oceanic circulation and upon sea levels.

Antarctica presents an unsurpassed opportunity for wilderness preservation. The value of Antarctica's wilderness qualities is recognized by Consultative Parties. There is a value in the preservation of those qualities for their own sake. They are of outstanding significance. The vast majority of Antarctica is wilderness in the classic sense -large expanses affected principally by natural forces. Human impacts are limited mainly to the research stations, most of which are located on the few relatively small ice free areas. Antarctica is still remote from centers of industry and still relatively uncontaminated.

This is not to say that it is unaffected by human activity. The impact of human activities in some areas is now becoming an increasingly important issue. Of real

environmental concern are the growing number of scientific stations especially where they become concentrated in some areas, the potential for dramatic increase in tourist activities, and the risks of accidents with even the best conducted scientific drilling.

The most obvious impact of human activities on the Antarctic environment lies simply in the impact of the infrastructure required to maintain a human presence there. The establishment of a station can have a permanent impact on the environment and its continued operation can have significant cumulative effects. The impact of wastes and their discharge into the sea or atmosphere is also relevant. Human activity in Antarctica cannot avoid the environmental impacts of foot, vehicular, air and marine traffic. The need to assess impacts and make judgements about their acceptability therefore assumes some importance.

2. EXISTING PROTECTION OF THE ANTARCTIC ENVIRONMENT

The Antarctic environment, and its dependent and associated ecosystems, are protected in a number of ways including the legislation and management policies of states, the provisions of the Antarctic Treaty System and measures under the Treaty System.

The measures under the Treaty System include:

- the agreed measures for the conservation of Antarctic fauna and flora;
- the code of conduct for Antarctic expeditions and station activities;
- numerous recommendations including guidelines for environmental impact assessment, scientific drilling and consultation as to the siting of stations.

The conventions now forming part of the Antarctic Treaty System are:

- the Convention on the Conservation of Antarctic Seals ("CCAS"); and
- the Convention on the Conservation of Antarctic Marine Living Resources ("CCAMLR").

In addition, the Convention on the Regulation of Antarctic Mineral Resource Activities ("CRAMRA") has been concluded.

The present system of instruments and measures has evolved as human activity in Antarctica and awareness of the consequences of that activity has grown. As a result there is now a combination of hortatory measures and others requiring implementing measures to provide protection for some

components of the Antarctic environment or in respect of different classes of activity.

3. THE NEED FOR A COMPREHENSIVE APPROACH

While this evolutionary approach has been wide ranging, it left many significant gaps. It requires constant attention to ensure its adequacy in the face of changes in the nature of human activities. The different standards and procedures in the various treaties, recommendations and measures reflect the differing times and contexts in which they were drawn up. There are real problems with adequacy, in ensuring compliance in practice and with coordination.

The need for a comprehensive scheme of protection for the Antarctic environment is now pressing. The world community is recognizing that an integrated approach must be taken to environmental problems. Effects of human activity are no respecter of the artificial competences that may be set up between different institutions. A target obviously in need of protection may require attention to be given to a whole range of matters which may previously have been considered unrelated. There is also a need to protect the scientific value of an untouched Antarctica.

There is a fundamental tension between the value of Antarctica in its relatively untouched state and the increasing human activity. Many of the factors leading to human activity in Antarctica have their basis in its pristine qualities. Yet it is those very qualities that can be most at risk from human activity.

While noting the immediate scope for additional ad hoc measures to protect the Antarctic environment, in the view of France and Australia it is timely to consider the requirements for overall protection of the Antarctic environment. The only forum to do this lies within the Antarctic Treaty System which has proven able to respond effectively to changing circumstances. However, the future strength of the Treaty System will depend upon its ability to continue to grow and adapt.

4. PROPOSALS FOR A COMPREHENSIVE APPROACH

At the Preparatory Meeting for ATCM XV held in Paris in May 1989 there was considerable discussion of the desirability of a more comprehensive and co-ordinated approach to environmental protection in Antarctica.

The Secretary General of the French MFA, M. Scheer, referred to the matter in his opening remarks. The delegation of Chile took up this theme and circulated a paper, WP/PREP 1, proposing the inclusion of an item on the agenda for ATCM XV entitled "Comprehensive measures for the protection of the

Antarctic environment and dependent and associated ecosystems". The inscription of this item received the unanimous support of the Treaty parties, and a number of delegations circulated papers or made comments designed to explore options and ways of advancing the consideration of the item through the consultative process. Since the Preparatory Meeting, the Governments of France and Australia, amongst others, have declared their strong commitment to the protection of the Antarctic environment and the merits of the comprehensive approach. They have also suggested for consideration some specific options for the achievement of this objective which have built on earlier proposals made within the Treaty System. Further alternatives are likely to be forthcoming from other Consultative Parties.

5. DRAFT RECOMMENDATION TO ATCM XV

In order to assist this process the Governments of Australia and France have developed the attached draft recommendation concerning a Special Antarctic Treaty Consultative Meeting on the protection of the Antarctic environment in accordance with the approach taken at the Preparatory Meeting in May.

DRAFT RECOMMENDATION

The Representatives,

Considering and Recognising that:

1. in the environment of the Antarctic Treaty area the ecosystem is particularly vulnerable to human interference;
2. the Antarctic derives much of its scienfitic importance from its uncontaminated and undisturbed wilderness condition; and
3. there is an increasingly urgent need to protect the environment from the impacts of human activity;

Conscious that international concern for the environment and the importance of Antarctica for the global environment requires a review of existing measures;

Conscious that the growing intensity of human activity in the Antarctic calls for a co-ordinated approach to environmental protection and conservation contained under the Antarctic Treaty System;

Recognising the prime responsibilities of the Consultative Parties in relation to the protection and conservation of the environment in the Antarctic Treaty area and the importance of the work they have undertaken to this end;

Convinced further of the necessity of maintaining the Antarctic Treaty in its entirety and believing that the early

conclusion of a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems establishing Antarctica as a nature reserve, land of science, would further strengthen the Antarctic Treaty Framework;

Noting the unity between the continent of Antarctica, its atmosphere and the adjacent offshore areas;

Recalling the history of action taken by Consultative Parties concerning conservation and protection of the Antarctic ecosystems including, in particular, Recommendations III-VIII, VIII-11, XII-4, X-7 and XIV-2;

Convinced that the early conclusion of an environmental protection regime is required to enhance protection of the Antarctic environment;

RECOMMEND TO THEIR GOVERNMENTS THAT:

1. a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems should be concluded as a matter of urgency in order to establish the Antarctic as a nature reserve, land of science.

2. they promote and co-operate in scientific investigations which would facilitate the effective operation of the proposed regime and that generally they intensify as far as possible scientific research related to the Antarctic environment.

3. in keeping with consensus amongst ATCPS to protect fully the Antarctic environment, a Special Consultative Meeting be convened in 1990 in order to:

a) review existing measures under the Antarctic Treaty System affecting the protection of the Antarctic environment and dependent and associated ecosystems;

b) elaborate a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems as a nature reserve, land of science;

c) determine the form of the regime, including the question whether an international instrument under the Antarctic Treaty System such as a convention or protocol is necessary;

d) establish a schedule for its deliberations, using formal meetings and sessions of the Special Consultative Meeting as appropriate; and

e) take any other steps that may be necessary to facilitate the conclusion of the regime, including a decision as to the procedure for its adoption;

4. the Special Consultative Meeting shall base its work on this recommendation and take account of the discussions at the Fifteenth Consultative Meeting, its report and the documents presented to it, and, in the elaboration of a comprhensive regime, shall take into account inter alia the following elements:

a) the regime should explicitly recognise the prime responsibilities of the consultative parties in relation to the protection of the environment in the Antarctic Treaty area and take account of existing measures recommended by the Consultative Parties to this end;

b) the Antarctic Treaty must be maintained in its entirety;

c) the provision of Article IV of the Antarctic Treaty shall not be affected by the regime. It should ensure that the principles embodied in Article IV are safeguarded in application to the areas south of 60 degrees South latitude;

d) the regime should provide for the effective protection of the Antarctic environment and ecosystems as a whole with special regard to their scientific and related wilderness qualities;

e) the need to determine the territorial scope of the regime bearing in mind existing instruments of the Antarctic Treaty System.

5. the regime should establish:

a) principles for the regulation or prohibition of human activities harmful to the Antarctic environment or its dependent or associated ecosystems;

b) means for assessing the possible impact of human activities on the Antarctic environment and the acceptability of them in order to provide for informed decision-making;

c) a requirement that all human activities undertaken within the territorial scope of the regime be undertaken in compliance with the regime;

d) appropriate institutional arrangements for its implementation by the ATCPS;

e) provisions for co-operative arrangements between the regime and other relevant international organisations;

f) provision for the promotion of research related to necessary environmental management decisions.

(ii) **FRANCO-AUSTRALIAN DRAFT WORKING PAPER ON POSSIBLE COMPONENTS FOR A COMPREHENSIVE CONVENTION FOR THE PRESERVATION AND PROTECTION OF ANTARCTICA: WORKING PAPER SUBMITTED BY AUSTRALIA AND FRANCE (XV ATCM/WP/3)**

I. PREAMBLE

1. As several recent international conferences have pointed out, it is now a matter of urgency to take all necessary steps to protect our imperilled environment.

2. Ever since the institution of the "Antarctic Treaty System", the Consultative Parties have displayed their concern to preserve the unique and fragile environment of this region, the last unsullied spot on earth. Very early on, these states decided:

- a set of approved measures for the conservation of Antarctic fauna and flora;
- a "code of conduct" for expeditions and scientific activities in the Antarctic;
- in a wide variety of spheres, a great many measures relating to the preservation of the environment which account for the majority of the 164 recommendations adopted in the 30 years since the signature of the Washington Treaty.

Similarly, several conventions have been adopted by the members of the Antarctic Treaty System and are now in force, e.g.:

- the Convention for the Protection of Antarctic Seals (1972);
- and the Convention on the Conservation of Antarctic Marine Living Resources (1980).

Lastly, the Convention on the Regulation of Antarctic Mineral Resource Activities, which contains restrictive rules and mechanisms for the protection of the environment, has recently been laid open for signature.

