

ANTARCTIC TREATY

Final Report of the
Sixteenth Antarctic Treaty
Consultative Meeting

Bonn

7 - 18 October 1991

TABLE OF CONTENTS

	Page	
PART I	FINAL REPORT	3
PART II	RECOMMENDATIONS adopted at the XVIth Antarctic Treaty Consultative Meeting (ATCM)	41
PART III	DECLARATION BY CONTRACTING PARTIES in the 30th anniversary year of the entry into force of the Antarctic Treaty	133
PART IV	ANNEXES	143
A -	Opening addresses	144
B -	Reports on the operation of the Antarctic Treaty system:	209
(i)	Statement by the CCAMLR observer at the XVIth ATCM (Commission for the Conservation of Antarctic Marine Living Resources, CCAMLR)	210
(ii)	Report submitted to the XVIth ATCM by the Depositary Government of the Convention for the Conservation of Antarctic Seals (CCAS), United Kingdom	223
(iii)	Report from the Scientific Committee on Antarctic Research (SCAR) to the XVIth ATCM	230
(iv)	Status of Antarctic Treaty Recommendations (submitted by the United States of America)	247
(v)	Report submitted by the chairman of the Xth Antarctic Treaty Special Consultative Meeting (ATSCM)	252
(vi)	Report submitted by the chairman of the XIth ATSCM (Viña del Mar - Session)	253
(vii)	Report submitted by the chairman of the XIth ATSCM (Madrid - Sessions)	254
(viii)	Report to the XVIth ATCM on the Meeting held pursuant to Recommendation XV-2	256
(ix)	Report of the Council of Managers of National Antarctic Programs (COMNAP) to the XVIth ATCM	257

C -	Reports received from international organisations relating to the implementation of Article III (2) of the Antarctic Treaty	301
	(i) World Meteorological Organisation (WMO)	302
	(ii) Antarctic and Southern Ocean Coalition (ASOC)	303
D -	Draft Lists of Recommendations (paragraph 49 of the Final Report, Part I)	305
E -	List of Inspections carried out since the XVth ATCM (paragraph 57 of the Final Report, Part I)	317
F -	Antarctic Protected Area System	321
	(i) Revised map of Site of Special Scientific Interest SSSI No. 17, Clark Peninsula, Budd Coast, Wilkes Land (paragraph 76 of the Final Report, Part I)	322
	(ii) Management Plan for proposed Specially Reserved Area SRA North Side of Dufek Massif (paragraph 83 of the Final Report, Part I)	323
	(iii) Management Plan for proposed Multiple-use Planning Area MPA Southwest Anvers Island and vicinity (paragraph 83 of the Final Report, Part I)	327
G -	Preliminary agenda of the XVIIth Antarctic Treaty Consultative Meeting	341
H -	Text of message to Antarctic stations	345
I -	National contact points	349
J -	List of participants	361

PART I

**FINAL REPORT OF THE
XVIth ANTARCTIC TREATY CONSULTATIVE MEETING**

Final Report of the XVIth Antarctic Treaty Consultative Meeting

(1) Pursuant to Article IX of the Antarctic Treaty, representatives of the Consultative Parties (Argentina, Australia, Belgium, Brazil, Chile, China, Ecuador, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, the Netherlands, New Zealand, Norway, Peru, Poland, 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 Bonn from 07 to 18 October 1991, 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 the following Contracting Parties to the Antarctic Treaty which are not Consultative Parties (Austria, Bulgaria, Canada, Colombia, Czechoslovakia, Denmark, Greece, Hungary, the Democratic People's Republic of Korea, Papua New Guinea, Romania and Switzerland).

(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 13 and 15 below).

(4) At the Preparatory Meeting held in Bonn in April 1991, the Consultative Parties had invited the Chairman of the Council of Managers of National Antarctic Programs (COMNAP) to present a report on the activities of COMNAP under agenda item 5 (a) of the provisional agenda of the XVIth ATCM (see paragraph 21 below).

(5) At the same Preparatory Meeting the Consultative Parties, pursuant to Rule 35 of the revised Rules of Procedure of 1987, had invited several international organisations to appoint experts to assist in discussion of specific agenda items. The following organisations (listed in alphabetical order) took part in the proceedings:

- Antarctic and Southern Ocean Coalition, (ASOC)
(agenda items 6, 9, 10, 11 and 14)
- Intergovernmental Oceanographic Commission, (IOC)
(agenda items 10 b and 16)
- International Civil Aviation Organisation, (ICAO)
(agenda item 18)

- International Hydrographic Organisation, (IHO)
(agenda item 17)
- International Maritime Organisation, (IMO)
(agenda items 9, 10 a, 10 b and 16)
- International Union for the Conservation of Nature and Natural Resources, (IUCN - World Conservation Union)
(agenda items 6, 9, 10, 11 and 14)
- United Nations Environmental Program, (UNEP)
(agenda items 10 and 12 a)
- World Meteorological Organisation, (WMO)
(agenda items 12 a, 15 and 16)
- World Tourism Organisation, (WTO)
(agenda item 14)

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

(6) The Meeting was formally opened by Mr Helmut Schäfer, Minister of State at the Federal Foreign Office of Germany. The opening address is reproduced at Annex A.

(7) Ambassador Dietrich Granow, Head of the German Delegation, was elected Chairman of the Meeting. After thanking the delegations for having elected him Chairman, Mr Granow welcomed the States acknowledged as Consultative Parties at the Xth Antarctic Treaty Special Consultative Meeting (the Netherlands and Ecuador). He also welcomed Switzerland and Guatemala, which had acceded to the Antarctic Treaty since the last Meeting.

(8) The Chairman proposed that Mr Hans-Christian R. Freiherr von Reibnitz and Mr Jürgen T. Borsch of the German Federal Foreign Office, be appointed Executive Secretary and Deputy Executive Secretary of the Meeting respectively. This proposal was adopted.

(9) In order to save time, it has been agreed at the Preparatory Meeting that delegations would not deliver opening addresses but, instead, provide their text for circulation and inclusion in the Final Report. The texts of the opening addresses are reproduced at Annex A.

(10) 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
 - a) under Recommendation XIII-2:
 - i) the Chairman of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
 - ii) 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)
 - iii) the President of the Scientific Committee on Antarctic Research (SCAR)
 - iv) the Head of the Delegation of the United States of America in his capacity as representative of the Depositary Government of the Antarctic Treaty
 - v) the Chairman of the Xth Antarctic Treaty Special Consultative Meeting
 - vi) the Chairman of the XIth Antarctic Treaty Special Consultative Meeting
 - vii) the Chairman of the Meeting relating to Article 8 (7) of the Convention on the Regulation of Antarctic Mineral Resource Activities
 - viii) the Convenor of the informal group of Treaty Parties in the United Nations
 - ix) the Council of Managers of National Antarctic Programs (COMNAP)
 - b) in relation to Article III (2) of the Antarctic Treaty
6. Report of the Chairman of the XIth Antarctic Treaty Special Consultative Meeting
7. Operation of the Antarctic Treaty system:
 - a) Organisational aspects
 - b) Public availability of documents

- c) Examination of recommendations
- d) Exchange of information
- 8. Inspections under the Antarctic Treaty
- 9. Environmental monitoring
- 10. Human impact on the Antarctic environment
 - a) Waste disposal
 - b) Marine pollution
 - c) Implementation of environmental impact assessment procedures
- 11. The Antarctic Protected Area system
 - a) Proposals for new Sites of Special Scientific Interest (SSSI)
 - b) Proposals for new Marine Sites of Special Scientific Interest
 - c) Changes to existing SSSIs and Specially Protected Areas (SPA)
 - d) Proposals for new SPAs
 - e) Proposals for Specially Reserved Areas (SRA)
 - f) Proposals for Multiple-use Planning Areas (MPA)
 - g) Review of the system
 - h) Historic sites and monuments
- 12. Promotion of international scientific co-operation
 - a) The role of Antarctic science in understanding the global environment, including depletion of the ozone layer
 - b) Antarctic Science Conference, Bremen 1991
- 13. International Antarctic scientific and logistic co-operation
 - a) Measures for scientific and logistic co-operation in Antarctica
 - b) Comparability and accessibility of Antarctic scientific data
 - c) Siting of Antarctic stations

14. Tourism and non-governmental expeditions in the Antarctic Treaty Area
15. Antarctic meteorology and telecommunications
16. Marine hydrometeorological services to navigation in the Southern Ocean
17. Co-operation in hydrographic surveying and charting of Antarctic waters
18. Air safety in Antarctica
19. Frequency of future Consultative Meetings and date and place of the XVIIth Consultative Meeting
20. Commemoration of the 30th anniversary of the entry into force of the Antarctic Treaty
21. Any other business
22. Adoption of the Final Report
23. Closing of the Meeting

(11) In accordance with the Chairman's suggestion

(a) discussion of items 1 to 6, 19 (as to the date and place of the XVIIth Consultative Meeting), and 20 to 23 took place in plenary session;

(b) the remaining items were remitted to two Working Groups:

(i) Working Group I, under the chairmanship of Mr Hugh Wyndham of Australia, discussed items 7, 8, 12, 13, 14 and 19 (as to the frequency of future Consultative Meetings).

(ii) Working Group II, under the chairmanship of Dr Roberto Puceiro Ripoll of Uruguay, discussed items 9 to 11 and 15 to 18.

Item 5 a

Operation of the Antarctic Treaty System: Reports

(12) 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 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)
- c) the President of the Scientific Committee on Antarctic Research (SCAR)
- 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 Xth Antarctic Treaty Special Consultative Meeting
- f) the Chairman of the XIth Antarctic Treaty Special Consultative Meeting
- g) the Chairman of the Meeting relating to Article 8 (7) of the Convention on the Regulation of Antarctic Mineral Resource Activities
- h) the Permanent Representative of Germany to the United Nations in New York in his capacity as Convenor of the informal group of Treaty Parties

(13) The report of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was presented, by its Chairman, Ambassador Jorge Berguño (Annex B (i)).

(14) The Head of the Delegation of the United Kingdom, Dr John A. Heap, in his capacity as representative of the Depositary Government of the Convention for the Conservation of Antarctic Seals (CCAS), presented a report (Annex B (ii)).

(15) The report of the Scientific Committee for Antarctic Research (SCAR) was presented, on behalf of its President, by Mr W. Nigel Bonner (Annex B (iii)).

(16) The Head of the Delegation of the United States, Mr R. Tucker Scully, in his capacity as representative of the Depositary Government of the Antarctic Treaty, presented a report. He welcomed Switzerland and Guatemala, the states having acceded to the Treaty since the XVth ATCM. The table covering the status of the Recommendations adopted in compliance with Article IX of the Treaty is at Annex B (iv).

(17) The Chairman of the Xth Antarctic Treaty Special Consultative Meeting (ATSCM), Mr Dietrich Granow of Germany, presented a report on that Meeting. He welcomed the Netherlands and Ecuador as Consultative Parties to the XVIth ATCM. The report is at Annex B (v).

(18) The Chairman of the first session of the XIth ATSCM, Ambassador Oscar Pinochet de la Barra of Chile, and the Chairman of the second to fourth sessions of the XIth ATSCM, Mr Carlos Blasco Villa of Spain presented reports to the Meeting. The

report of the first session is at Annex B (vi), the report of the second to fourth sessions is at Annex B (vii).

(19) The report of the Chairman of the Meeting relating to Article 8 (7) of the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), Prof. Francisco Orrego Vicuña, was submitted to the Meeting in written form and is reproduced at Annex B (viii).

(20) The Deputy Permanent Representative of Germany to the United Nations, Ambassador Dr Hans-Joachim Vergau, in his capacity as Convenor of the informal group of Treaty Parties in New York, presented an oral report on the Antarctic item in the United Nations which was received with much interest.

(21) The representative of the Council of Managers of National Antarctic Programs (COMNAP), Dr David J. Drewry, submitted a report to the Meeting under item 5 (a) on the invitation of Consultative Parties extended to COMNAP during the Preparatory Meeting. The report is at Annex B (ix).