3. In view of the rise in local pollution due to the development of human activities in the Antarctic (e.g. the proliferation of scientific bases and their logistics, increasing tourism and the intensification of marine and air traffic) and the concern to give priority to the protection of this territory given over to scientific research, it is important to create a cogent framework within which to amplify, systematize and co-ordinate these manifold sectoral measures. It is also important to go on developing the

implementation of monitoring and inspection procedures, in which there appears to be room for improvement.

There is now therefore an urgent need for a comprehensive system of protection. The time has come to frame a comprehensive convention relating to the preservation of the Antarctic environment and dependent or connected ecosystems.

II. PRINCIPLES

1. The comprehensive convention shall declare the Antarctic a "nature reserve, land of science".

2. Throughout the Antarctic, human activities having an impact on the environment shall be regulated or, where agreed as necessary, prohibited.

3. The convention shall take account of the requirements of scientific activity as determined by the Consultative Parties and the principles estabished in Article II of the Washington Treaty.

4. The convention shall lay down the bases of the strategy for the protection of the environment in the Antarctic. It shall seek:

- first, to spell out general principles regarding:
  . comprehensive protection of the Antarctic environment;
  . types of activities to be regulated;
  . appropriate protective mechanisms;

- second, to set up institutions to implement these principles.

5. The Consultative Parties shall formulate and implement the convention.

6. This convention shall become an integral part of the Antarctic Treaty System. It shall provide the framework for all sectoral measures either taken or to be taken.

7. The environmental protection strategy shall be conducted in cooperation with world scientific programs. It will take their orientations into account.

III. PROTECTIVE MEASURES

1. Protective measures shall take account of scientific studies.

2. Activities in certain zones requiring special protection should be restricted and, where necessary, prohibited.

3. Activities consistent with the principles of the Antarctic Treaty may be subject to measures. These measures shall be framed having regard to the nature of the activity concerned and appropriate institutional arrangements. The activities concerned shall include:

- shipping and port installations in the Antarctic Ocean;
- air trasport, the installation and maintenance of airport infrastructures;
- non-governmental expeditions and tourism;
- the organisation, setting up and operation of scientific stations and bases;
- discharges of waste resulting from various activities on the Antarctic continent.

4. The convention shall lay down the rules for the protection of the Antarctic continent including animal and plant species.

5. The convention shall lay down standards for surveys of the environmental impact on all activities carried on in the Antarctic. It shall seek to institute appropriate means of prevention and dealing with the consequences of environmental damage.

6. The convention shall frame the general principles for a onitoring system.

IV. INSTITUTIONS

1. For the purpose of implementing these general standards, the convention shall set up a system of institutions responsible for devising practical measures and monitoring their application.

2. There shall be three such institutions:

- an environmental commission;
- a scientific and technical committee;
- an arbitration body.

These institutions shall be assisted by a secretariat and an inspection and monitoring corps.

3. The environmental commission, consisting of representatives of the Consultative Parties, shall meet once a

year. This commission could be invested with the following powers:

- to decide on all measures required to implement the principles laid down in the convention or in recommendations adopted by consultative conferences;

- to define the zone, or zones, in which the different types of activity may be carried on (e.g. siting of research stations, delineation of zones reserved for tourism);

- to ensure coordination of the environmental protection policy pursued by the other institutions derived from the conventions forming the Antarctic Treaty System;

- to prepare an annual report on the state of the environment in the Antarctic; these reports shall be communicated to all interested governemental and non-governmental bodies.

4. The scientific and technical committee, consisting of scientists of internationally recognised standing, shall deliver an opinion on the measures envisaged by the commission and on scientific programmes.

5. The secretariat shall assist the commission in monitoring application of measures adopted within the framework of the nature reserve.

6. The inspection and monitoring corps shall enjoy complete freedom of investigation. Monitoring shall be performed by full-time inspectors operating throughout the land and maritime zone covered by the convention.

7. The arbitration body shall hear such disputes as may arise concerning interpretation and application of the convention.

ANNEX TO COMPONENTS PAPER

COMMENTS ON THE FRENCH-AUSTRALIAN PROPOSALS FOR COMPONENTS OF A COMPREHENSIVE CONVENTION ON THE PROTECTION OF THE ENVIRONMENT IN ANTARCTICA

1. France and Australia propose to the Parties that ATCM XV decide upon a Special Consultative Meeting to define a comprehensive regime for the protection of the environment and of the dependent and associated ecosystems in Antarctica which should take place in 1990. Without prejudicing the proposals that have or will be made by the other Consultative Parties, France and Australia consider that this regime should take the form of a comprehensive convention.

2. The aim of France and Australia is to reinforce the Antarctic Treaty System in two principal ways:

2.1. to indicate to the international community the determination of the Antarctic Treaty to protect Antarctica. For this reason it is essential to define clearly what environmental protection the Treaty System affords.

2.2. to ensure the completeness of the system and to provide a framework for measures applicable to specific activities.

3. The proposal is aimed at providing the Consultative Parties with the necessary means to protect the environment in Antarctica.

3.1. The comprehensive convention would establish a general framework for the protection of the environment having regard to the diversity of human activities involved:

- through the general principles set out in the convention;
- through establishment of measures in the appropriate legal form consistent with the activity concerned and the general principles set out in the convention;
- through the coordination of environmental protection within the Antarctic Treaty System;
- through the appropriate means for prevention, intervention and monitoring;
- through the creation of institution to deal with environmental matters.

3.2. The institutions thus created would have the following three principles:

- they should respect the special responsibility of the Consultative Parties for the Antarctic environment by, for example, giving the Consultative Parties the function of the environmental commission under the convention;

- they should be effective to protect the Antarctic environment by, for example, permitting constant monitoring;

- the decision making process should be timely and effective.

4. Conclusion

The proposal by France and Australia would:

4.1. not result in the creation of a "parallel" system since:

- the comprehensive convention would be an integral part of the Antarctic Treaty System making it complementary and not competitive;

4.2. simply reinforce the system of the Antarctic Treaty:

- by confirming the special responsibilities of the Consultative Parties and the Consultative Meetings;

- by ensuring the consistent and comprehensive handling of environmental matters within the system;

- by maintaining the Antarctic Treaty in its entirety.

4.3. be a constructive contribution to the consideration of the Consultative Parties in order to provide the most effective response to the expectations of the international community.

5. France and Australia have expressed the wish that the Parties take their proposal into serious consideration. They will be attentive to all comments and thank the Parties in advance for all contributions that will go towards making the XVth Consultative Meeting a success, further adding to the remarkable achievements already made under the Antarctic Treaty.

(iii) **WORKING PAPER ON THE PROTECTION OF THE ANTARCTIC ENVIRONMENT SUBMITTED BY NEW ZEALAND (XV ATCM/WP/4)**

INTRODUCTION

Since the adoption of the Antarctic Treaty thirty years ago, the Antarctic Treaty Parties have taken a series of steps in recognition of the special nature of Antarctica and its importance to the global environment. They have adopted a range of measures to minimize the impact of human activity on the Antarctic environment, usually through the mechanism of Recommendations adopted pursuant to Article IX of the Treaty.

The nature of the measures has varied according to the matters under consideration. Some measures have set out general controls, such as the Agreed Measures for the Conservation of Antarctic Fauna and Flora and Recommendation XIV-2 on the application of environmental impact assessment procedures to scientific and logistic support activities. Others have stated general principles such as the Recommendations on human impact on the Antarctic environment that preceded Recommendation XIV2. Yet others have dealt with particular issues such as waste disposal or the effects of tourism.

In addition, the Treaty Parties have adopted a number of separate legal instruments to control and minimize the impact of particular forms of activity i.e. the Convention for the Conservation of Antarctic Seals, the Convention on the Conservation of Antarctic Marine Living Resources and the Convention on the Regulation of Antarctic Mineral Resource Activities.

It has become increasingly apparent, however, that notwithstanding the breadth in coverage of the instruments already in place, there are some significant gaps in the system and that the implementation of some of the instruments previously adopted has not always been up to the required or desired standards. It has also been recognised that the various elements of the system need to be more integrated and a greater degree of co-ordination achieved.

These facts, together with the recent and rapid growth in global environmental awareness, have alerted the Treaty Parties to the need to take a more comprehensive look at the protection and conservation of the Antarctic environment. This is shown by the inscription of the item on Comprehensive Measures for the Protection of the Antarctic Environment and its Dependent and Associated Ecosystems which is to be considered for the first time at the Fifteenth Antarctic Treaty Consultative Meeting.

The New Zealand Government has recently reviewed its approach to environmental protection in Antarctica. A White Paper on the Antarctic Environment was presented to the New Zealand House of Representatives by the Prime Minister and Minister for the Environment, the Right Honourable Geoffrey Palmer, on 9 August. The White Paper sets out the elements of an integrated and biding environmental protection regime for Antarctica that is to be promoted by New Zealand. A process of consultation with interested non-governmental organizations in New Zealand was also undertaken. A measure of agreement was reached and is reflected in the proposals set out in this paper.

It is against this background that the New Zealand delegation puts forward the following proposals for the consideration of the Antarctic Treaty Parties. New Zealand believes that this Consultative Meeting should agree that a further Consultative Meeting should be held in 1990 to consider detailed measures of environmental protection for Antarctica within an integrated framework.

OBJECTIVES AND PRINCIPLES

In New Zealand's view, the Treaty Parties need to review the measures that have already been put in place and identify and fill the gaps in the coverage of those measures. But in order to ensure a properly integrated, comprehensive and internally consistent regime of environmental protection it is desirable that there be elaborated a series of basic standards that must be met by all forms of human activity in the Treaty area. Such a set of principles would ensure that the protection of the Antarctic environment is a fundamental consideration in the planning and performance of all human activity in Antarctica.

As a first step it would be appropriate for the Recommendation of the Fifteenth Consultative Meeting that calls for the convening of a further Consultative Meeting on environmental protection next year to set out basic principles of environmental protection as part of the mandate for next year's meeting. There is a good deal of material in measures that have already been adopted within the Treaty system that provide a basis for the elaboration of these principles: e.g. the Agreed Measures for the Conservation of Antarctic Fauna and Flora and the Recommendations leading to the adoption of Recommendation XIV-2. In addition, some of the separate treaties that have been adopted by the Treaty Parties might be drawn upon. For example, Article 4 of the Convention on the Regulation of Antarctic Mineral Resource Activities provides a number of criteria, cast in the form of prohibitions, that must be met by all activities covered by that Convention. Principles of more general application, however, would have to be framed rather differently.