(22) The Meeting recognised the valuable contribution of SCAR and encouraged it to continue working to identify, promote and co-ordinate research aimed at improving the understanding of Antarctica and its role in global processes. In this it should continue its liaison as appropriate with the International Council of Scientific Unions (ICSU) and other international organisations. The Meeting also recognised the importance of SCAR in providing objective scientific information and advice to the Parties.

(23) The Meeting also recognised the important role of COMNAP in examining and solving practical problems relating to the implementation of scientific activities and their associated logistics.

(24) The Meeting noted the importance of co-operation between SCAR and COMNAP in complementary fields of Antarctic activities. It encouraged SCAR and COMNAP to further their efforts in this regard. This co-operation will be essential for the effective pursuit of international scientific programmes of global importance as well as the implementation of relevant Recommendations adopted by the ATCMs and of the Protocol on Environmental Protection to the Antarctic Treaty.

It was agreed that COMNAP should be invited in future to participate on the same basis as SCAR under Recommendation XIII-2.

Item 5 b

Reports in relation to Article III (2) of the Antarctic Treaty

(25) The representative of the World Meteorological Organisation, Dr N. A. Streten, presented a report to the Meeting on the activities of WMO in relation to Antarctica since the XVth ATCM. The report is at Annex C (i).

(26) The representative of the International Maritime Organisation, Dr Bin Okamura, presented an oral report to the Meeting on the activities of IMO in relation to Antarctica since the XVth ATCM.

(27) The representative of the International Hydrographic Organisation, Dr Adam J. Kerr, presented an oral report to the Meeting on the activities of IHO in relation to Antarctica since the XVth ATCM.

(28) The representative of the Antarctic and Southern Ocean Coalition (ASOC), Mr James Barnes, presented a report to the Meeting which is at Annex C (ii).

Item 6

Report of the Chairman of the XIth Antarctic Treaty Special Consultative Meeting

(29) The Meeting discussed under item 6 the question of future action with regard to the Protocol on Environmental Protection to the Antarctic Treaty. In this regard, the Meeting stressed the absolute priority of the earliest possible ratification and entry into force of the Protocol.

(30) The Meeting further agreed that, in the meantime, as far as possible and in accordance with their legal system, the provisions of the Protocol should be applied, as appropriate, by all Parties to the Treaty and that any Environmental Impact Assessment submitted to the next Consultative Meeting would be considered by that meeting.

(31) It was further agreed that the traditional practice of handling together items of the agenda relevant to the environment should continue to be followed, in order to begin laying the groundwork for the Committee for Environmental Protection, when the Protocol comes into force. In this context, it was further agreed that, without prejudice to Article 11 (6) of the Protocol, the next Consultative Meeting should begin the preparation of draft Rules of Procedure for the Committee for Environmental Protection.

(32) Proposals were made for new Annexes on Protected Areas and on Tourism. These were discussed under items 11 and 14, reported below.

(33) The Meeting also discussed the need for early consideration of an Annex on Liability, as well as of the establishment of an enquiry procedure relating to Article 3 of the Protocol, as agreed in Madrid and recorded in the Final Act of the XIth ATSCM. The Meeting considered that the XVIIth ATCM should decide when and how these matters should be addressed.

Item 7a

Operation of the Antarctic Treaty System

Organisational aspects

Secretariat

(34) The Meeting discussed working paper XVI ATCM/WP 8 submitted by the United States of America and working paper XVI ATCM/WP 10 submitted by Japan on the establishment of an Antarctic Treaty Secretariat. The delegation of Uruguay submitted an information paper (XVI ATCM/INFO 36) on the same subject.

(35) There was widespread support for the establishment of a small, modern, cost-effective Secretariat, responsible to and under the authority of the Consultative Meetings, to support the operation of the Antarctic Treaty Consultative mechanism. Most delegations felt its creation was urgent. These delegations stated that the need for a Secretariat was based, in particular, on three considerations: support for the increasingly numerous and complex operations of the Antarctic Treaty Consultative mechanism; circulation of information; and facilitation of the implementation of the Protocol on Environmental Protection to the Antarctic Treaty.

(36) Several delegations spoke in favour of an interim decision, if a final decision on all aspects could not be taken at this meeting. Other delegations stated that all aspects were of the same importance and could not be dealt with separately.

(37) As to the costs of the Secretariat, those who spoke in its favour agreed that the costs should be kept to a minimum. Some of these delegations favoured a division

weighted on some basis; others favoured an equal division of costs. Some delegations argued that all or part of the costs of holding Consultative Meetings should be included.

(38) The question of location was mentioned by several delegations. Some delegations were of the view that this question could remain open for the time being. Others stated that no aspect should be isolated.

(39) Nonetheless, there was no consensus on the immediate establishment of a Secretariat, with reservations by some delegations, one of them from a Non-Consultative Party, which stated that they did not believe the study and consideration of this subject had proceeded to the point where a concrete decision could be taken. These delegations emphasised, as key for the continued effectiveness and credibility of the Antarctic Treaty system, the preservation of its working structure which includes a network of direct diplomatic contacts that precede and determine the contents of formal decisions. In this context, one delegation referred to working paper XVI ATCM/PREP/WP 7. Another supported, in principle, the possibility of creating an administrative support unit to assist the Environmental Committee.

(40) The Meeting agreed that this question should be further considered at the next Consultative Meeting.

Handbook of the Antarctic Treaty System

(41) The Meeting expressed its appreciation of the outstanding work done by Dr John Heap (UK) in editing and updating the "Handbook of the Antarctic Treaty System". The Meeting also thanked the Depositary Government for its offer to explore means of continuing to update the publication.

(42) A version in Spanish was introduced informally by Chile and the Meeting was reminded of the convenience of co-ordinating versions of the "Handbook" in the different official languages.

(43) A proposal was made to set up a working group to consider the question of the drafting and eventual publication of an official Handbook of the Antarctic Treaty in the four official languages. It was agreed that this matter will be considered in direct consultations between the Parties through diplomatic channels.

Item 7 b

Public Availability of Documents

(44) According to paragraph 38 of the Final Report of the XVth ATCM, the Australian delegation submitted to the Meeting a list of documents of the Second Special Consultative Meeting, which led to the establishment of CCAMLR, and reissued an information paper submitted to the Preparatory Meeting of the XVI ATCM (XVI ATCM/PREP/INFO 5).

(45) The delegation of New Zealand, acting in accordance with the same paragraph of the Final Report of the XVth ATCM, submitted to the Meeting a list of documents (XVI ATCM/INFO 27) of the Fourth Special Consultative Meeting on Mineral Resource Activities which adopted CRAMRA.

(46) The Meeting agreed that the documents listed in these papers could be made publicly available.

(47) The Meeting recalled Recommendation XIV-1 calling for public release of the documents of Consultative Meetings, as from the closure of the Meeting at which they are submitted, unless indicated otherwise.

Item 7 c

Examination of Recommendations

(48) Working papers were presented to the Meeting by the delegations of China, Uruguay, Belgium and by Uruguay jointly with China concerning the Examination of Recommendations (XVI ATCM/WP 23, 24, 28 and 36). It was generally felt that Antarctic Treaty Recommendations form an integral part of the Antarctic Treaty system and are playing an extremely important role in the structure of co-operation within the system. In order to provide Contracting Parties, especially those which had obtained consultative status more recently, as well as future acceding states with a better understanding of their obligations, a large number of delegations supported a review of existing Recommendations.

(49) It was decided that two lists should be drawn up, one of Recommendations which are spent and another of those which may be affected by the Protocol on Environmental Protection to the Antarctic Treaty. Drafts of these lists were submitted to the Meeting

by China and Uruguay and by Belgium respectively. These drafts are annexed to this report (Annex D).

(50) The Meeting decided that these documents should be reviewed by the Parties before the next Consultative Meeting, together with the paper submitted by Australia on Exchange and Reporting Requirements (XVI ATCM/INFO 30), with a view to the submission of any proposals considered appropriate and the further consideration of this matter at the next Consultative Meeting.

Item 7 d

Exchange of Information

(51) The Meeting considered whether the information exchange requirements of the Antarctic Treaty, and those contained in Recommendations and measures adopted pursuant to it, continue to meet the Parties' requirements. The Meeting recognised the importance of maintaining information exchanged in accordance with Articles III and VII of the Antarctic Treaty, but noted that a number of measures subsequently adopted pursuant to Article IX of the Treaty had added considerably to the information exchange requirements.

(52) In this regard, the Meeting welcomed an information paper submitted by the delegation of Australia (XVI ATCM/INFO 30) which listed all of the information exchange requirements currently agreed. A specific proposal to modify information exchange requirements was received from the delegation of Germany (XVI ATCM/WP 42).

(53) It was noted by some Parties that the information exchange provisions have created a substantial burden and that some of the information exchanged may not be reaching those to whom it is of most use. In addition, it was suggested that some of the information exchanged is received too late for it to be useful in planning expeditions. It was further recognised that there is potential for duplication of some categories of information exchanged. In this regard it was noted that COMNAP/SCALOP members also exchange information on logistics, and that scientific information is exchanged through annual national reports to SCAR.

(54) While the Meeting agreed that the German proposal to reduce some information was a valuable step, the proposal was deferred pending a wider review of the Parties' information needs.

(55) The Meeting therefore agreed to consider the issue in detail at the XVIIth Consultative Meeting. It was agreed that in doing this the Meeting should examine the Annex to Recommendation VIII-6, and all information exchange provisions in other Recommendations and measures, and should consider the type of information that should be exchanged, the level of detail, to whom it should be sent, and the most appropriate time by which information should be circulated.

(56) Another proposal, relating to sharing information about domestic legislation relevant to Antarctica, was jointly submitted by the delegations of Argentina, Brazil, Chile, Ecuador, Peru, Uruguay, Spain and the United Kingdom (XVI ATCM/WP 43/Rev.4). The Meeting recognised the value of Parties exchanging from time to time information on their domestic legislation currently in force and which is relevant to the Antarctic Treaty. It was noted that the Protocol on Environmental Protection to the Antarctic Treaty and Conventions adopted under the Antarctic Treaty provide for the exchange of information on relevant domestic legislation but that such provisions had not been made with respect to domestic legislation enacted to give effect to the Antarctic Treaty and to obligations arising from Recommendations adopted at Consultative Meetings. It was therefore agreed that Parties would benefit from the exchange of such information. In consequence Recommendation XVI-1 was adopted.

Item 8

Inspections under the Antarctic Treaty

(57) The Meeting took note of the increasing number of inspections and the United Kingdom report on this item (XVI ATCM/INFO 5). On the request of Contracting Parties the Secretariat prepared a list of inspections undertaken since the XVth ATCM for inclusion in the final report (Annex E).

(58) Referring to a proposal presented by Sweden (XVI ATCM/WP 3), the Meeting agreed that inspections could play a useful role not only as an instrument of compliance but also as a means of exchange of experience and knowledge between the Contracting Parties.

(59) It was also noted that there is an increasing emphasis given to environmental aspects in carrying out inspections, as exemplified by those recently carried out by Australia, China, Germany and France, and by Norway. In this regard, it was recognised that more detailed reporting is called for, for example by using check-lists such as the one employed by the United States (XVI ATCM/INFO 67) and other countries (see XVI ATCM/INFO 95, submitted by Chile). This would also facilitate comparison between inspectors' reports.

(60) The Meeting recognised that any use of such standardised formats for reporting would be without prejudice to the inspection-rights provided in Article VII of the Antarctic Treaty.

(61) In the light of rising costs, the necessity to improve the efficiency of Antarctic operations and the value of co-operative efforts in Antarctica, it was agreed that joint inspections between two or more Contracting Parties should be encouraged. Moreover, it was noted that Article 14 of the Protocol on Environmental Protection also envisages joint inspections.

Item 9

Environmental Monitoring

(62) Discussions on agenda item 9 focussed on the need to implement Recommendation XV-5 through the action of the Parties and the meeting of experts mentioned by this Recommendation.

(63) The Meeting warmly received the reports of SCAR and COMNAP on this subject and considered them to be a good basis for further steps to be undertaken.

(64) It was stressed that there is a need for an expert meeting to be convened as soon as possible in order to consider and provide the advice required under Recommendation XV-5.

(65) There was consensus that the scheduled meetings of SCAR and COMNAP in Argentina in June 1992 would provide an appropriate opportunity to hold such an expert meeting. It was agreed that consultations among the Parties should be undertaken promptly in this regard.