The principles should take account of the following considerations:

- a recognition of the importance of Antarctica to the global environment;

- a recognition of the vulnerability of the Antarctic environment to adverse impacts from human activity;

- a recognition that activities in Antarctic must not affect global or regional climate or weather patterns;

- the need to guard against unacceptable impacts on the atmospheric, ice, fresh water and marine environments of Antarctica and their associated and dependent ecosystems;

- the need to conserve the ecosystems and physical processes of the region and to protect threatened and endangered species or populations of such species;

- the need to preserve the genetic diversity of species;

- the need to protect areas of special biological, scientific, historic, aesthetic or wilderness value;

- the need to ensure continuation of scientific research and cooperation;

- the need to ensure that all decisions about activities likely to have an impact on the environment are taken on the basis of adequate information.

It follows from the above that New Zealand believes that the integrated regime of protection for the Antarctic environment should build on and strengthen what has already been achieved by the Treaty system. New Zealand does not seek to duplicate or replace the work of the past thirty years of successful international cooperation. Clearly, the existing arrangements taken as a whole are not yet sufficient in scope or implementation to provide the protection that Antarctica warrants, but they do provide a solid foundation on which to build.

MEASURES OF GENERAL APPLICATION

This paper does not attempt to address in detail the whole range of issues that need to be considered in an integrated approach to environmental protection for Antarctica. The following is intended to highlight a number of measures of a general nature that apply to all human activity in Antarctica as well as a series of specific issues which, in New Zealand's

view, need attention at the XVth Consultative Meeting and at the Consultative Meeting on Environmental Protection proposed for next year.

Pollution

Pollution is one of the most obvious adverse impacts on the Antarctic environment and is an issue that must be considered by every visitor to the Antarctic Treaty area. A range of steps to minimize pollution of the Antarctic environment have been taken over the years but, as the events of recent sessions have shown, more needs to be done to prevent pollution of the continent and its surrounding waters. Pollution issues can be considered under the following headings:

Waste Management

In the past, waste disposal practices have not been satisfactory. Improvements have been made but it is clear that wastes from human activities have the potential to despoil parts of Antarctica, particularly where permanent facilities have been set up in or near sensitive areas. A number of measures have been adopted to deal with this issue, in particular the Code of Conduct for Antarctic expeditions and station activities adopted pursuant to Recommendation XIII-11.

New Zealand supports the adoption of the Revised Code of Conduct that has been prepared by the SCAR Panel of Experts on Waste Disposal and which is to be considered at the Fifteenth Consultative Meeting. The revised Code represents a major step forward in controlling the impact of human activity in Antarctica. At the same time New Zealand believes that the provisions of the revised Code should be strengthened in a number of respects by:

- removing some of the exceptions to its provisions to make it more binding on Antarctic operators;

- providing for stronger provisions to monitor waste disposal procedures;

- ensuring that the Code is applied to all activities in Antarctica, including tourist operation.

In addition, New Zealand believes that the Treaty Parties should give a stronger commitment to increasing the amount of waste removed from Antarctica and returned to the country of origin for final disposal.

Marine Pollution

New Zealand supports the proposals put forward by the United States at the Preparatory Meeting for the Fifteenth Consultative Meeting in May in Document PREP/WP/2 for the

adoption of measures to minimise the dangers of the pollution of Antarctic waters, especially from vessel-sourced pollution. In particular, the Treaty Parties should agree to take the following series of steps:

- undertake a common commitment to adhere to the relevant international Conventions dealing with marine pollution, particularly the International Convention for the Prevention of Pollution from Ships 1973 and its Protocol and Annexes (MARPOL) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters 1972 (the London Dumping Convention);

- work for the designation of the waters around Antarctica as "special areas" under MARPOL;

- agree to apply as far as possible the MARPOL standards to all vessels operating in the Treaty area, including naval and other government vessels;

- work for the adoption of agreed standards for vessel design and operation, including the promotion of an appropriate ice classification;

- develop procedures, as envisaged in Recommendation XIV-10, to ensure the availability of more up to date data and information on weather and ice conditions and ensure the widespread availability of charts and maps showing hazards, protected and other vulnerable coastal areas, and navigational aids;

- cooperate in the application of appropriate risk assessment procedures for vessel operation in Antarctic waters.

Hazardous Materials

The increasing level of operations in Antarctica has inevitably led to an increase in the storage of hydrocarbons and other hazardous materials on land. It has brought with it the increased risks of spills and potentially serious damage to the local terrestrial and marine environments. New Zealand believes attention should be given to the establishment of agreed procedures for the safe storage and handling of hydrocarbons and other hazardous materials on land, and the development of contingency plans, including international cooperation, to contain and clean up spills which should include the identification of coastal and other areas at greatest risk and the storage of equipment to contain and clean up spills.

Environmental Impact Assessment Procedures

The concepts and principles of environmental impact assessment have developed steadily since the 1970s and have been applied in stages in the Antarctic since that time. A landmark in this process was achieved with the adoption of Recommendation XIV-2 at the Fourteenth Consultative Meeting which provides for the application of standard Environmental Impact Assessment procedures or Comprehensive Environmental Evaluations to scientific research and associated support activities. The adoption of this Recommendation marked a recognition by the Treaty Parties of the considerable benefits of EIA procedures. These include:

- providing a means for weighing the advantages expected to be derived from a proposed activity against the likely environmental impacts;

- ensuring due account is taken of cumulative impacts on the environment and on other uses of Antarctica;

- providing a means for outside advice to be utilized into the planning process.

The full benefits of EIA, however, have not yet been realized in Antarctica. At present, Recommendation XIV-2 applies only to scientific research and support activities, whereas the nature, extent, duration and probability of impacts need to be assessed regardless of the type of activity e.g. science or tourism. Accordingly, New Zealand proposes that the scope of Recommendation XIV-2 should also be broadened to cover all activities in Antarctica or, as an alternative, that arrangements worked out in respect of particular activities (e.g. tourism) must include the application of EIA procedures. It is also important that the procedures should apply to all stages of an activity. In this respect, New Zealand endorses the comment by SCAR that EIA procedures should be applied to the decommissioning of facilities.

Even within the parameters of the current scope of Recommendation XIV-2, there is room for a considerable enhancement of the benefits of EIA. For example, useful work could be done in identifying the measures envisaged in paragraph (v) (f) of Recommendation XIV-2, particularly in developing programmes to monitor impacts and to evaluate the effectiveness of procedures adopted to minimize or mitigate environmental damage. In this way compliance with project approvals, measures to protect special areas and other controls could be monitored to assist proposers of projects to ensure that their activities are environmentally acceptable in practice as well as principle.

Advantage could also be taken of comments on Comprehensive Environmental Evaluations offered by other Treaty Parties, as well as interested intergovernmental and non-governmental

organizations and other experts. Giving due weight to such comments in the final decision making process in one way of making environmental impact assessment an integral and indispensable part of a comprehensive environmental protection regime for Antarctica.

Protected Areas

Establishment of areas within Antarctica to be given special protection is an effective war of ensuring the preservation of unique wildlife and vegetation sites and other outstanding natural, cultural, historic and scientific features.

Existing measures under the Antarctic Treaty system provide for six categories of protected area; viz, Specially Protected Area, Site of Special scientific Interest, Seal Reserve, Historic Monument, Tomb, and Marine Sanctuary. Under active consideration is an additional category, Antarctic Protected Area, which would extend the scope of existing protection to cover also areas of scenic beauty and areas critical for the ecology of exploitable living resources, and would provide for management planning and zoning in multiple-use areas of diverse values.

Although there has been a concerted and commendable effort to meet the needs of special protection in Antarctica, New Zealand believes a comprehensive review of the protected area network and policy is required. This review should build on existing measures and put in place comprehensive arrangements providing for a range of categories sufficient to accomodate the required range of protection objectives. It should extend representation of geographical and ecological diversity, improve site protection for historic monuments, promote a management planning process which would allow for public participation and cover the selection and establishment of sites and the adoption of management policies and programmes. It should ensure active management of protected areas and enforcement of protection regulations, and improved information especially to assess the effectiveness of protected areas in meeting management objectives.

Response Action and Liability

Another major issue for consideration is that of liability for damage to the environment as a result of human activity. Specific arrangements have been made or are in contemplation in respect of response action and liability for damage arising out of mineral resource activities. Consideration should now be given to the best means for dealing with the fundamental issue with regard to other activities in Antarctica. The questions that need to be addressed include:

- obligation to take response action in the event of actual or threatened damage;

- compensation for damage, including costs of response action;
- nature and levels of liability;
- defences;
- tribunal for adjudicating claims.

Monitoring and Inspection

Monitoring of ongoing activities to determine their impact on the environment is a standard environmental protection technique, but it has not been given a great deal of attention to date in measures adopted under the Treaty system. The Treaty Parties should agree to apply effective and open monitoring and reporting procedures to all major activities in Antarctica such as the operation of stations and substantial field operations. These procedures should also be applied to other significant activities such as in areas where tourist activities are concentrated.

The inspection provisions of the Treaty are often cited as one of the strengths of the system. In fact, until recent years they have been used infrequently. There has been a marked increase in numbers of inspections undertaken and in the range of countries performing them in the last few years, but the coverage is uneven and there are no consistent criteria to be applied by the inspection teams. Moreover, there are at present no standard procedures to be applied by inspection teams to inquire into compliance with environmental protection requirements agreed to by the Treaty Parties.

Attention should also be given to the development of standard criteria to be applied by all inspection teams including the development of procedures, such as agreed guidelines, to verify the consistent application of environment protection standards.

Joint inspections by two or more Treaty Parties would be one way of ameliorating the logistic and financial constraints that limit the ability of Treaty Parties to undertake inspections. The joint New Zealand/United Kingdom inspection that was carried out in January the year is an example of a successful pooling of resources. Greater cooperation in this area should lead to the development of a more systematic programme of inspection visits.

Dispute Settlement Procedures

At present the Treaty system has only minimal procedures for ensuring compliance with mandatory measures that have or will be adopted to protect the environment. The exception is to be found in the procedures agreed in respect of mineral resource activities under the Convention on the Regulation of Antarctic Mineral Resource Activities. That Convention

contains a comprehensive set of dispute settlement provisions, some of which are optional, but a number of which (e.g. those dealing with actual or potential damage to the environment) are compulsory for all Parties.