(66) With a view to preparing for the implementation of the Protocol on Environmental Protection to the Antarctic Treaty and pursuant to Recommendations XV-5 and XV-16 the Meeting agreed that the meeting of experts should be provided with the following terms of reference:

To Consider Monitoring for the following Purposes:

To obtain a regular and verifiable record of activities and environmental data necessary to:

- assess and quantify impacts of activities, including impacts predicted in the course of environmental impact assessments;
- provide early warning of negative impacts;
- identify preventative or remedial measures needed to reduce or eliminate adverse impacts;
- plan similar activities in the future.

Topics to be Considered by a Meeting of Experts

- Identification of the nature and possible significance of adverse impacts on the values of Antarctica, as set forth in Article 3 of the Protocol on Environmental Protection to the Antarctic Treaty, which might require monitoring;
- Identification of activities, environmental and other data required to detect and monitor possible impacts and to distinguish these impacts from natural variability;
- Identification of methodologies and technologies available for monitoring (especially inexpensive and automated systems);
- Identification of steps needed to create national and co-operative data systems which would provide for collection, quality control, archiving, evaluation, exchange and retrieval of environmental data;
- Identification of existing relevant data sets, including baseline data repositories, as well as programmes which generate these data.

Item 10

Human Impact on the Antarctic Environment

(67) The Meeting discussed the item on human impact on the Antarctic environment. Within this framework there was general discussion of waste disposal, marine pollution and the implementation of environmental impact assessment procedures. There was also discussion on the protection of fauna and flora because the Meeting felt that this item was related closely to the agenda item under discussion and was also one of the Annexes concluded at Madrid. The Meeting stressed that these issues were particularly important.

With respect to the implementation of environmental impact assessment procedures, the Meeting noted COMNAP's intention to review the draft guidelines developed at Bologna in June 1991 and revise them to ensure consistency with the requirements of the Protocol on Environmental Protection to the Antarctic Treaty and its Annex on Environmental Impact Assessment.

(68) It was noted that the Antarctic Treaty Consultative Parties have adopted Recommendation XV-3, paragraphs 18, 19 and 21, of which address the topic of marine dumping. Notwithstanding that most Antarctic Treaty Consultative Parties are members of the International Convention for the Prevention of Marine Pollution by the Dumping of Wastes and other Matter, it was noted that the problem of marine dumping should be kept in mind and that particular attention should be paid to it in further considerations relating to marine pollution as required by Recommendation XV-4 .

(69) The Meeting noted the existing Recommendations concerning the aforementioned issues and the four Annexes to the Protocol on Environmental Protection to the Antarctic Treaty, covering "Environmental Impact Assessment", "Conservation of Antarctic Fauna and Flora", "Waste Disposal and Waste Management" and "Prevention of Marine Pollution". Taking into account that none of these instruments are yet in force, it was agreed that efforts should be made to urge parties to ratify the Protocol as soon as possible and that meanwhile efforts should also be made to implement the provisions of the Annexes as rapidly and completely as possible.

(70) Concerning the item on marine pollution, the Meeting welcomed the timely and important work by the Standing Committee on Antarctic Logistics and Operations (SCALOP) on the prevention of oil pollution by national Antarctic programmes and the continuing development of a comprehensive format for oil spill contingency plans in the

Antarctic. However, the Meeting recognised that other wider marine pollution issues in Antarctica still had to be addressed fully.

(71) The Meeting noted the provisions of Recommendation XV-4 (7) which called for the Parties to convene a meeting of experts to review, consider and provide advice on the prevention of marine pollution in the Antarctic Treaty Area. The Meeting agreed to encourage SCALOP to convene the meeting of experts in close consultation with the Marine Environment Protection Committee (MEPC) of the IMO. The MEPC has international and long-established experience with the necessary procedures required to prevent and combat marine pollution.

(72) It was agreed that the meeting of experts should consider the following topics:

- a) review of the work carried out by SCALOP on the prevention of oil pollution and the development of oil spill contingency plans in Antarctica and their application to non-governmental activities;
- b) assessment of the environmental effects of marine dumping and the disposal of sewage and food wastes into the sea in the Antarctic Treaty Area, and review of the best practicable means to prevent or reduce such pollution;
- c) investigation of the best practicable means to monitor marine pollution in the Antarctic, particularly as regards compliance with Annex IV of the Protocol on Environmental Protection to the Antarctic Treaty and the proposed amendments for the designation of the Antarctic Treaty Area as a "Special Area" under Annexes I, II and V of MARPOL 73/78, as well as the establishment of base-line surveillance programmes to quantify actual levels of marine pollution in the Antarctic Treaty area.

Item 11

The Antarctic Protected Area System

Item 11 a

Proposals for new Sites of Special Scientific Interest (SSSI)

(73) Draft recommendations were tabled by the United Kingdom setting out management plans for two new Sites of Special Scientific Interest:

- No. 33 Ardley Island, Maxwell Bay, King George Island, South Shetland Islands (XVI ATCM/WP 16) and
- No. 34 Lions Rump, King George Island, South Shetland Islands (XVI ATCM/WP 12).

These proposals had been recommended and approved at SCAR XXI. Recommendation XVI-2 was adopted.

Item 11 b

Proposals for new Marine Sites of Special Scientific Interest

(74) Draft Recommendations were tabled by the United Kingdom for management plans for two Marine Sites of Special Scientific Interest (XVI ATCM/WP 18):

- No.35 Western Bransfield Strait, off Low Island, South Shetland Islands;
- No.36 East Dallmann Bay, off Brabant Island

These proposals had been recommended and approved at SCAR XXI. Recommendation XVI-3 was adopted.

Item 11 c

Changes to existing SSSIs and SPAs

(75) The United Kingdom tabled four draft recommendations setting out management plans for:

Avian Island (XVI ATCM/WP 15),

Byers Peninsula, Livingston Island, South Shetland Islands (XVI ATCM/WP 17),

Specially Protected Areas Nos. 8, 9, 13, 14, 15, 16, 18 and 19

(XVI ATCM/WP 19) and

Sites of Special Scientific Interest Nos. 4, 5, 7, 10, 11, 12, 18 and 22

(XVI ATCM/WP 20).

These proposals had been recommended and approved at SCAR XXI. Recommendations XVI-4, XVI-5, XVI-6 and XVI-7 were adopted.

(76) Following advice from the delegation of Australia about the detection of errors in the original site description for Site of Special Scientific Interest No. 17, it was agreed that the site description should be amended to read as follows:

Clark Peninsula is situated on the north side of Newcomb Bay at the west end of Vincennes Bay, opposite Windmill Islands, on Budd Coast, at Lat 66°15'S, Long 110°36'E. The Site comprises all land on Clark Peninsula within the southern boundary line connecting the east side of Powell Cove to trigonometrical station G7, trigonometrical station G8 and a point to the east-south-east on Løken Moraines. The eastern boundary is the westernmost limit of Løken Moraines as far north as a point due east of Blakeney Point, and thence to the coast. The boundary of the Site will be indicated by prominent markers, and is shown on the attached map.

A copy of the revised map showing these corrections is reproduced at Annex F (i).

Item 11 d

Proposals for new Specially Protected Areas (SPA)

(77) Draft Recommendations were tabled by the United Kingdom setting out management plans for:

Cryptogam Ridge, Mount Melbourne, Victoria Land (XVI ATCM/WP 13) and Forlidas Pond and Davis Valley Ponds (XVI ATCM/WP 14).

The proposals had been recommended and approved by SCAR. Recommendations XVI-8 and XVI-9 were adopted.

Item 11 e

Proposals for Specially Reserved Areas (SRA)

and

Item 11 f

Proposals for Multiple-use Planning Areas (MPA)

(78) The XVth ATCM adopted Recommendation XV-10 providing for the establishment of Specially Reserved Areas (SRAs) to protect areas of outstanding geologic, aesthetic, and other value in Antarctica. It also adopted Recommendation XV-11 providing for the establishment of Multiple-use Planning Areas (MPAs) to assist in planning and co-ordinating activities to avoid mutual interference and minimise cumulative environmental impacts in high-use areas.

(79) To begin to give effect to these recommendations, the United States presented proposals to establish a Multiple-use Planning Area on the Southwest side of Anvers Island and a Specially Reserved Area on the north side of the Dufek Massif (XVI ATCM/WP 22).

Both proposals had been reviewed and endorsed by the Scientific Committee on Antarctic Research.

(80) Recognising that the Recommendations XV-10 and XV-11 were not in force and were expected to be superseded by an additional Annex to the Antarctic Treaty Protocol on Environmental Protection signed in Madrid on 4 October 1991 (see paragraph 92 below), the United States proposed that the Meeting adopt a Recommendation calling upon national programme operators and, to the maximum extent possible, persons subject to the jurisdiction of the Antarctic Treaty Parties to voluntarily take account of the provisions of the proposed MPA and SRA.

(81) During discussion of the proposals, it was noted that the draft Annex on Area Protection and Management under consideration by the Meeting included provisions for the special protection and management of areas as provided by Recommendations XV-10 and XV-11. It was also noted and agreed that it would therefore be desirable to begin gathering practical experience in implementing such provisions relating to such areas.

(82) Several delegations pointed out that each Party would have to take steps to ratify or otherwise approve the proposed Recommendation before it could enter into force and that the same end could be achieved largely by having the Consultative Meeting agree that Parties should voluntarily comply with the provisions of the proposed MPA and SRA. Several delegations also pointed out that provisions in the proposed MPA calling for the maintenance of careful records and reporting of information concerning commercial fishing operations in the area would be addressed more appropriately by the Commission for the Conservation of Antarctic Marine Living Resources. It was agreed that these provisions should be deleted from the proposed MPA management plan.

(83) The SRA proposal and the amended MPA proposal are appended to this report as Annexes F (ii) and F (iii). The Meeting agreed that Parties should require, voluntarily, that their national programme operators and, to the maximum extent possible, persons subject to their jurisdiction comply with the provisions of the proposed SRA and MPA as amended.

Item 11 g

Review of the System

(84) The United Kingdom and the United States of America presented their proposals to introduce a new Annex V for the Antarctic Protected Area system (XVI ATCM/WP 1 and XVI ATCM/WP 6 respectively). It was recalled that this item had already been discussed during the XIth Antarctic Treaty Special Consultative Meeting.

(85) The United Kingdom pointed out that, because of the many types of designation, the present system had led to confusion in the regulations relating to protected areas. The United Kingdom recommended that the system required major rationalisation but without any loss to the existing quality of protection. It was stressed that the system should be concise, unambiguous and in conformity with the existing Annexes to the Protocol on Environmental Protection to the Antarctic Treaty.

(86) The United States of America, in presenting its proposal, fully supported the UK delegation's views concerning the inadequacies of the present system and the desirability of having a new more workable regime.

(87) Italy introduced a paper (XVI ATCM/WP 35/rev 1) and noted that it was not the intention of the Italian delegation to table a third proposal for a new annex to the Protocol on Environmental Protection to the Antarctic Treaty but that it simply wanted to support the general trend set out in the papers presented and in the discussions held at the XIth ATSCM. Italy also drew the Meeting's attention to the handbook on management plans, being prepared by SCAR, which would provide a general guideline in this context.

(88) Several delegations indicated that the new system of area protection and management should allow for a buffer zone so that the designated areas are of sufficient size to ensure the greatest range of protection.

(89) SCAR and ASOC also submitted comprehensive papers on the Antarctic Protected Area system (XVI ATCM/INFO 14 and XVI ATCM/INFO 63, respectively).

(90) Some delegations mentioned that visits by tourists should be taken into account and that there would be value in collecting data on such visits.

(91) One delegation observed that the new annex should contain provisions to integrate existing protected areas into the new regime.

(92) After intensive discussion the Meeting reached consensus on a final text, based upon the aforementioned working papers, of an Annex on Area Protection and Management that would form Annex V to the Protocol on Environmental Protection to the Antarctic Treaty. Recommendation XVI-10 was adopted.

(93) The Meeting requested that the Depositary convene a linguistic committee in Washington to bring into accordance with the English text of the Annex the French, Russian and Spanish language texts with a view to rectification in accordance with the rules and procedures set out in the Vienna Convention on the Law of Treaties of 1969.