Following the example of the Minerals Convention, the Treaty Parties should develop a set of binding dispute settlement procedures that would apply to damage or potential damage to the Antarctic environment or its associated or dependent ecosystems arising out of activities not covered by other legal instruments. These procedures should include:

- the identification of agreed categories of disputes to be covered by the procedures;

- a mechanism for the convening of a tribunal or panel of arbitrators to hear and decide the disputes;

- a mechanism to enable the rapid hearing of and decision on any dispute involving serious or potentially serious damage to the environment.

Such procedures would considerably strengthen the Treaty system and would be a major advance in the protection of the Antarctic environment.

Information Requirements

Fundamental to any environmental protection regime is the requirement for accurate and authoritative information to enable informed judgements to be made. Much of the necessary information comes from the scientific research programmes that are the cornerstone of activities in Antarctica. There are, however, new initiatives which can be taken to expand the environmental information base and make it more accessible.

It is essential at least to maintain the present level of basic research, particularly into ecological and physical processes. These are the studies which, in the long term, will provide the information needed to understand the structure and functioning of the Antarctic environment and its relationships with the rest of the globe.

There remains a need for a broad spectrum of other research. Experience suggests that environmental impact assessment requires site and project specific information, the nature of which is hard to predict in advance.

There is also a need for applied research and for monitoring of ecosystems to establish what constitutes a significant impact and what jeopardises systems. In particular, there is a need to identify a full range of environmental markers, or change indicators.

Greater attention should be given to inventory and environmental baseline monitoring to build up knowledge about

the distribution of plant and animal communities in order to aid identification and protection of important natural areas. Mechanisms should be developed to standardise the collection and presentation of data. Above all, procedures must be instituted to ensure that information generated, regardless of source, is readily accessible and is publicly available. It is essential that such information is provided promptly in order that its full benefits can be realized.

In addition, consideration should be given to:

- supporting and fostering international inter-disciplinary Antarctic studies, such as those associated with the International Geosphere Biosphere Programme;

- requesting SCAR's ad hoc group on Environmental Data Management to report to the Consultative Meeting proposed for next year on the data needs for planning, managing and evaluating activities;

- requesting SCAR report to next year's Consultative Meeting on appropriate environmental indicators and long term monitoring programmes;

- considering the establishment of Antarctic environmental data centres;

- considering ways in which the annual Exchanges of Information can be co-ordinated with the annual reports of the National Committees constituting SCAR.

SPECIFIC ISSUES

Measures Specific to the Conduct and Supports of Scientific Research Activities

Since the adoption of the Antarctic Treaty, scientific research has been the major human activity in Antarctica. It is likely to continue to be so for the foreseeable future. Its results, made freely available in accordance with the Treaty, are probably the most valuable contribution arising from human activity in the continent. They are essential to any efforts to understand and to protect Antarctica. Nevertheless, it has long been recognised that science and scientific support activities can themselves cause adverse impacts on the Antarctic environment. Such impacts can be minimized, and the scientific results maximized, through the use of appropriate technologies and by increased co-operation in scientific and logistic activities.

A wide range of measures to control the environmental impacts of science programmes in Antarctic has already been established through codes of conduct elaborated by SCAR and in Recommendations adopted by the Treaty Parties. Particularly

relevant in this regard is Recommendation XIV-2 providing for the application of environmental impact assessment procedures to the planning of decisions about scientific research programmes and their associated logistic support facilities. Attention needs now to focus on ensuring compliance with the measures already adopted and to discouraging practices that can result in avoidable impacts; e.g. through unnecessary duplication of activities or the use of inappropriate technologies.

Accordingly, New Zealand proposes that consideration be given to:

- developing of incentives for greater sharing of facilities and resources, and disincentives to the establishment of new station facilities unless required for the performance of substantial new scientific research;

- developing, with SCAR, of means to encourage greater coordination of scientific endeavour and co-operation, the identification of research priorities and the promotion of multi-disciplinary and international studies;

- encouraging, in cooperation with the Council of Managers of National Antarctic Programmes (MNAPs), of greater sharing of information and advice on operational procedures and appropriate technologies for the benefit of those undertaking and those contemplating scientific research activities in Antarctica;

- requesting SCAR to advise on appropriate monitoring procedures for station operations and other significant scientific research activities;

- requesting SCAR and the Council of Managers of National Antarctic Programmes to review and propose any additions that may be necessary to Recommendation XIV-3 on scientific drilling, taking into consideration drilling codes of conduct such as those used by the Deep Sea Drilling Programme (DSSP).

Tourism

Tourism, including commercial flights and ship cruises with paying passengers, as well as privately-sponsored expeditions, is a well-established and growing part of Antarctic life. When considering the effects of tourism it is also necessary to take into account the numerous non commercial activities that can have an impact on the environment i.e. goodwill and VIP visits, the recreational activities of scientists and support personnel such as station staff and ship and air crews.

Properly regulated and managed tourist activities may have minimal environmental impact and can benefit Antarctic conservation by increasing public awareness of the special values of the region and engendering wider international support for environmental protection. Unregulated tourism, however, could cause serious environmental damage through overcrowding during short visits to sensitive areas, disruption of scientific activities, accidents resulting in costly rescue and clean-up operations, and construction of hotels, airfields and port facilities.

New Zealand believes that comprehensive arrangements to regulate tourism are required. These should consolidate existing Treaty Recommendations and establish policies aimed at minimising harmful environmental impacts of tourism, avoiding conflicts between tourist and other uses of the region, and fostering safe and responsible tourist operations. Regulatory measures should address, in particular, the application of environmental impact assessment procedures to tourism proposals, the setting of conditions for visits to sensitive or vulnerable wildlife sites, and also for visits to scientific stations and sites of field parties operations, the establishment of safety standards, and the provision of codes of conduct, operation manuals, information and educational materials, visitor handbooks and guides.

Uses of Antarctic Ice

Although New Zealand is not convinced that this is a matter that warrants priority attention, it was raised at the Twelfth and Thirteenth Consultative Meetings and at sessions of the Fourth Special Consultative Meeting on Antarctic Mineral Resources. As noted in the Final Act of the Fourth Special Consultative Meeting, if harvesting of ice, including icebergs, were to become a possibility in the future, there could be impacts on the Antarctic environment and its dependent and associated ecosystems. That Meeting agreed that the question of harvesting Antarctic ice should be considered at the Fifteenth Consultative Meeting.

New Zealand proposes that, since there is at present no serious commercial interest in the harvesting of Antarctic ice and in order to avoid the possible environmental impact referred to above as well as potential legal difficulties, the Treaty Parties should agree to a moratorium on the commercial uses of Antarctic ice.

INSTITUTIONS

A Secretariat

There has been a growing recognition among the Treaty Parties, particularly as the membership has grown, of the need for some form of permanent infrastructure or secretariat for the Antarctic Treaty to increase its efficiency and to assist

the Parties in dealing with the increasing complexity of the Treaty system. The issue was considered in some detail at the Thirteenth and Fourteenth Consultative Meetings. A substantial level of agreement was reached among a majority of Treaty Parties as to the advantages that a small secretariat would bring, particularly in providing a mechanism for servicing Treaty meetings, for ensuring continuity and for servicing the growing need for dissemination of information.

New Zealand believes that in addition to the arguments that have been made in the past in support of a Treaty secretariat, can be added a number of environmental considerations. In particular, a secretariat could play an invaluable role in assisting the Treaty Parties in:

- facilitating the exchange of information on environmental questions including such matters as reports on the preparation of Comprehensive Environmental Evaluations and the development of consistent environmental protection standards;

- coordinating the gathering of information, including environmental data, for example in compiling a register of areas of particular environmental sensitivity;

- acting as a central contact point for exchanging information with people outside the Treaty about measures adopted for the protection of the Antarctic environment.

For these reasons New Zealand supports the establishment of a small cost-efficient secretariat that would have, in addition to its other functions, specific environmental responsibilities and expertise.

Standing Working Group on the Antarctic Environment

New Zealand further believes that in order to address adequately the important policy issues involved in an integrated environmental protection regime, the Treaty Parties should agree to establish a Standing Environmental Working Group. The Working Group would be able to give advice on environmental issues to Consultative Meetings and thus ensure that Consultative Meetings are used efficiently for policy decision making.

Furthermore, such a Standing Environmental Working Group, if it were authorized to meet between Consultative Meetings, would allow progress to be made on developing environmental policies or addressing environmental issues that may arise between Consultative Meetings.

It should be noted that it is not intended that the proposed Working Group should supplement or substitute in any way for the work being undertaken by SCAR in providing expert

advice on environmental and other matters to the Treaty Parties.

Environmental Monitoring on Behalf of an Institution

As noted above, at present the Treaty system has only minimal procedures for ensuring compliance with mandatory measures that have been or will be adopted to protect the Antarctic environment. A number of measures have been suggested in this paper for improving the availability of information on environmental issues, for more effective procedures to monitor activities likely to cause environmental impacts, for building up the operation of inspection provisions of the Treaty and for providing a dispute settlement mechanism to strengthen the compliance machinery of the Treaty system.

In addition to those measures, consideration might also be given to the precedent established by the Convention on the Regulation of Antarctic Mineral Resource Activities for inspections to be carried out on behalf of an institution. This precedent could be considered for application to the broad range of activities not covered by the Convention and which may impact on the environment. New Zealand believes that such consideration is necessary because of the growing recognition of the importance of the protection of the Antarctic environment and the need for the Treaty Parties to establish an effective environmental protection regime.

(iv) **COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND ITS DEPENDENT AND ASSOCIATED ECOSYSTEMS: WORKING PAPER SUBMITTED BY CHILE (XV ATCM/WP/7)**

INTRODUCTION

The Preparatory Meeting of the XVth Consultative Meeting, which was held in Paris, France, from 9 to 13 May of this year, agreed to include in the agenda of the XVth Consultative Meeting the item "Comprehensive Measures for the Protection of the Antarctic Environment and its Dependent and Associated Ecosystems" which was proposed by the Delegation of Chile.

The substantive consideration of this matter should conclude in the adoption of a set of rules of a mandatory nature that will regulate all of man's activity in Antarctica, without prejudice to the other instruments currently in force.