(94) The Meeting agreed that the definition of "Antarctic Specially Managed Areas" set out in Article 4 of the Annex would allow such areas to be established for the purpose of prohibiting, restricting or managing activities, including tourism, conducted in accordance with any provisions adopted under the Protocol, to avoid mutual interference or minimise environmental impacts.

The Meeting agreed that if an activity is permitted under a management plan, this would not derogate from the obligation to meet all other requirements of the Protocol including environmental assessment before any decision to proceed with such activity. It was noted that it would be a responsibility of the appropriate authority issuing the permit to require that the planned activity is in accordance with all aspects of the Protocol prior to issuing a permit.

The Meeting agreed that under Article 10 paragraph 1 (a) the arrangements for exchanging records do not necessarily require that detailed records be transmitted to all Parties and that it would be possible for some or all such records to be exchanged only following a request.

Item 11 h

Historic Sites and Monuments

(95) Proposals were submitted for the following sites in the list of Historical Sites and Monuments annexed to Recommendation VII-9.

(96) Chile and the United Kingdom submitted a draft recommendation (XVI ATCM/WP 45/Rev 1), to designate Waterboat Point, Danco Coast, Antarctic Peninsula

(64°49'S, 62°52'W) in the List of Historic Sites and Monuments: the remains and immediate environs of the Waterboat Point hut, situated close to the unoccupied Chilean station, "Presidente Gabriel González Videla". The Waterboat Point hut, of which only the base of the boat, roots of door posts and an outline of the hut and extension still exist, was occupied by the UK two-man expedition of Bagshawe and Lester in 1921-22.

(97) Chile and the United Kingdom submitted a draft recommendation to erect a commemorative plaque at Yankee Bay, MacFarlane Strait, Greenwich Island, South Shetland Islands, near the Chilean refuge located at 62°32'S and 59°45'W, to the memory of Captain Robert MacFarlane, who in 1820 explored the Antarctic Peninsula area in the brigantine *Dragón* (XVI ATCM/WP 38).

(98) Norway and Chile further put forward a draft recommendation (XVI ATCM/WP 40) to have a cairn with memorial plaque erected at Whalers' Bay, Deception Island, South Shetland Islands, in the vicinity of the whalers' cemetery (Historic Monument No. 31) 62°59'S, 60°34'W, to honour Captain Adolfus Amandus Andresen, Antarctic pioneer who was first to establish a whaling operation at Deception Island in 1906.

(99) Finally, Chile, Spain and Peru (XVI ATCM/WP 39) submitted a draft recommendation to place a cairn on Half Moon Beach, Cape Shirreff, Livingston Island, South Shetland Islands, commemorating the officers, soldiers and seamen on board the *San Telmo*, which sank in September 1819, which were possibly the first people to live and die in the wastes of Antarctica. The aforementioned proposals were adopted as Recommendation XVI-11.

During the discussions of this subject SCAR and some delegations mentioned the problem of vulnerability of some monuments such as the cemetery situated in Deception Island (Historic Site No. 31). Other delegations referred to the value of an archaeological survey of such areas as Byers Peninsula, Cape Shirreff and other areas particularly rich in archeological and historical remains.

Items 12 and 13

Item 12: **Promotion of international scientific co-operation**

- a) The role of Antarctic science in understanding the global environment, including depletion of the ozone layer
- b) Antarctic Science Conference, Bremen 1991

Item 13: International Antarctic scientific and logistic co-operation

- a) Measures for scientific and logistic co-operation in Antarctica
- b) Comparability and accessibility of Antarctic scientific data
- c) Siting of Antarctic stations

(100) The Meeting decided to discuss items 12 and 13 together.

(101) Papers were presented by Italy (XVI ATCM/INFO 62) and Japan (XVI ATCM/WP 9) in relation to item 12 (a). From observations made at Syowa Station, as well as at other Antarctic stations and by US satellites, a further depletion of the ozone layer had been detected. Based upon the suggestion by the Japanese delegation, the Meeting recognised the necessity to continue the research work by national and international efforts on the depletion of the ozone layer.

(102) A report of the SCAR Antarctic Science Conference in Bremen in September 1991 was submitted to the Meeting (XVI ATCM/INFO 14) and appreciation was expressed by the Meeting under item 13 (a).

Item 13 a

Measures for scientific and logistic co-operation in Antarctica

(103) On the occasion of the 30th anniversary of the Antarctic Treaty and the development of the Antarctic Treaty system, Delegations noted that international co-operation in Antarctic scientific research, which had so notably marked the International Geophysical Year had steadily and progressively increased. In this context, it was noted that the Protocol on Environmental Protection to the Antarctic Treaty had designated Antarctica as a natural reserve devoted to peace and science.

(104) Many delegations noted the increasingly important contribution of large-scale research programmes to the solution of global scale problems which demanded increased financial, logistic and technological support. As a consequence, efficient planning of scientific and logistic activity required that account be taken of the influence of Antarctica on the functioning of global environmental systems; of measures to enhance the quality of scientific research; of the value of strengthening co-operative use of existing facilities to gain optimal results from investment in Antarctic stations; and of the need to respond to accumulating knowledge and to changes in requirements for study of the world environment.

Papers submitted to the Meeting noted the benefits to be derived from increased international co-operation in the fields of:

- mutual exchange of information on long-term scientific programmes
- more efficient use of human scientific capacity
- cost-effectiveness for laboratories, instruments, stations and logistics
- reduced environmental impact and improved safety of operations
- more systematic and co-ordinated scientific observations
- a co-ordinated approach to the siting of stations
- integration into existing arrangements of the scientific programmes of new Antarctic Treaty Consultative Parties.

In this context, the Meeting welcomed with satisfaction SCAR's Conference on Antarctic Science, designed to foster interdisciplinary research, to strengthen the interaction within the international scientific community and to further integrate scientific planning into programmes of global significance.

In the long line of Antarctic tradition which stems from the International Geophysical Year, the Meeting felt that the time might have come for consideration of a more systematic approach to international collaboration in research programmes and their associated logistic activities in Antarctica.

(105) The Meeting noted that there had been examples of new and interesting forms of international co-operation arising from initiatives and experiences in many countries. A number of more detailed examples and suggestions were included in several documents presented at the XVIth Consultative Treaty Meeting under Items 12 and 13 of the Agenda (XVI ATCM/WP 4 by Sweden, XVI ATCM/INFO 34 by Finland, XVI ATCM/INFO 56 by the USSR, XVI ATCM/INFO 60 by Argentina and Chile). The Meeting considered that this material would provide a valuable input to the work already being done by SCAR and COMNAP, and requested both organisations to continue their endeavours towards rationalising, systematising and improving the framework within which the pursuit of high quality scientific programmes of global significance and the improvement of scientific productivity could be achieved.

Item 13 b

Comparability and accessibility of Antarctic scientific data

(106) The delegation of the United States of America presented a working paper on Accessibility of Antarctic Geophysical Data (XVI ATCM/WP 30). The Meeting discussed the paper and adopted Recommendation XVI-12.

(107) The Meeting discussed a paper submitted by Italy on an Antarctic International Computer Network for Data Exchange (XVI ATCM/WP 26) and the implementation of Recommendation XV-16 calling for the creation of an Antarctic environment and scientific data system.

(108) Although such a system is intended to eventually encompass the full range of environmental and scientific data, it was agreed that initial consideration of this issue could occur in the context of a meeting of experts called to discuss environmental monitoring of the impacts of human activities in Antarctica. Such a meeting, called pursuant to Recommendation XV-5, would, of necessity, consider data issues.

(109) It was agreed therefore that this matter should be referred to the meeting discussed in the report on item 9 (paragraphs 62 - 66).

Item 13 c

Siting of Antarctic stations

(110) The Meeting considered the working paper XVI ATCM/WP 25 submitted by Italy. The substance of this matter was covered in the discussion of item 13 (a) reported above.

Item 14

Tourism and Non-governmental Expeditions in the Antarctic Treaty Area

(111) The Meeting received working papers by the delegations of France (XVI ATCM/WP 2), Chile (XVI ATCM/WP 29), Japan (XVI ATCM/WP 34), Italy (XVI ATCM/WP 37) and Germany jointly with Japan (XVI ATCM/WP 41). Numerous information papers were presented, namely by the United Kingdom (XVI ATCM/INFO 19, 20 and 73), the United States (XVI ATCM/INFO 58, 59, 68 and 84), ASOC (XVI ATCM/INFO 77) and the WTO (XVI ATCM/INFO 87). The Meeting decided to establish a sub-working group under the chairmanship of Mr Antônio José Guerreiro of Brazil.

(112) The sub-working group initiated a detailed examination of tourism in Antarctica, bearing in mind the decision of the XVth ATCM that a comprehensive review of the

issue of tourism and non-governmental expeditions was required and taking into account previous Recommendations regarding tourism and its effects, in particular Recommendation VIII-9. It studied the proposals for a future Annex to the Protocol adopted in Madrid contained in working papers XVI ATCM/WP 2, 29 and 37, the proposals for future work contained in working papers XVI ATCM/WP 34 and 41, as well as several information papers on the subject.

(113) The sub-working group submitted a draft Recommendation on tourism and non-governmental activities in the Antarctic Treaty area to Working Group I. The Meeting subsequently adopted Recommendation XVI-13.

Item 15

Antarctic meteorology and telecommunications

(114) A report was presented by WMO (XVI ATCM/INFO 31) which provided factual information on the observational networks and communications arrangements for the transmission of Antarctic meteorological data, both within and outside the Antarctic region, emphasising the importance of automatic weather stations and the increasing development of satellite communications. The deficiencies of the network were noted, particularly the lack of upper air observations in the Pacific sector of West Antarctica and the southern Antarctic Peninsula. Formal WMO resolutions were drawn to the attention of the Meeting which sought the support of Treaty Parties to improved observations, particularly by use of automatic weather stations, ocean buoys, voluntary observing ships and automated aircraft observations. IOC noted co-operation with WMO in seeking to improve Antarctic ocean observations.

(115) The continuing efforts of WMO in monitoring the performance of the communication system and the holding of expert meetings to improve the system were reported. The next such meeting was to be held in October 1991. The continuation of frequent dialogue between the Permanent Representatives of WMO and the Managers of National Antarctic Programmes at a national level was emphasised in seeking to improve Antarctic observation and communication networks.

(116) One delegation referred to Recommendation XV-18 and noted the importance of this item, taking into account the Protocol on Environmental Protection to the Antarctic Treaty and possible accidents in the area. Consequently the need for improving meteorological services in the Antarctic was pointed out. In this context, this

delegation stressed that the support of SCAR and national agencies would be needed; it should also be required to continue the co-ordination of national services with the assistance of WMO, SCAR and COMNAP.

(117) In response to a delegation's request for information the IOC Representative noted that the basic issue appeared to involve data exchange and archiving. In this respect, there may be a need for greater co-ordination of Southern Ocean activities and data with the IOC Committee on IODE (International Oceanographic Data Exchange). It should be further noted that the Regional Oceanographic Data Centre for the Southern Ocean was established within the Argentine National Oceanographic Data Centre in 1987. Delegations requiring additional information on IOC activities were invited to contact the IOC Secretariat in Paris.

Item 16

Marine hydrometeorological services to navigation in the Southern Ocean

(118) In response to the request of XVth ATCM a paper was presented by WMO (XVI ATCM/INFO 48), in which the results of its further examination of the question of the provision of marine hydrometeorological services in the Antarctic were outlined. This paper, which had also previously been made available to COMNAP, elaborated on the report of the joint SCAR/WMO/IOC meeting held in Leningrad in 1989 and provided basic principles for the provision of these services. It further defined the facilities which should exist at Antarctic forecasting offices and the meteorological products which they should seek to provide. WMO did not believe that a "Regional Specialised Meteorological Centre" was at present required in Antarctica but offered to facilitate, as far as possible, support from existing meteorological centres outside Antarctica which would complement the work of forecasting offices in Antarctica.