The unanimous approval of this new item is explained by different reasons. Among them there is need to highlight the increasing diversity and complexity of man's activities in Antarctica, the multiplicity of actors in Antarctic endeavors and the alarm provoked by recent accidents or phenomenons, such as the ozone layer. In the light of all of this, it is necessary to apply the Antarctic Treaty System's invariable policy of anticipating possible events or damages that can occur in the frozen continent and adopt the appropriate measures. This policy, which has not changed in the thirty years of existence of the Antarctic Treaty, has resulted in the preservation of Antarctica as an ecological reserve, without affecting scientific research and the other legitimate uses in the region.

Antarctica was conceived by the Treaty Parties on the basis of a clear conservation approach.

This approach, which is implied in the Antarctic Treaty, was made explicit in Recommendation III-VIII, adopted in Brussels in 1964. The final preambular paragraph of that Recommendation states that the Consultative Parties "Hereby consider the Treaty Area as a Special Conservation Area".

The work done by the Consultative Parties on the subject has always been governed by this fundamental principle of the conservation and protection of Antarctica.

Something similar occurs with the Convention regulating Antarctic Mineral Resource Activities. On the basis of the protection of the ecosystems, Article 4 of that Convention establishes strict environmental protection principles, which have no equal in any other multilateral treaty. These principles operate on the basis that Antarctica is "closed" to

all activities of exploitation until the Consultative Parties declare it "open", area by area, by means of a formal consensus based on environmental criteria. This has been strengthened by the obligation to negotiate and adopt an additional Protocol on liability whose objective, in accordance with Article 8 of the Convention, is "to enhance the protection of the Antarctic environment and its dependent and associated ecosystems". This provision has no other goal than to strengthen the environmental protection of Antarctica.

Such is the case with regard to the Convention on Marine Living Resources, which is governed by an "ecosystem approach" as the fundamental criterion for activities governed by that instrument.

The Consultative Parties have maintained the moratorium (or voluntary restraint in the opinion of others) which is implied in the Antarctic Treaty and expressly agreed upon in paragraph 8 of Recommendation IX-I, approved during the IXth Consultative Meeting held in London in 1977 and thereafter renewed up to the present.

Accordingly, the Antarctic Treaty, the Agreed Measures, the Recommendations regarding man's impact, the Convention that have been adopted, or are in force, and the moratorium have given concrete expression to the principle that Antarctica has always been considered as an ecological reserve.

The aforementioned instruments configure a wide and profound framework of environmental protection that has no equal in the international community and has fulfilled its objectives in a very satisfactory way. The need of improving this framework, in the light of the increasing human activity in Antarctica, led to the timely proposal that a new item be destined to the protection of the ecosystems and thus enhance and consolidate Antarctica as an ecological reserve.

With this purpose in mind the Delegation of Chile, that participated in the Preparatory Meeting in Paris, circulated on that occasion a preliminary document which expressed that it was an ethical, juridical and political imperative for the Consultative Parties of the Antarctic Treaty System to perfect the existing provisions on environmental protection.

This would be obtained through the comprehensive treatment of the measures for the protection of the Antarctic ecosystems from the impact of human activities. This proposal, set forth by the delegation of Chile, was accepted with interest by the remaining Consultative Parties.

It also elicited the request that Chile prepare an additional document which would facilitate the substantive consideration of this item during the XVth Consultative Meeting. That is the objective of this Working Paper.

At the same Preparatory Meeting a "non-paper" which suggests a procedural approach and some terms of reference for the substantive consideration was circulated (1). We consider that the proposed operational approach is useful because it is conducive to the adoption at the Xvth Consultative Meeting of a Recommendation of a general character which would serve as a framework and mandate for a Special Consultative Meeting, which should take place in 1990, in principle, conclude with the adoption of a binding instrument containing the Comprehensive Measures.

The task before the Consultative Parties is difficult and may require of additional meetings besides the XVth Consultative Meeting to complete it. Thus we are in favor of the proposal to convene a Special Consultative Meeting.

Without prejudice to this, we are of the opinion that the substantive work on the Comprehensive Measures should not be put off to that instance.

On the contrary, the XVth Consultative Meeting should begin the process by considering a collection of principles and general rules applicable to all activities in Antarctica. Afterwards a comparison of existing measures and an evaluation of their mandatory nature should be carried out with the object, on the one hand, to compile them in an organic way and, on the other, to give them the necessary juridical precision in order to obtain their full compliance.

There may also be a need to detect the omissions that exist and repair them with references to human activities which are not covered by existing measures and thus stipulate which additional provisions are needed.

Likewise, attention should be given to possible measures with regard to activities foreseeable in the short and medium future so as to prepare provisions that have been approved and are in force when these activities eventually come about.

On the other hand, it is useful to anticipate the suitable procedural instruments, in this regard, the XVth Consultative Meeting should adopt a substantive Recommendation that includes the appropriate chapters and convene a Special Consultative Meeting to consider the Comprehensive Measures.

Bearing this in mind, this Working Paper develops the following chapters.

(I) PRINCIPLES

This task should necessarily begin by working out a wide conceptual framework applicable to the Comprehensive Measures.

(1) presented by the delegation of the United Kingdom

This conceptual framework should include principles and objectives, should be addressed generally to the protection of the environment and include a particular dimension related to Antarctica. The specific provisions should conform to these principles and objectives.

All human activity in Antarctica should be subordinated to a set of fundamental rules and juridical principles that specify and complement those already existing in the Antarctic Treaty System. The same approach should apply to any additional measures that are approved.

The conceptual framework ought to include traditional formulations that govern the Antarctic Treaty System.

These refer, among others to be considered, to the use of Antarctica exclusively for peaceful purposes and shall not become the scene or object of international discord. Also, the need of preserving for the benefit of present and future generations the Antarctic resources, defining these as its fauna, flora, air, water, ocean and earth, should be reiterated.

It is necessary to also repeat the need to maintain scientific research in Antarctica, increase cooperation to that objective and the disclosure of its results.

The area south of 60° South Latitude falls within the special responsibility of the Consultative Parties, as contained in the Antarctic Treaty and confirmed beginning with the IXth Consultative Meeting and each one after that. It also received international recognition in a specific way during the FAC Conference of 1975.

The general principles of environmental protection should include, inter-alia, those of the Antarctic Treaty, the Recommendations and adopted Conventions. The specific principle of the Comprehensive Measures applicable to Antarctica should begin by the elaboration of those contained in Recommendation XI-4 regarding the vulnerability of the Antarctic ecosystem and the need to preserve it from human interference and complemented by additional concepts. The latter should refer to the need of adopting informed decisions and a definition of what is considered to be unacceptable risk and regarding cumulative impact.

Also, principles of the following nature should be considered for inclusion:

- the responsibility for the protection of the Antarctic environment and its dependent and related ecosystems falls upon the Antarctic Treaty parties, particularly the Consultative Parties, assisted by SCAR and the Specialized Agencies, in accordance with the Antarctic Treaty;

- the protection of the Antarctic environment and its dependent and related ecosystems should be the fundamental criteria for deciding the activities in Antarctica.

To that end, any activity to be carried out should be subject to the following standards.

All activities, including scientific research, tourism, navigation and the installation of new stations, should be preceded by an evaluation of their environmental impact in order to avoid:

- a significant degradation of the atmospheric, earthly and marine environment of Antarctica and its dependent and related ecosystems in the face of which effective restoration is not possible within a reasonable period of time;

- a degradation, or significant risk, in areas of special biological, scientific, aesthetic or wilderness importance;

- negative effects on regional and global climatic patterns.

These standards should be enhanced by additional elements (Art. 4 of CRAMPA and others).

The principles should include the "ecosystem approach" as it is contained in Article 2 of the Convention for the Conservation of Antarctic Marine Living Resources, with the adoption that may be required.

Regarding the question of responsibility, enterprises and individuals are liable regarding the activities they are conducting in Antarctica. States are responsible for the observance of their international obligations related to the environmental protection and preservation of Antarctica. They will be responsible in accordance with international law.

There should also be an expression of the general objectives pursued by the Comprehensive Measures. The special responsibility of the Consultative Parties has already been mentioned. A second general objective should be to conform the Comprehensive Measures to all activities in Antarctica. There may be a need for additional objectives to be included.

II) EXAMINATION AND EVALUATION

A second chapter of the Comprehensive Measures should fall on the examination, evaluation and validity of the measures approved and in force. Recommendations, Codes of Conduct and Agreed Measures adopted for the protection of the Antarctic environment should be included in this evaluation.

This process should necessarily be conducted in such a way that not only individual provisions are examined but also establishing cross-references between Recommendations, Codes of Conduct and Agreed Measures so as to obtain an ample and coherent description of the current state of the Antarctic environmental protection. An additional objective of this evaluation would have to be the detection of specific areas where it is necessary to reduce the discreditionality of the State-Party in the observance of the measures.

One fundamental aspect of this process is the examination of the Environmental Impact Assessment of the activities. In this matter it seems appropriate to take as a basis Recommendation XIV-2, particularly the provisions regarding the Comprehensive Environmental Evaluation.

Here it should be established that if any activity that has environmental consequences which are not compatible with the principles and objectives of the Comprehensive Measures that activity should not be carried out.

The former may determine the need to establish criteria for what is to be considered a "significant" activity that has consequences for the environment. It is possible to conceive the usefulness of preparing some guidelines to determine the significant character of an activity, including the concept of harmful interference.

One result of an agreement regarding theses guidelines could be the need to create a data base of a scientific and technical nature which would be up to date, trustworthy and comparable, which could assist in the determination, on the one hand, of the significant character, and on the other, in the adoption of informed decisions.

To that end, it may be useful to elaborate a set of methods and mechanisms that complement the Comprehensive Measures and have as their task to monitor environmental variables and parameters. An "early warning system" on the possible environmental effects of activities could be established. The system of inspections, included in the Antarctic Treaty, could be extended to cover these aspects.

With regard to the Agreed Measures for the conservation of Antarctic fauna and flora, it may be convenient to evaluate its enforcement and validity and determine what amendments are needed and include them as an Annex to the Comprehensive Measures. In order to do this, there may be a need to request a report from SCAR on the current situation of specially protected species which could serve as a basis for the evaluation of the system of permits.

At the same time, it is convenient to study ways and means to increase the coordination between these Agreed Measures and other related legal documents.