(119) The requirement for marine hydrometeorological services for the safety and economy of Antarctic operators was emphasised by WMO, by Finland (XVI ATCM/INFO 35) and the USSR (XVI ATCM/INFO 26), and the essential prerequisite of an improved observational network for their provision was noted. In the latter respect the joint co-operation between Germany and Chile in establishing a research programme utilising very-high-resolution Synthetic Aperture Radar satellite data to delineate sea ice under cloudy conditions was described. Such research programmes have the potential to lead eventually to valuable operational systems, although at considerable cost.

(120) The IOC representative informed the Meeting that IOC co-operates with WMO through IGOSS (Integrated Global Oceanographic Services System) and DBCP (Drifting Buoy Co-operation Panel) with the objective of providing data required for hydrometeorological services. In 1989, the IOC initiated the development of the Global Ocean Observing System (GOOS) in co-operation with WMO and UNEP. Co-operation with SCAR is welcomed in designing and planning elements of GOOS in the Southern Ocean area.

(121) The Meeting had an exchange of views on this item. In this context, the inter-relation between items 15 and 16, the desirability of establishing a centre for ice forecasts and the necessity for improving the co-operation and co-ordination between WMO and COMNAP were noted, although the Meeting noted COMNAP's conclusion that there is no requirement for further joint or individual action.

(122) In the course of the exchange of views which took place, a consensus was reached that at the present time questions concerning the improvement of meteorological and ice information services should be dealt with mainly at the national level while consultations continue in COMNAP and WMO.

Item 17

Co-operation in hydrographic surveying and charting of Antarctic waters

(123) The representative of SCAR presented an information paper (XVI ATCM/INFO 76) containing its proposals on co-operation in hydrographic charting of Antarctic waters which had been elaborated by the SCAR Working Group on Geodesy and Geographic Information.

(124) The representative of IHO commented on the results of the meeting of a "Working Group on Co-operation Concerning Hydrographic Surveying and Nautical Charting", established by IHO and also attended by SCAR and COMNAP, which had been held in Bonn on 9 - 10 October 1991. For further information he referred to the Report of this Working Group (see XVI ATCM/INFO 74). In this context, he pointed out that the Working Group had considered the proposals of SCAR, contained in XVI ATCM/INFO 76, and had taken action which would take into account the proposals which had been put forward by the SCAR Working Group on Geodesy and Geographic Information.

He drew the Meeting's attention to the IHO special publication *Status of Hydrographic Surveying and Nautical Charting in Antarctica* (SP 55, ANNEX 1). The IHO representative stressed that the information shown in SP 55, ANNEX 1 should not convey the impression that Antarctic waters were well charted but, on the contrary, that there were serious shortcomings in the adequacy of the charts and other associated hydrographic information. These shortcomings not only lead to potential dangers for shipping but also to the lack of basic data required for the pursuit of marine science in the area.

The IHO representative informed the Meeting about a proposal which had come up during the meeting of the Working Group on Co-operation Concerning Hydrographic Surveying and Nautical Charting to establish a permanent working group on co-ordination of hydrographic co-operation in the Antarctic with the following terms of reference:

- Examine INT Chart standards and application to Antarctica
- Develop an INT Chart scheme or a scheme of charts agreed to by members covering all Antarctic waters (south of 60° latitude)
- Examine the status and quality of hydrographic surveys, and encourage the publication of source/reliability diagrams on newly published charts
- Identify the needs for improved surveys and charts (taking account of advice from COMNAP, etc)
- Develop an annual report of the status and plans for hydrographic surveys, including updating and amplifying SP 55, ANNEX 1.
- Develop co-operative approaches to meeting the needs/priorities for surveys and charting
- Maintain appropriate liaison with relevant scientific organisations, including SCAR (Geodesy and Geographic Information Working Group), IOC and COMNAP
- Establish and maintain liaison with the IHO/IOC GEBCO organisation concerning Antarctic bathymetric data collection and mapping.

Finally he underlined that it would be useful if all ships travelling from and to Antarctica recorded bathymetric data and that the results be transmitted to their respective flag state's national hydrographic offices.

(125) The Soviet Union presented a working paper (XVI ATCM/WP 44) expressing the importance of developing an atlas of large scale topographic maps or plans of Antarctic stations and proposing that SCAR - together with COMNAP - should establish an ad hoc group for carrying out the preparatory work.

(126) The SCAR representative informed the Meeting that the SCAR Working Group on Geodesy and Geographic Information had published a SCAR map catalogue in 1989/90 which had been distributed to all SCAR member nations. He announced that the question of producing an atlas along the lines of the Soviet delegate's proposal will be discussed on the occasion of the next SCAR working group meeting to be held at Bariloche, Argentina, in June 1992.

The IHO representative explained the technical difficulties in producing hydrographic charts and in particular commented on the differences between land mapping and nautical charting.

(127) The Meeting had an exchange of views on the report submitted by IHO (see XVI ATCM/INFO 74). Delegates expressed their satisfaction over the action taken by the IHO, in co-operation with SCAR and COMNAP in response to Recommendation XV-19. The need to further implement this Recommendation was stressed. In this context some delegations supported the terms of reference established by the IHO working group for its proposed working group on hydrographic co-operation in the Antarctic.

(128) One delegation went further in underlining the importance of surveying and charting the continental shelf of Antarctica, in particular the shallow water areas.

The Meeting warmly thanked SCAR and IHO for their positive and constructive response to Recommendation XV-19.

Item 18

Air Safety in Antarctica

(129) The question of improving air safety in Antarctica was discussed in detail by the Meeting.

(130) One delegation recalled that, upon invitation of the Contracting Parties a meeting of experts had been convened in May 1989 in Paris to develop measures relating to air safety in Antarctica. It pointed out that this expert meeting had submitted 10 proposals on air safety for consideration to the XVth ATCM, and that the XVth ATCM, in taking up the said proposals, had adopted Recommendation XV-20.

(131) The said delegation further recalled that the task of implementing Recommendation XV-20 had been taken up by COMNAP/SCALOP through the SCALOP subgroup on Antarctic Air Safety. It drew the Meeting's attention to the results which were summarised as follows:

Pursuant to Recommendation XV-20

- a library of ICAO publication has been acquired by the SCALOP subgroup to ensure that all measures are implemented on the basis of ICAO criteria;
- a standardised format for advance notices on air operations has been developed and introduced for use;
- Primary and Secondary Air Information Stations in Antarctica have been designated, through which air operations are being co-ordinated;
- the TIBA frequency of 129.7 MHz has been adopted and confirmed by national operators; the procedures are in accord with ICAO Annex 11;
- national points of contact have been designated to be used as addresses for distress messages through the COSPAS/SARSAT system;
- a handbook entitled "Antarctic Flight Information Manual (AFIM)" has been developed to Recommendation XV-20 and ICAO Annex 15. The first edition has been assembled and was introduced to the XVIth ATCM. Copies will be sent through the diplomatic channels to the Treaty Parties. The manual comprises information on aircraft, airfields, equipment, operational procedures, areas of national operations, etc and
- a flight planning format is being developed for pre-flight transmission.

(132) The aforementioned delegation informed the Meeting that the full wording of the proposals of the SCALOP subgroup is set forth in the first Report of COMNAP to the XVIth ATCM (see Annex B (ix)). He added that the work of the SCALOP subgroup will be continued taking into account the remaining recommendations by giving due regard to the increasing importance of Antarctic air safety.

(133) The Soviet delegation underlined the importance of air safety in Antarctica with regard to transport and scientific research, especially considering the increase of activities in the future. The delegation submitted an information paper on this matter (XVI ATCM/INFO 45). It was proposed that adequate measures should be taken to set up regulations with a view to the use of air space, to traffic control and a system of air safety based on ICAO principles and the special conditions of the Antarctic. It was further noted that COMNAP and SCAR should continue their work in this field.

Item 19

Frequency of future Consultative Meetings

(134) The Meeting discussed the future frequency of Consultative Meetings. It was agreed that, in view of the increasing range and complexity of the issues coming before Consultative Meetings and in view of the need to adopt procedures to give effect to the Protocol on Environmental Protection to the Antarctic Treaty, it would be necessary that Consultative Meetings should in future be held annually and in the first half of the year.

(135) One delegation confirmed its position that the move to annual regular Consultative Meetings depended on the entry into force of the Protocol to the Antarctic Treaty, but taking into account the invitation extended by the Italian Government and the support which it received from Consultative Parties, this delegation would join the consensus on the date of the XVIIth ATCM.

(136) It was agreed also that the move to annual meetings would make unnecessary the holding of formal Preparatory Meetings. Some delegations also stated their view that annual meetings could be shorter than the two weeks which is the current normal length.

Date and place of the XVIIth Consultative Meeting

(137) The Meeting received with special satisfaction the invitation of Italy to host the XVIIth Consultative Meeting in 1992. Italy proposed that the Consultative Meeting be held in Venice from 11 to 20 November 1992.

Item 20

Commemoration of the 30th anniversary of the entering into force of the Antarctic Treaty

(138) Delegations wished to mark the significance of 30 years of co-operation in the Antarctic under the Antarctic Treaty and the significant achievements under the Antarctic Treaty system. For this purpose, they considered a proposal submitted by Australia (XVI ATCM/WP 47/REV.1) and adopted a Declaration commemorating the 30th anniversary of the entry into force of the Antarctic Treaty (Part III of this report). They requested the host Government to forward the Declaration to the Secretary General of the United Nations and recommended that the Governments of all Contracting Parties distribute the Declaration to interested organisations and persons in their own countries.

Item 21

Any other business

(139) The question was raised whether it would not be wise to consider the date of the XVIIIth ATCM. A large number of delegations expressed their wish to hold a Meeting in the first half of 1993, whereas several delegations suggested a Meeting in the first half of 1994.

(140) The attention of the Meeting was drawn to the fact that the shift in the scheduling of ATCMs to an annual cycle (see Item 19, above) would have significant implications for the process of preparing for ATCMs. Specifically there would no longer be meetings to prepare the draft ATCM agenda and to decide on attendance by international organisations. It was recognised that an alternative means of undertaking these tasks was necessary and that devising this means would require amendment of the ATCM rules of procedure.

(141) The Meeting agreed that it would not be possible to amend the rules prior to the XVIIth ATCM and that a temporary procedure for preparing for that Meeting was necessary. To this end, the Meeting agreed that the following steps would be undertaken:

A. Germany, as host of the XVIth ATCM would prepare a preliminary agenda for the XVIIth ATCM. This preliminary agenda is annexed to the Final Report of this Meeting (Annex G).

B. Contracting Parties to the Antarctic Treaty proposing additional items for the agenda will inform Italy as Host Government for the XVIIth ATCM no later than 180 days before the beginning of that Meeting, and will accompany their proposal with an explanatory memorandum. Italy will draw the attention of all Parties to this provision not less than 210 days before the Meeting.

C. Italy will thereafter prepare a provisional agenda for the XVIIth ATCM. The provisional agenda will include:

- (i) all items on the preliminary agenda, and
- (ii) all items, the inclusion of which has been requested by a Contracting Party.

D. Italy will convene a meeting of representatives of the Embassies of all Contracting Parties, at least 120 days in advance of the XVIIth ATCM, to transmit the provisional agenda together with explanatory memoranda and any other papers related thereto. (This provision would not preclude submission of additional items after the deadlines set forth above if exceptional circumstances required it.)

E. The Meeting agreed that invitations be extended to the following international organisations having a scientific or technical interest in Antarctica to designate an expert to attend the XVIIth ATCM:

- the Antarctic and Southern Ocean Coalition, (ASOC)
- the International Civil Aviation Organisation, (ICAO)
- the International Hydrographic Organisation, (IHO)
- the International Maritime Organisation, (IMO)
- the Intergovernmental Oceanographic Commission, (IOC)
- the International Union for the Conservation of Nature and Natural Resources, (IUCN-World Conservation Union)
- the United Nations Environmental Program, (UNEP)
- the World Meteorological Organisation, (WMO)
- the World Tourism Organisation, (WTO)

F. Proposals for the invitation of other international organisations shall be submitted to Italy, together with a memorandum setting out the basis of the proposal in relation to the items on the provisional agenda. In addition, any Contracting Party proposing an additional item for the agenda in accordance with step B may also propose that an invitation be extended to an international organisation having a scientific or technical interest in Antarctica not on the list in E above.

G. Italy will transmit such proposals to all Contracting Parties in accordance with step D. Any Antarctic Treaty Consultative Party wishing to object to such a proposal shall do so not less than 90 days before the XVIIth ATCM.

H. Italy will, subject to step G above, extend invitations to international organisations identified in accordance with steps E and F not less than 75 days before the XVIIth ATCM and shall request the international organisation to communicate the name of the designated expert to it prior to the opening of the XVIIth ATCM.

The Meeting agreed that the XVIIth ATCM would undertake consideration of the necessary formal amendments to the ATCM rules of procedure.

(142) The Meeting was reminded of the need to ensure that whenever a formal meeting of the Parties is held, full secretarial services, including the use of the four official Treaty languages, should be provided.

(143) It was agreed that a message be sent by the host government to all stations in Antarctica. The text of this message is at Annex H.

Item 22

Adoption of the report

(144) The Final Report and the Recommendations contained therein were adopted by consensus on 18 October 1991.

Item 23

Closing of the Meeting

The Meeting expressed its warm thanks to the Government of Germany, the Chairman of the Meeting and the Executive Secretary and his staff, and was closed on 18 October 1991.

PART II

**RECOMMENDATIONS ADOPTED AT
THE XVIth ANTARCTIC TREATY CONSULTATIVE MEETING**

XVI - 1

EXCHANGE OF INFORMATION

The Representatives,

Recalling the provisions of Articles III and VII of the Antarctic Treaty;

Noting that their Governments give effect in their domestic legislation to obligations arising from agreements reached at Antarctic Treaty Consultative Meetings;

Noting that the Convention for the Conservation of Antarctic Seals, the Convention on the Conservation of Antarctic Marine Living Resources and the Protocol on Environmental Protection to the Antarctic Treaty contain provisions whereby information about such domestic legislation is, or is to be, exchanged between Parties;

Noting, however, that such provision has not been made in relation to obligations arising from Recommendations adopted at Consultative Meetings;

Aware that knowledge of this domestic legislation can be of interest to the other Consultative Parties;

Recommend to their Governments that they include in their exchange of information under Article VII (5) of the Antarctic Treaty, information on any domestic legislation enacted to give effect to the Antarctic Treaty and to obligations arising from Recommendations adopted at Antarctic Treaty Consultative Meetings.

XVI - 2

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. 33: Ardley Island, Maxwell Bay, King George Island, South Shetland Islands.
 (Location: 62°13'S, 58°54'W).

Site No. 34: Lions Rump, King George Island, South Shetland Islands.
 (Location: 62°08'S, 58°08'W).

ANNEX 1 TO RECOMMENDATION XVI - 2

Site of Special Scientific Interest No. 33 Ardley Island, Maxwell Bay, King George Island

1. Geographical location

Ardley Island (62°13'S, 58°54'W) is situated about 500 m east of the coast of Fildes Peninsula, Maxwell Bay, King George Island. It is about 1 km south-east of the Soviet station Bellingshausen and the Chilean station Teniente Marsh, and about 0.5 km east of the Chinese station Great Wall.

2. Management Plan

(i) Description of Site

The Site comprises the entire island and its associated littoral zone, including the isthmus between the island and Fildes Peninsula to the west. The island is about 2.0 km long and 1.5 km at its widest, and rises to about 50 m altitude. It comprises mainly Tertiary andesitic-basaltic lavas and tuffs, and there are some raised beach terraces. It is snow- and ice-free in summer. There is a small (about 100 m long) freshwater pond on the south-west of the island. There is a refuge hut (FRG) near Braillard Point, and two more refuge huts (Argentina, Chile) are situated near the middle of the northern coast of the island, the latter comprising several huts.

(ii) Reason for Designation

The Site is of exceptional biological interest. It has a diverse avifauna with 12 breeding species, and is of particular importance for its breeding colonies of gentoo penguins (*Pygoscelis papua*); the average number of breeding pairs is about 4,000, which is the largest concentration of gentoos within the South Shetland Islands and probably in the Antarctic. There are also about 1,200 pairs of breeding Adélie penguins (*Pygoscelis adeliae*) and a small number of chinstrap penguins (*P. antarctica*). Other breeding species of particular importance are

southern giant petrels (*Macronectes giganteus*). Wilson's storm petrels (*Oceanites oceanicus*) and Black-bellied storm petrels (*Fregatta tropica*).

The island possesses some of the best-developed and most extensive plant communities in the South Shetland Islands, notably the climax fellfield ecosystem dominated by macro lichens (*Himantormia lugubris*, *Usnea* spp.). Such vegetation is extremely sensitive to human intervention and is very easily damaged.

(iii) Outline of Research

Detailed ornithological and botanical research has been undertaken on Ardley Island for many years by Chilean, FRG and GDR scientists, with brief studies made also by scientists from other national stations in the area.

Results of a 10-year census and breeding study, commencing in 1979, of pygoscelid penguins have revealed large between-season fluctuations in numbers and the breeding success of each species. Also, the giant petrel breeding population has declined by about 80 % in recent years. There is strong evidence that these population fluctuations are a direct response to disturbance by large numbers of visitors and to vehicles and low-flying aircraft. The effects of these impacts will continue to be monitored as an integral part of the long-term ornithological research being undertaken at this site.

Detailed investigations of the phytosociology of the island's vegetation and of the physiology of selected lichen species have been undertaken. Further terrestrial botanical, zoological and littoral research is planned. Because of the extreme importance of this area to biological research it is imperative that it is protected from the severe threat of human intervention so as to minimise its impact on this exceptional ecosystem.

(iv) Date of expiry of designation

31 December 2001.

(v) Access points

None specified, although not more than five persons should enter the site from the sea anywhere east of a north-south line running through the beacon on the mid-north coast of the island.

(vi) *Pedestrian and vehicular routes*

Pedestrian activity should be restricted whenever possible to areas with minimal vegetation, and should avoid any bird breeding sites, except as required for approved research studies. Tourists and non-scientific station and ship personnel should visit only the area designated for this purpose (see (ix)) in order to minimise disturbance of biota. The use of any type of vehicle, including amphibious craft on land, is not permitted. Helicopters should not land on or overfly the island below 300 m altitude. Aircraft landing at and taking off from Teniente Marsh airfield should avoid overflying the island.

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

Other scientific investigations may be permitted as long as they cause minimum impact on the biota and ecosystems. All markers and structures associated with field experiments must be removed as soon as the research is completed.

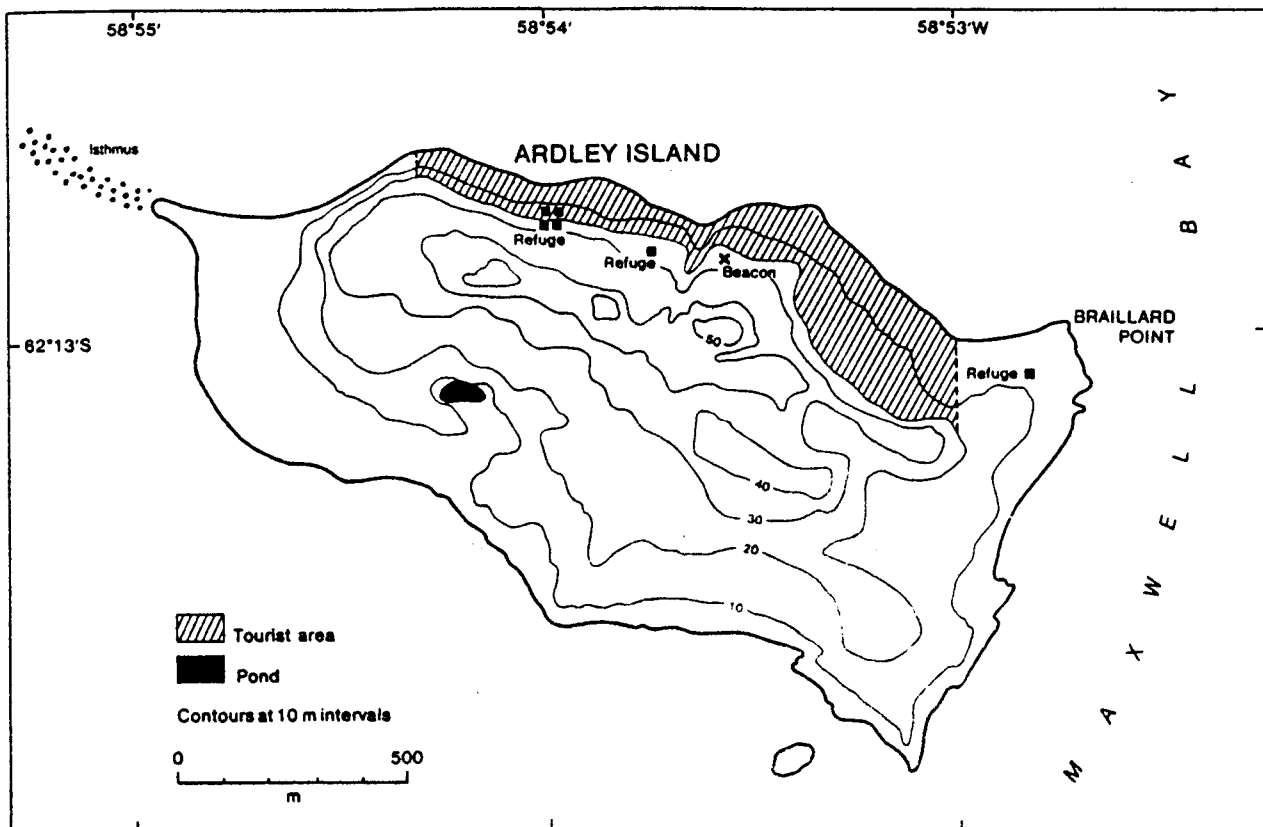
(viii) *Scientific sampling*

All activities involving banding, capture, killing, etc of any bird 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*

Large groups of visitors to the Site should be limited to a maximum of 20 persons at any time. Such groups of persons should have access only to the "tourist area" marked on the map, i.e. the north coast of the island as far as 300 m west of Braillard Point and 300 m west of the Chilean refuge, up to an altitude of 20 m above sea level. Groups should be accompanied by a guide, provided from the national station approving the visit, who will be responsible for their conduct and who is fully conversant with the Site Management Plan, the Agreed Measures for the Conservation of Antarctic Fauna and Flora, and the current research programmes. There should be no access for dogs whether or not they are required for sledging purposes. All human waste materials should be removed from the Site and returned to the Station of origin; no combustible materials should be incinerated within the Site.

Site of Special Scientific Interest No. 33



ANNEX 2 TO RECOMMENDATION XVI - 2

Site of Special Scientific Interest No. 34 Lions Rump, King George Island, South Shetland Islands

1. Geographical location

The Site is situated on the south coast of King George Bay, King George Island, South Shetland Islands, and is bounded by the following co-ordinates:

62°07'48"S, 58°09'17"W

62°07'49"S, 58°07'14"W

62°08'19"S, 58°07'19"W

62°08'16"S, 58°09'15"W

2. Management Plan

(i) Description of Site

The Site is named after Lions Rump, a prominent rocky hill between the southern extremity of King George Bay and Lion Cove. It includes the littoral and sublittoral extending from the eastern end of "Lajkonik Rock" to the northernmost end of Twin Pinnacles Island, and from that point to the easternmost end of the columnar plug "Lions Head" to the east of White Eagle Glacier. On land the Site includes the coastline of raised beaches, freshwater pools and the streams on the south side of King George Bay and, around Lion Cove, moraines and slopes leading up to the lower ice tongue of White Eagle Glacier and westward to a small moraine protruding through the ice cap south-east of Sukiennice Hills. Lions Rump comprises Tertiary lavas and tuffs with thin brown coal intercalations and silicified wood fragments. The moraine west of Lion Cove consists of several Holocene stages of glacier advance and retreat. A small refuge is situated near the shore close to the main stream within the Site, about 300 m west of Lions Rump.

(ii) Reason for Designation

The Site is representative of the terrestrial, limnological and littoral ecosystems of King George Island, possessing diverse biota and rock formations.