It is essential to examine the validity of Recommendations IX-6 and X-7 of hydrocarbon pollution in Antarctic waters, which has not been done recently by the Consultative Parties. The United States has some proposals which could serve as a basis for this. There may be a need to define the Antarctic marine environment.

The examination and evaluation of the provisions in force must include those applicable to scientific drilling in order to reduce the harmful effects to the environment.

III) ADDITIONAL MEASURES

A third chapter is the consideration of additional measures that should be adopted, starting with the Stations, their concentration, functioning and the validity of the Code of Conduct.

With regard to the provisions of the Code of Conduct, SCAR has suggested amendments to waste disposal. Additional provisions, to be included in the Comprehensive Measures, should be considered to cover the modalities for transferring waste and garbage out of Antarctica. Another idea that has to be given some serious thought is to carry out clean-up operations of existing garbage dumps in Antarctica. It is also possible to consider the possibility to extend these clean-up operations to other activities in Antarctica.

The problems affecting the concentration of stations are not limited only to waste disposal. There are other such as the installation of antennas and electromagnetic interferences which endanger the safety of air traffic in the area. Also, the concentration of stations generate problems with regard to shipping traffic and imposes the need of maintaining large fuel deposits, increasing the potential risk of an ecological catastrophe.

Likewise, the excess of stations in one place has negative consequence with respect of scientific research and the other legitimate uses of Antarctica, risking the possibility of supersaturation of scientific research and considerably increasing the risk of permanent contamination in that area.

One approach to resolving this problem is contained in document ANT XIV WP/36 proposed by Chile, which has in its operative part a suggestion that SCAR offer some advice on:

- steps that possibly could be taken to improve coordination and cooperation in the location and use of stations and other scientific support facilities in the Antarctic, including guidelines by SCAR on areas in which research has not been conducted and which would be useful to know when considering the installation of new stations or other scientific facilities;

- the introduction of zoning schemes for delimiting specific sites and uses, allowing stations to expand in a manner consistent with the attainment of the collective goals for which they were installed and thereby contributing to improve their cooperation and mutual assistance;

- a code of conduct devised to resolve questions of waste disposal, electromagnetic disturbance, the use of driking water, aspects of land-use and related transport facilities, and to prevent multiple uses from developing into conflicts;

- the possibilities and opportunities for further coordination of scientific and/or logistic facilities within the framework of the Antarctic Treaty System.

Another aspect of the chapter Additional Measures must apply to tourism and non-governmental activities in Antarctica.

It is clearly necessary to regulate these activities, which are useful and important, by strengthening the provisions of the Code of Conduct applicable to the behavior of those that visit Antarctica.

In this sense, it would seem useful to address the regulations of these activities from the point of view of access including its modalities, insurance of a personal nature and also with regard to environmental damage and the responsibility of the enterprises.

There could also be a need to analyze the convenience of establishing some kind of sanctions applicable to enterprises responsible for environmental damages. This is without prejudice to responsibility that may fall upon the State, in accordance with international law.

Furthermore, consideration should be given to the establishment of areas of special tourist interest, in order to concentrate these activities in one place, where they would be conducted subject to strict preservation criteria. This would avoid the scattering of tourists and reduce, in general, polluting consequences of the activity.

Consideration should be given to the approval of a new code of conduct on the expansion of the existing one in order to include these and other specific provisions that may be needed.

There should be some reference to specially protected areas and areas of a special scientific interest. In this regard, it could be useful to elaborate a new concept in order that it not only serves to fulfil scientific objectives but also serves as an instrument of environmental protection.

That would require an analysis of the protected areas, their degrees and measures of protection and reexamine the decision making process for the establishment of protected areas and their levels of environmental protection.

With all this in mind, consideration could be given to the convenience for widening considerably the areas of special scientific interest, adjusting them to the new concept.

There may be a need to include in the comprehensive measures those applicable to the Antarctic ice, bearing in mind what is contained in the Final Act of the IV Special Consultative Meeting, in order to preserve its function in the ecosystems.

Likewise, particular attention should be given to the need to adopt specific measures with regard to widening considerably the areas of special scientific interest, adjusting them to the new concept.

It may be useful to include in the Comprehensive Measures a set of activities which are contrary to them and others which are prohibited, in order to strengthen the environmental protection and assist in the observance of the provisions.

IV) ADDITIONAL CONSIDERATIONS

The Comprehensive Measures should be formulated in a mandatory nature and the State-Parties should assume the obligation to fulfil them. In order to do this there may be a need to establish some monitoring schemes which should include an "early warning system" and follow-up procedures of the activities that are being conducted in Antarctica.

The State-Parties should report annually to the other Consultative Parties on the way they are fulfilling the Comprehensive Measures. This should be enhanced by a system of inspections applied to the observance of the Comprehensive Measures. Likewise, the obligation to circulate in a timely manner the Environmental Impact Assessment Reports should be established, particularly when they refer to activities that may have a considerable impact. To this end, there may be a need to revise the format and content of those reports. Every Consultative Meeting should have on the agenda the item "Comprehensive Measures", and should consider, among other matters, these reports.

Likewise, there is a need to foresee the compatibility of the Comprehensive Measures with the separate instruments of the Antarctic Treaty System but different from the Treaty itself, and agree on modalities to enhance this.

Chile is still of the opinion that the best way to instrument the proposed Comprehensive Measures is by the adoption of "Agreed Measures". This is an authoritative

Recommendation, solemn and mandatory, endowed with the necessary juridical precision.

This approach has the benefit of allowing the attainment of the objective of compulsoriness and precision with the maximum attachment to the Antarctic Treaty itself, permitting the outmost expedition and least possible delays.

V) OPERATIONAL ADJUSTMENTS

It may well be necessary to consider the approval of some operational adjustments in the Antarctic Treaty System to provide for the observance of the Comprehensive Measures.

These adjustments would be of a double nature.

Consideration should be given to the possibility of holding an annual Consultative Meeting, at least for the consideration of the Comprehensive Measures, as of the conclusion of the Special Consultative Meeting proposed to elaborate the Comprehensive Measures.

Furthermore, if there is agreement in the future regarding the possibility of an infrastructure of a limited nature, it should be endowed with the capabilities to co-operate in the environmental impact assessment.

In the meantime, and without prejudice to their respective autonomies, it may be useful to consider the role that could be played by SCAR, the Secretariat of the Antarctic Marine Living Resources, and the Managers of National Antarctic Programmes (MNAP'S), in cooperating with the monitoring of the ecosystems. Consideration should be given to the possibility of assisting the States in the observance of the Comprehensive Measures.

(v) **COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS: A WORKING PAPER SUBMITTED BY THE UNITED STATES (XV ATCM/WP/8)**

It is the United States view that the Parties to the Antarctic Treaty have a shared commitment to see that all human activities in Antarctica are conducted so as to avoid adverse impacts upon the Antarctic environment. Through the operation of the Antarctic Treaty system, a wide range of steps have been taken to secure protection of the environment. These include the provisions of the Antarctic Treaty itself, agreed recommendations setting forth guidelines, procedures and legally binding measures, and separate international agreements.

At the same time, it is clear that there is need for continual revision and extension of this network of environmental provisions as the ambit and scale of activities in Antarctica grows. During the last decade, for example, there has been significant expansion of human presence in Antarctica, as witnessed by increased numbers of scientists, support personnel and tourists, as well as growth in research bases and logistics activities and facilities. Taken together, these trends have intensified and will continue to intensify environmental stress in Antarctica, including challenges to its values as a wilderness area and scientific laboratory for studying processes of regional and global significance.

For these reasons, the United States supports concerted action to ensure achievement of comprehensive protection of the Antarctic environment and dependent and associated ecosystems. Meeting and sustaining this objective will require that the Parties to the Antarctic Treaty proceed on the basis of a clear and integrated program of work.

Elements: The starting point for such a program of work should be a delineation of the individual elements that need to be addressed in the aggregate of comprehensive measures. Taking into account the work already set forth in other working papers on this item, the United States delegation believes that these elements can be identified as follows:

Standards and Procedures:

a) protection of native mammals and native birds;

b) protection of native plants;

c) prevention of the introduction of alien species;

d) area protection

   i) Specially Protected Areas (SPAS);

ii) Sites of Special Scientific Interest (SSSIs);

iii) Historic Sites and Monuments;

iv) Antarctic Protected Areas (APAs);

v) other categories of protected area;

e) waste disposal;

f) storage and handling of fuel and hazardous materials;

g) marine pollution;

h) air pollution;

i) pollution response and contingency planning, including actions and procedures in emergency situations and provision for containment and clean up capability;

j) technical criteria and standards;

k) environmental impact assessment;

l) inspection, information exchange, reporting and other means to ensure compliance;

m) liability; and

n) monitoring (used in this paper to mean the collection of time series of scientific and environmental data).

Activities:

a) scientific research and associated logistic activities, including scientific drilling;

b) station construction and sitting;

c) tourism and non-governmental expeditions;

d) uses of Antarctic ice.

(It should be noted that this list rests on the assumption that the acceptability and specific control of possible resource activities in Antarctica will be carried out pursuant to the Convention for the Conservation of Antarctic Seals (CCAS), the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR); and the Convention on the Regulation of Antarctic Mineral Resource Activities (the Antarctic Minerals Convention.))

Appraisal Criteria: The U.S. delegation believes that the Parties to the Treaty should undertake a thorough appraisal of the existing network of environmental protection measures and

the degree to which they adequately and effectively address the elements (standards and procedures and activities) listed above in order to:

a) identify those provisions which would be updated, strengthened or otherwise improved;

b) identify and fill in the gaps in the existing network of environmental protection;

c) clarify and strengthen the nature of the legal obligations assumed by Treaty Parties in relation to environmental protection provisions;

d) ensure integration and consistency among the various categories of environmental protection provisions;

e) ensure the conduct of monitoring necessary to assess the effectiveness of the environmental protection provisions and to identify the need for strengthening and supplementing them; and

f) ensure establishment of an information and data base adequate to support the effective implementation and, where necessary, revision and extension of environmental protection provisions.

Milestones: The United States delegation further believes that, as a result of this appraisal, the Parties to the Treaty should establish concrete objectives for the immediate and longer term future. These include:

a) specific actions to be taken at the Fifteenth Antarctic Treaty Consultative Meeting (ATCM XV);

b) concrete proposals for structuring the future work to be undertaken by the Treaty Parties; and

c) subject areas upon which additional information is required as a basis for consideration of specific measures by the Treaty Parties.