There is a rich flora, especially of lichens, and the two native vascular plants, *Colobanthus quitensis* and *Deschampsia antarctica*, are frequent. Twelve species of birds breed within the Site, including many colonies of three species of pygoscelid penguins, Adélie, chinstrap and gentoo. There are large numbers of elephant seals and fur seals on the beaches. It is a rich part of the coastal ecosystem which has not been disturbed by human activity, other than various biological, geological and geomorphological studies which have been undertaken within the Site.

(iii) Date of designation and originator

July 1990: Poland

(iv) Date of expiry of designation

31 December 2001.

(v) Access Points

Access from the sea should be close to the outflow of the main stream within the Site about 300 m west of Lions Rump. Helicopter landings should be restricted to the area south of the southern boundary of the Site, so as not to disturb the fauna.

(vi) Entry permit requirement

Entry into the Site should be in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Site (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII).

However, access to the Site shall be unlimited to parties wishing only to traverse or pass through the site to carry out bona fide scientific research inland of the

Site. Such parties shall pass through the site as speedily as is reasonable and shall not disturb any part of the site. Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out. Research parties passing through the site as permitted above should also report their visits in the same way.

(vii) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Site;
- (b) land a helicopter within the Site;
- (c) overfly the Site by any aircraft below 250 m above the highest point;
- (d) anchor or moor any seacraft within the Site, except in accordance with the permit;
- (e) incinerate, bury or otherwise dispose of any human waste within the Site; all such waste must be removed from the Site;
- (f) leave depots of fuel, food or any other supplies within the Site, unless they are further required within the same season, at the end of which they must be removed;
- (g) erect any form of building additional to the existing refuge within the Site.

(viii) Pedestrian routes

None specified, but precautions must be taken to avoid disturbance to any breeding bird or seal or stand of vegetation, unless required as specified in the permit.

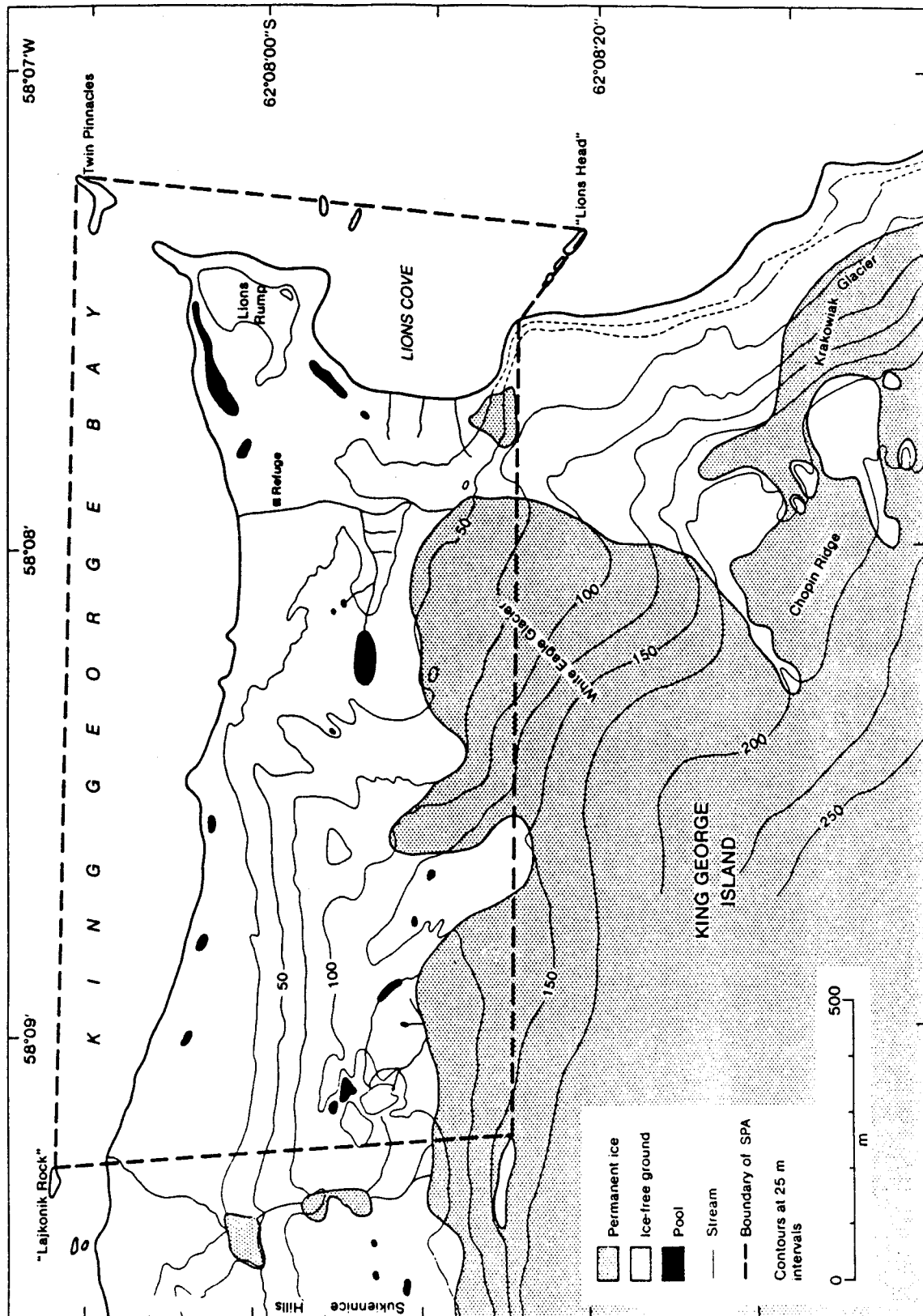
(ix) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Site.

(x) Inspection and maintenance

Inspection visits to the Site should be made at least once every five years to assess its state and to monitor significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc

Site of Special Scientific Interest No. 34



XVI - 3

ANTARCTIC PROTECTED AREA SYSTEM

New Marine Sites of Special Scientific Interest

The Representatives,

Recalling Article II of the Antarctic Treaty, Recommendations VII-3, VIII-3 and XIV-6;

Noting that Management Plans have been prepared and approved by the Scientific Committee on Antarctic Research (SCAR) for two Marine Sites of Special Scientific Interest;

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:

- No.35 Western Bransfield Strait, off Low Island, South Shetland Islands;
- No.36 East Dallmann Bay, off Brabant Island.

ANNEX 1 TO RECOMMENDATION XVI - 3

Marine Site of Special Scientific Interest No. 35 Western Bransfield Strait

1. Geographical Location

The Site is located off the southern shore of Low Island, western South Shetland Islands, between latitudes 63°20'S and 63°35'S and between longitudes 61°45'W and 62°30'W (with reference to U.S. Defense Mapping Agency Hydrographic/Topographic Center Chart No. 29121). A small portion of the Low Island landmass/ snowmass projects into the northern boundary of this domain; here the northern limit of the Site will be the associated intertidal zone. East, west, and south of the island the bottom slopes gently from the intertidal zone to depths of approximately 200 metres and then drops off rapidly near the boundary limits of the Site.

2. Management Plan

(i) Description of Site

The bottom consists of a sand/mud/cobbled-rock matrix and supports a rich benthos, e.g., numerous fish species, invertebrates (sponges, anemones, annelids, molluscs, crustaceans, asteroids, ophiuroids, echinoids, holothurioids, brachiopods, tunicates), and marine plants, in several distinct communities. Fish species commonly collected near Low Island include *Notothenia gibberifrons*, *Chaenocephalus aceratus*, *Harpagifer bispinis*, *Parachaenichthys charcoti*, *Trematomus newnesi*, and *N. coriiceps neglecta*. Species rarely found at Low Island include *Pseudochaenichthys georgianus*, *Champsocephalus gunnari*, and *Chionodraco rastrispinosus*. In addition, the Low Island shelf appears to be a major spawning ground for several fish species (e.g., *N. coriiceps neglecta* and the ice fish *C. aceratus*).

(ii) Reason for designation

The shallow shelf south of Low Island is one of only two known sites in the vicinity of Palmer Station that are suitable for bottom trawling for fish and other

benthic organisms. From an ecological standpoint, the Low Island site offers unique opportunities to study the composition, structure, and dynamics of several accessible marine communities. The Site, and in particular, its benthic fauna, is of exceptional scientific interest and requires long-term protection from potential harmful interference.

(iii) Outline of research

Studies of this area by scientists from Palmer Station began in the early 1970s. The current research programme uses fish from Low Island to study the biochemical adaptations that enable proteins to function at low temperatures and physiological adaptation of muscle and energy metabolism to low temperatures. These studies are conducted each year during the austral summer.

(iv) Date of expiry of designation

31 December 2001.

(v) Access points

Any boundary point may be used for entry. Free passage of ships through this Site is permitted.

(vi) Pedestrian and vehicular routes

Not applicable.

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

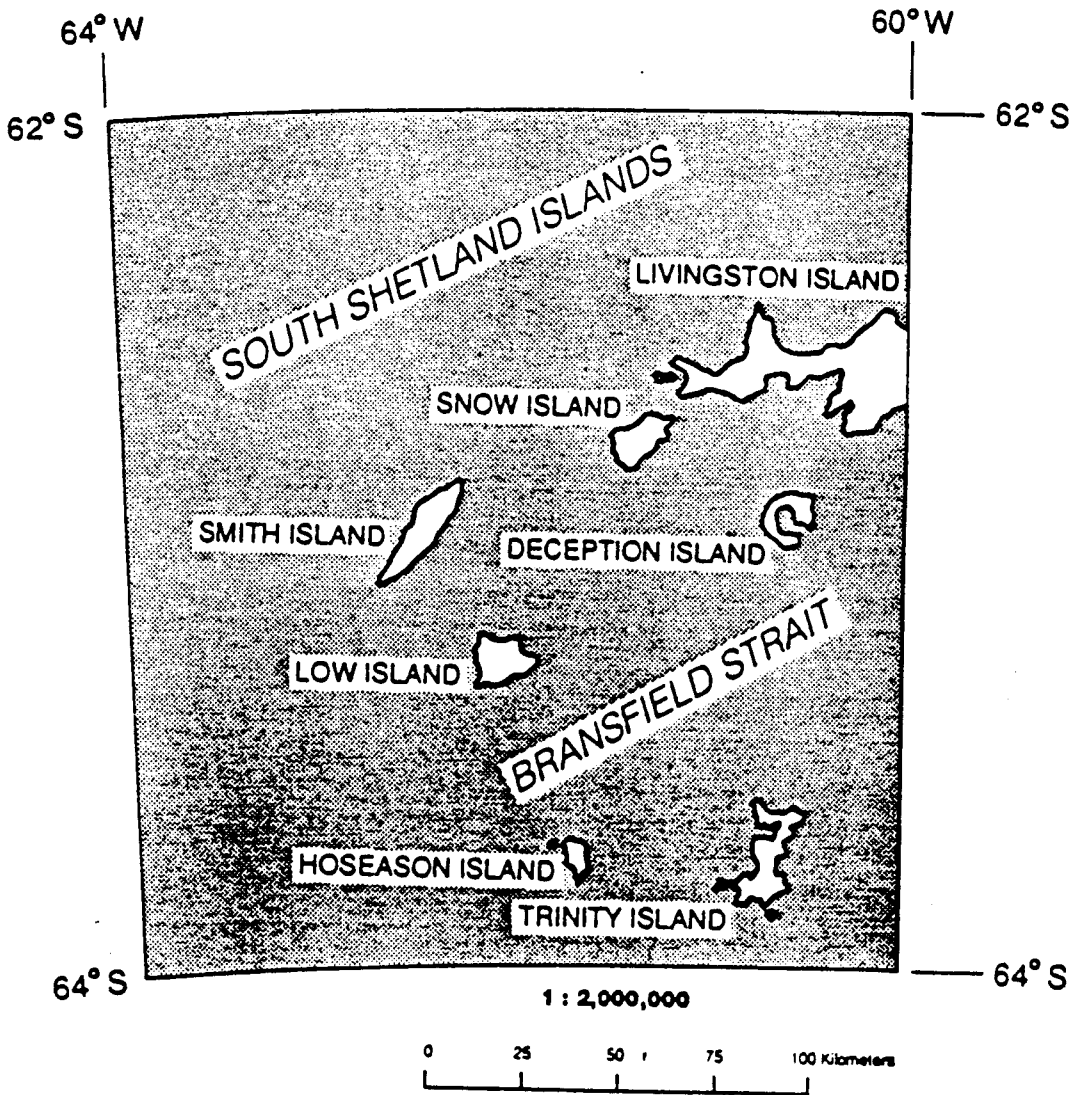
Ecological studies of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