Areas of Emphasis: The program of work relating to comprehensive measures outlined above results in three major areas of emphasis: first, ensuring that all activities in Antarctica are subject to effective standards and procedures for environmental protection; second, ensuring that clear and enforceable obligations are established; and third, elaborating mechanisms to ensure that standards and procedures are effectively implemented, consistently applied, and kept up to date.

Standards and Procedures: This first area of emphasis has been to date the primary object of attention by the Treaty Parties, though, as illustrated by the agenda of ATCM XV, there remains significant work to be done.

Specifically, the United States believes that there are steps to be taken at ATCM XV in this area which would make a major contribution to the elaboration of comprehensive measures for protection of the environment. These include:

a) adoption of an updated, strengthened and legally enforceable set of waste disposal practises as recommended by the scientific Committee on Antarctic Research (SCAR);

b) further development of the system of protected areas for Antarctica;

c) adoption of concrete measures to prevent marine pollution, including commitment to strict application of existing international marine pollution conventions in Antarctica, as well as steps to provide response capability to pollution incidents;

d) steps to improve navigational charts for Antarctica and to ensure widespread and ready availability of such charts; and

e) further work to develop collective criteria and procedures for the effective implementation of environmental impact assessment procedures, as a follow up to Recommendation XIV-2.

Clear and Enforceable Obligations: It is also the view of the United States delegation that this second area of emphasis merits priority attention in order to keep pace with the "standard and procedures" side. One of the most important contribution that could be made to achieving an effective and comprehensive network of environmental protection measures is to ensure that these measures (existing and future) are formulated so as to make clear to governments and all those involved in activities in Antarctica the legal requirements and obligations that they must observe in carrying out such activities. This could clarify for Parties newly active in Antarctica as well as for private expeditions and tourist groups subject to the jurisdiction of Antarctic Treaty Parties that they must comply with such requirements and obligations. In its approach to waste disposal, to marine pollution and to the protected area system, for example, the United States has sought not only to articulate effective standards but to cast them as clear and enforceable obligations. Such formulation could add significantly to the ability of the Treaty Parties to ensure effective and consistent compliance with environmental protection measures.

Mechanisms: This third area of emphasis also bears directly on the effectiveness of comprehensive measures. In the United States view, it is essential to ensure that the framework of such measures is dynamic - capable of evolving as necessary to achieve environmental protection objectives in light of new information and knowledge, as well as new activities and circumstances. The United States believes the

questions of environmental monitoring, data and information, and infrastructure require immediate attention if the Treaty Parties are to utilize the ATCM mechanism most effectively to achieve the objective of comprehensive measures.

Environmental Monitoring: The increasing intensity of human activities affecting Antarctica emphasizes the importance of monitoring programs to identify and keep under review impacts upon the environment. The issue of environmental monitoring is a key component in addressing comprehensive measures and is directly linked to the following items on the agenda of ATCM XV:

Item 8 - the Role of Antarctica in Understanding and Monitoring Global Change, including the Ozone Layer;

Item 9 (a) - Waste Disposal (the SCAR report on waste disposal calls for research and monitoring in this area);

Item 9 (b) - Marine Pollution;

Item 9 (c) - Implementation of Environmental Impact Procedures (Recommendation XIV-2 calls for monitoring of key indicators of the environmental effects of activities in Antarctica);

Item 10 - the Antarctic Protected Area System (Management plans for protected areas will call for monitoring to ensure that they achieve their designated purpose; more broadly, protected areas offer the opportunity for monitoring environmental change and the effects of human activities in Antarctica, including the establishment of baselines).

Item 11 - Promotion of International Scientific Cooperation;

Item 13 - Effects of Tourism and Non-Governmental Expeditions in the Antarctic Treaty Area.

As is obvious from these items, the conduct of monitoring is increasingly recognized as essential to securing protection of the Antarctic environment. Equally important, monitoring has emerged as a key part of programs of scientific research in Antarctica, which remains the most important human activity in the Treaty area.

For these reasons, the United States believes that ATCM XV offers the opportunity to initiate work toward comprehensive, integrated and cost-effective monitoring programs for Antarctica to serve both scientific and environmental protection purposes. Specifically, the United States delegation would suggest adoption of a recommendation on monitoring, including recognition of the principle that monitoring to obtain baseline information on the Antarctic environment and to detect the impacts of human activities is integral to the conduct of such activities.

Data and information: To achieve effective comprehensive measures, it will be necessary that there exist appropriate mechanisms to provide for compilation, review and utilization of relevant data and information, particularly to ensure that the results of monitoring and scientific research are effectively applied in assessing, and where necessary revising and extending, environmental standards and procedures applied to human activities. Item 12 (a) of the agenda of ATCM XV - Improving the Comparability and Accessibility of Scientific Data in Antarctica - specifically addresses this point and the United States supports further work at ATCM XV to identify, develop and integrate a scientific and environmental data base for Antarctica.

Infrastructure to Provide an Integrated Data Base: From the broader perspective, the issue of data and information directly relates to the question of infrastructure for the Antarctic Treaty consultative mechanism and to the frequency of ATCMs. In the United States view, the Treaty Parties, at ATCM XV, should initiate action to address both the scientific and environmental data base and the requirements for the support of the Antarctic Treaty consultative mechanism (see the U.S. paper on this subject). Such action is necessary to ensure that they are in a position to effectively manage activities which increasingly require attention on a real time basis. Therefore two important aspects in attaining the objective of comprehensive environmental protection measures are:

- a practical and expeditious process within the consultative mechanism to allow measures to be updated in light of new stresses upon the Antarctic environment, as well as in light of new information on adverse impacts or on technologies and procedures that could avoid or mitigate such impacts; and

- effective communication with relevant international organizations to take advantage of the possibility of reinforcing the application of ATCM measures through broader fora (as has been suggested in the U.S. paper on marine pollution) and to ensure that ATCM measures are no less strict than relevant environmental protection standards adopted pursuant to more broadly applicable agreements (e.g., those on marine pollution, atmospheric pollution and hazardous waste).

In relation to the first point, the more complete integrated data base serving the Antarctic Treaty, the more readily will the Parties be able to discern and anticipate possible environmental problems and identify low-impact, cost effective technologies and procedures for operating in Antarctica. This capability would make an essential contribution to efforts to revise and elaborate ATCM measures to avoid adverse environmental impacts in the future.

(vi) **COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS: PROPOSED OUTLINE OF A DRAFT RECOMMENDATION BY THE SWEDISH DELEGATION (XV ATCM/WP/14)**

The Swedish delegation has studied with great interest the proposals presented by Chile, France, Australia, New Zealand and the United States on different aspects of comprehensive measures for protection of the Antarctic environment, including the objectives, contents and conceptual framework of these measures.

The common characteristics of all proposals is the need to enhance the protection of the Antarctic environment in the framework of the Antarctic Treaty System.

On the basis of these proposals, an attempt has been made at defining their common ground and possible elements of a Recommendation for further work.

The draft Recommendation calls for a Consultative Meeting to be held in 1990 in order to elaborate further new comprehensive measures for the protection of the Antarctic environment. However, in order to achieve early and constructive results, we believe that some kind of preparatory meeting should be held so as to facilitate the work of the Consultative Meeting.

Outline for a draft Recommendation

The preambular paragraph should state the need for further protection of the Antarctic environment.

It should recognize the basic features of the Antarctic Treaty and the Antarctic Treaty System as a whole. In particular it should recognize the existing principles of environmental protection already imbedded in the Antarctic Treaty as well as in the Recommendations and the adopted Conventions within the framework of the Antarctic Treaty System.

It should stress the fundamental importance of scientific research.

It should state the need for elaborating comprehensive measures for the protection of the Antarctic environment and emphasize the need to preserve Antarctica as a special conservation area.

It should recommend to the governments that a Consultative Meeting should be called in 1990 with the purpose of defining

the framework and contents of such a regime as well as the necessary steps to be taken in order to achieve this.

It might be useful to call for a "preparatory meeting" or a meeting of a special working group in order to prepare and facilitate such a Consultative Meeting.

It is proposed that following the preambular paragraphs, the substantive paragraphs should be structured primarily around four elements:

1. The need to define more exactly the environmental concerns relating to activities in Antarctica, incl. the pollutants at issue;

Examples:

The general vulnerability of the Antarctic eco-system.

The influence of Antarctica on the development of the climate of the world, and hence its link with global environment developments, further enhances this concern.

Special efforts should be made to define pollutants in the atmosphere and the terrester and marine systems respectively.

Examples of pollutants that have been mentioned in the working papers are hydrocarbons and other hazardous materials.

2. The need to define human activities involved that cause environmental concern:

Examples:

Threats to the environment are caused mainly by human activities in the area. The human impact should be defined and estimated (in quantitative terms).

The organization of station facilities and the management of stations are of basic importance to the human impact in Antarctica. The increasing number of visitors is an additional factor of growing influence.

In all cases of human activities, transports, communications and waste management are elements of special risk.

3. The need to develop further the basic standards for all forms of human activities in the Treaty Area.

Examples:

The basic standards for all forms of human activity in the Treaty Area should be elaborated.

The general principles should recall the basic objectives and components of the Antarctic Treaty System.

More specific environmental measures are needed.

All activities in Antarctica should be submitted to effective environmental standards.

The needs to protect species of native Antarctic fauna and flora should be defined.

4. Proposals for action to be considered in the short-and long-term perspective.

Examples:

Gaps in the present environment protection provisions should be identified and obligations clarified

A scientific data base should be created, to support the monitoring of environment variables.

An early warning system should be set up, as a development of the monitoring system.

The environmental impact assessment instrument should be further developed to cover all activities in Antarctica.

All human activities should be subject to an environmental Code of Conduct.

Steps should be taken to ensure a more effective use of the inspection system.

The network of protected areas should be reviewed.

The possibilities for the establishment of an infrastructure for the Antarctic Treaty might also be considered.

The protection of the marine environment should be strengthened.

The questions of compliance and liability regarding measures taken and future measures must be addressed.

ANNEX D

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS

DRAFT PRINCIPLES PUT FORWARD BY THE CHAIRMAN OF WORKING GROUP I

COMPREHENSIVE MEASURES FOR THE PROTECTION OF THE ANTARCTIC ENVIRONMENT AND DEPENDENT AND ASSOCIATED ECOSYSTEMS:

DRAFT PRINCIPLES PUT FORWARD BY THE CHAIRMAN OF WORKING GROUP I:

1. The protection of the Antarctic environment and dependent and associated ecosystems must be a fundamental consideration in the planning and performance af all human activities in the Antarctic Treaty area.

2. Human activities in Antarctica must avoid and minimise adverse impacts on the Antarctic environment and dependent and associated ecosystems.

3. Activities in Antarctica must avoid:

(a) significant adverse effects on global or regional climate or weather patterns;

(b) significant adverse effects on air and water quality;

(c) significant changes in atmospheric, terrestrial or marine environments;

(d) significant changes in the distribution, abundance or productivity of populations of species of fauna or flora;

(e) further jeopardy to endangered or threatened species or population of such species;

(f) degradation of, or substancial risk to, areas of special biological, scientific, historic, aesthetic or wilderness significance.

4. Activities in Antarctica must be based on sufficient information to enable informed judgements to be made about their possible impacts on the Antarctic environment and dependent and associated ecosystems.

5. Such judgements must take full account of:

(a) the cumulative impacts of activities both by themselves and in combination with other such activities and other uses of Antarctica;

(b) whether any activity in Antarctica will detrimentally affect any other activity;

(c) whether technology and procedures are available to provide for safe operations;

(d) whether there exists the capacity to monitor key environmental parameters and ecosystem components so as to identify any adverse effects of such activity and to provide for the modification of operating procedures as may be necessary in the light of the results of monitoring or increased knowledge of the Antarctic environment or dependent or associated ecosystems; and

(e) whether there exists the capacity to respond effectively to accidents, particularly those with potential environmental effects.

6. Continuous and effective monitoring should take place to verify the predicted effects and to detect the possible unforeseen effects of activities on the Antarctic environment and its dependent and associated ecosystems.

7. Encouragement should be given to scientific research, including cooperative research directed to acquiring a greater understanding of the Antarctic environment and dependent and associated ecosystems.

ANNEX E

ACTIVITIES OF THE WORLD METEOROLOGICAL ORGANIZATION IN THE FIELD OF ANTARCTIC METEOROLOGY AND TELECOMMUNICATIONS

ACTIVITIES OF THE WORLD METEOROLOGICAL ORGANIZATION IN THE FIELD OF ANTARCTIC METEOROLOGY AND TELECOMMUNICATIONS

Meteorological Observations / Telecommunications

1. At ATCM XIV data were presented to the meeting and incorporated in the published report showing the then current details of the meterological observation network in Antarctica and the related telecommunications arrangements. This information had been previously prepared by the 4th Session of the WMO Executive Council Working Group on Antarctic Meteorology (E.C.WGAM) at its meeting in Geneva in September 1986.

2. Traditionally, ATCMs have been concerned not only with recording factual data of this type but also with considering the important matter of the efficiency and rapidity with which meteorological information becomes available at meteorological analysis centres outside the Antarctic region (where it is used in global analysis) and also at stations within Antarctica which require the data for analysis or operational purposes. In recent years WMO has conducted monitoring tests of the operation of the Antarctic segment of the Golbal Telecommunications Systems (GTS) to check on the ability of the observation/communications system to deliver data where and when they are needed. Such tests were conducted for two week periods in December 1987 and again in December 1988.

3. The information collected in these tests indicate a wide variation in the performance of the system dependent on time of observation, location of stations and analysis centres, period of monitoring etc., and it is not appropriate to provide a detailed discussion of this information in this paper. However, as a single example, the following list shows the availability (percentage) of SYNOP reports for 00UTC from the Antarctic network which were recorded at the indicated centres within one hour of observation time during the monitoring period 30 November - 13 December 1987.

Beijing	66	Montevideo	28	Washington	79
Bracknell (UK)	69	Moscow	51	Wellington	70
Brasilia	23	New Delhi	26		
Melbourne	79	Offenbach (FRG)	59		
Molodezhnaya	79	Prague	53		
Santiago	0	Tokyo	76		

4. The more detailed tables for the monitoring periods indicate that the availability of Antarctic data at some centres was more than 75% of the excepted data according to the data type and hour of observation.

However, the results also reveal major discrepancies in the availability of data which are due to complex factors in

the operation of the Communication systems themselves and the preparation of data to be transmitted. Following both periods of test the results were provided to the Permanent Representatives of Members of WMO which conduct Antarctic programs with the request that an examination be made of the system and practices employed nationally to try to improve the global operation.

5. The increased use of satellite communications for both manually performed observations and those from Automatic Weather Stations (AWS) as well as the introduction of computer based message switching and retransmission has the potential to improve the speed and accuracy of data transfer. However, on the other hand particular procedural matters need to be introduced and carefully maintained to ensure that the full value of such systems is obtained. Recognizing the wide variation in possible problem areas and the complexity of the interactions W.M.O. has arranged a special meeting of experts in Antarctic telecommunications to be held in Geneva in late December 1989 "which will review the operation of the exchange of observational data and processed information concerning the Antarctic and the telecommunications arrangements and make recommendations on the improvements of such arrangements and any remedial measures towards the improvement of such transmissions".

6. It is expected that the report of this group will be available in early 1990 and that it will provide valuable guidance to the operators of Antarctic programs. Such information is of particular importance having regard to the increasing interest expressed at ATCM XV in the Provision of meteorological services to aviation and marine operations which are totally dependent on the quality and responsiveness of the observation/communications system.

Antarctic Meteorological Services

7. Among the other matters to be discussed at the 5th session of EC.WGAM in September 1990 will be the further advancement of the WMO Second Long Term Plan for the World Weather Watch which envisages inter alia the co-operative provision of meteorologial services within Antarctica to be agreed between the Members of WMO having Antarctic programmes through the W.M.O. Executive Council and with agreement of an ATCM. These discussions will have the benefit of the report of ATCM XV relating to the items of Air Safety and Marine Meteorological services for the Treaty region. WMO is aware of Recommendation XIV - 7 in respect of this.

Recommendations

8. It is therefore suggested that ATCM XV:

* note the continuing efforts of WMO to improve the availability of Antarctic meteorological data via improved communication systems and practices;

* invite WMO to provide through its national Permanent Representatives the report of the special meeting of experts on Antarctic Telecommunications (to be held in December 1989) to the appropriate operators of national Antarctic programmes;

* note the WMO intention to proceed with its Long Term Plan for Antarctic meteorological services in the light of relevant decisions of ATCM XV concerning Air Safety and Marine Meteorological Services and related meetings which have been held with SCAR and IOC;

* invite WMO to provide further information on these matters following the 5th session of EC-WGAM to ATCM-XVI.

ANNEX F

MESSAGE FROM THE FIFTEENTH CONSULTATIVE MEETING TO STATIONS IN ANTARCTICA

MESSAGE FROM THE FIFTEENTH CONSULTATIVE MEETING TO STATIONS IN ANTARCTICA

Representatives of the Parties to the Antarctic Treaty have just completed two weeks of discussions at the Fifteenth Consultative Meeting, held in Paris and hosted by the Government of France.

Three new Consultative Parties, Finland, Peru and the Republic of Korea, were acknowledged at the Ninth Special Consultative Meeting held in Paris before the opening of the Fifteenth Consultative Meeting.

A full agenda of consultations has included matters of practical application to the work you are engaged in, such as waste disposal, air safety, charting of Antarctic waters and marine pollution.

There have been other items on the agenda of the meeting concerning the part you are playing in the study of phenomena of global significance, as well as further steps that could be taken within the Antarctic Treaty System to enhance the protection of the Antarctic environment within which you live and work.

Throughout their deliberations, the Representatives have been mindful that the successful operation of the Antarctic Treaty depends in large part on the conservation of the tradition of peaceful scientific cooperation that has been the hallmark of the Antarctic Treaty System.

As the Antarctic winter draws to a close, all delegations participating in the Fifteenth Consultative Meeting extend their warmest congratulations to you who, under the most arduous circumstances, are contributing to advancing scientific objectives in Antarctica, and they extend their best wishes for a successful summer to all those preparing to go south.

ANNEX G

NATIONAL CONTACT POINTS

NATIONAL CONTACT POINTS

(For purposes described in Recommendation XIII-1)

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   South America Department,
   Foreign and Commonwealth Office,
   London, SW1A 2AH, UK.

2. For purposes set out in paragraph 5 (a) and (b) insofar as they relate to British scientific reasearch in the Antarctic:

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   High Cross,
   Madingley Road
   Cambridge CB3 OET, UK.

3. For purposes set out in paragraph 5 (b) excepting those related to British scientific research in the Antarctic:

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ANNEX H

LIST AND COMPOSITION OF THE DELEGATIONS
TO THE XVth ANTARCTIC TREATY CONSULTATIVE MEETING

LIST AND COMPOSITION OF THE DELEGATIONS TO THE XVth ANTARCTIC TREATY CONSULTATIVE MEETING

(Paris, 9 - 20 October 1989)

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Captain Antonio José TEIXEIRA
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III. OBSERVERS

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Dr N. BONNER
Chairman of Specialist Group
"Environmental Affairs and Conservation"

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

Mr Henrique R. VALLE

IV. EXPERTS

*** Meeting of Experts on Air Safety in Antarctica held in Paris (2-5 May 1989)**

Mr Claude LABBE
Head of the French Delegation to the Meeting

*** International Hydrographical Bureau (IHB)**

Representative — Rear-Admiral Alfredo CIVETTA
Director, IHB

Mr A.J. KEER
Member of IHB management Committee

*** Intergovernmental Oceanographic Commission (IOC)**

Representative — Mr TOLKACHEV
Mr TREGLOS
Mr BERMAN
Mr GODIN

*** International Civil Aviation Organisation (ICAO)**

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Mr VANIER
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* **International Maritime Organisation (IMO)**

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Bureau of the London Convention on Immersion

* **World Meteorological Organisation (WMO)**

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WMO Working Group on Antarctic Meteorology

* **International Union for Conservation of Nature and Natural resources (IUCN)**

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Director General

Alternate Representative — Dr Danny ELDER
Coordinator IUCN Programme for coastal and marine Conservation

Dr Wolfgang BURHENNE
Chairman, Commission for Environmental Policy, Law and Administration

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