(viii) Scientific sampling

Sampling of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

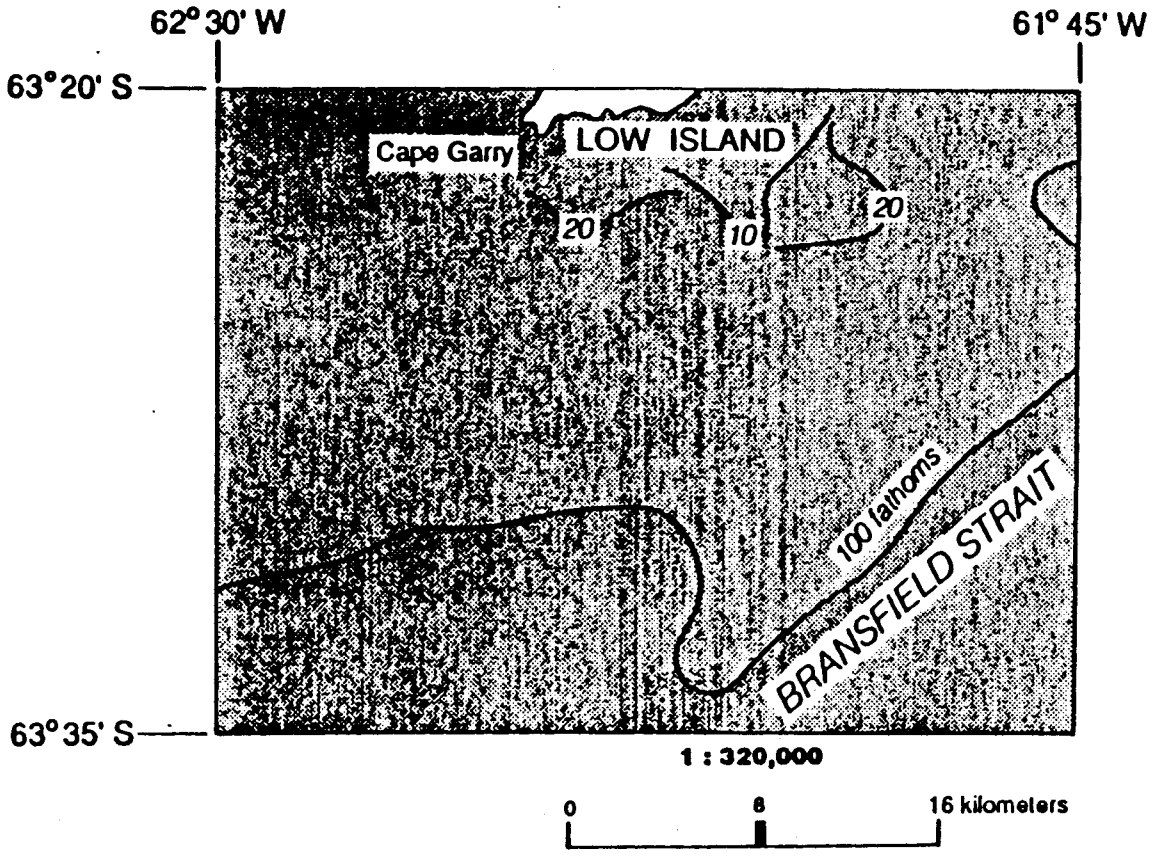
(ix) Other restraints

Ships should, where possible, avoid anchoring within the boundaries of the Site.



Marine Site of Special Scientific Interest No. 35

Marine Site of Special Scientific Interest No. 35



ANNEX 2 TO RECOMMENDATION XVI - 3

Marine Site of Special Scientific Interest No. 36 East Dallmann Bay

1. Geographical location

The Site is located in East Dallmann Bay off the western shore of Brabant Island, Palmer Archipelago, between latitudes 64°00'S and 64°20'S and from longitude 62°50'W east to the intertidal zone of the island's western shore (with reference to U.S. Defense Mapping Agency Hydrographic/Topographic Center, Chart No. 29121). West of Brabant Island the bottom forms a gently sloping shelf from the intertidal zone to depths of approximately 200 m and then drops off rapidly near the western boundary of the Site.

2. Management Plan

(i) Description of Site

The bottom consists of a sand/mud/cobbled-rock matrix. The benthic community includes numerous fish species, invertebrates (sponges, anemones, annelids, molluscs, crustaceans, asteroids, ophiuroids, echinoids, holothurioids, tunicates), and marine plants. Fish species commonly collected at East Dallmann Bay include *Notothenia gibberifrons*, *Chaenocephalus aceratus*, *Champsocephalus gunnari*, *Pseudochaenichthys georgianus*, and *Chionodraco rastrospinosus*. Specimens of *Trematomus newnesi* and *Notothenia coriiceps neglecta* are rare in this area.

(ii) Reason for designation

The shallow shelf west of East Dallmann Bay is one of only two known sites near Palmer Station that are suitable for bottom trawling for fish and other benthic organisms. The Site and, in particular, its benthic fauna are of exceptional scientific interest and require long-term protection from harmful interference.

(iii) Outline of research

Studies of this area by scientists from Palmer Station began in the early 1970s. The current research programme uses fish from East Dallmann Bay to study the biochemical adaptations that enable proteins to function at low temperatures and the physiological adaptation of muscle and energy metabolism to low temperatures.

(iv) Date of expiry of designation

31 December 2001.

(v) Access points

Any boundary point may be used for entry. Free passage of ships through this Site is permitted.

(vi) Pedestrian and vehicular routes

Not applicable.

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

Ecological studies of the composition, structure, and dynamics of the marine communities would not be harmful.

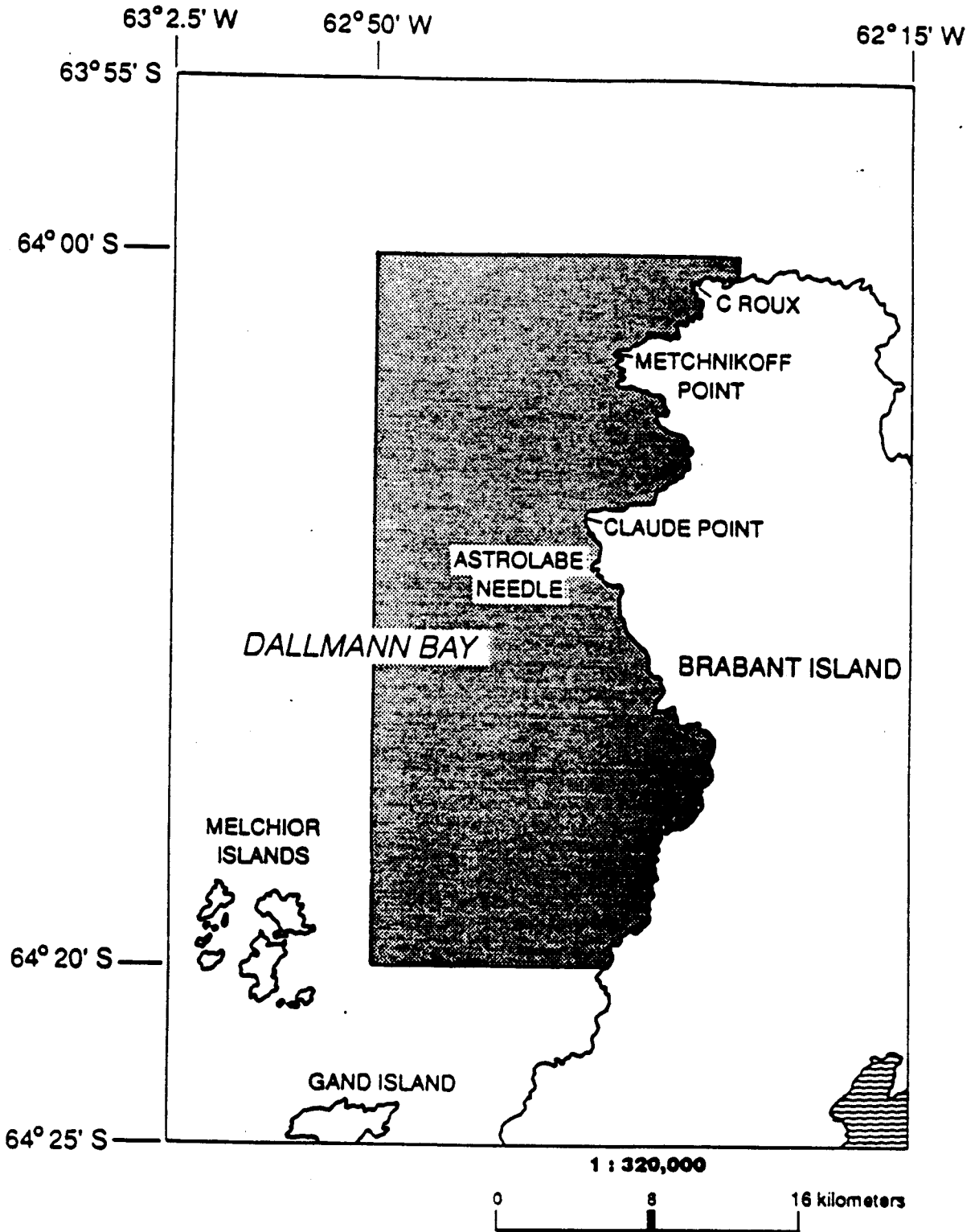
(viii) Scientific sampling

Sampling of the sea floor and its benthos by any method should be restricted to the minimum necessary for research activities and should be carried out with minimal disturbance of the Site.

(ix) Other restraints

Ships should, where possible, avoid anchoring within the boundaries of the Site.

Marine Site of Special Scientific Interest No. 36



XVI - 4

ANTARCTIC PROTECTED AREA SYSTEM

Specially Protected Areas

**Re-Designation of Site of Special Scientific Interest No. 30, Avian Island, Marguerite Bay, Antarctic Peninsula
as Specially Protected Area No. 21**

The Representatives,

Recalling Recommendation XV-8 and XV-9;

Noting that a Management Plan has been approved by the Scientific Committee on Antarctic Research (SCAR);

Considering that Avian Island, together with its littoral zone is unique in the Antarctic Peninsula region for its abundance and diversity of breeding seabirds, including Adélie Penguins, Blue-eyed Shags, Giant Petrels, Dominican Gulls, South Polar Skuas and Wilson's Petrels, and that the colony of Adélie Penguins is the largest on the Antarctic Peninsula, and that other species are at or near the southern limits of their breeding range, and that the island is vulnerable to visits by tourists, and uncontrolled personnel.

Recommend to their Governments that:

- (i) the designation of Avian Island as Site of Special Scientific Interest No. 30 under Recommendations VIII-3 and VIII-4 be terminated;
- (ii) the number 30 should not be used for another Site of Special Scientific Interest;
- (iii) the following area of outstanding ornithological interest be inserted in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964), along with the Management Plan accompanying the description of the said Specially Protected Area:

Specially Protected Area No. 21

Avian Island, Marguerite Bay, Antarctic Peninsula (67°46'S, 68°54'W).

ANNEX TO RECOMMENDATION XVI - 4

Specially Protected Area No. 21

Avian Island, North West Marguerite Bay, Antarctic Peninsula

1. Geographical location

Avian Island (67°46'S, 68°54'W) lies 0.25 km south of the south-west tip of Adelaide Island in north-west Marguerite Bay, south-west Antarctic Peninsula.

2. Management Plan

(i) Description of Area

The Area consists of Avian Island together with its littoral zone. It is 1.45 km long by 0.8 km at its widest (total area about 49 ha), and rises to just over 40 m altitude in the south. It is almost entirely ice-free in summer. There are several shallow melt pools, the largest being on the eastern raised beach terrace. There are two small dilapidated refuge huts, one near the north-west and the other near the mid-east shores of the island.

(ii) Reason for designation

The Area is unique in the Antarctic Peninsula region for its abundance and diversity of breeding seabirds, the most important of which are: Adélie penguins (*Pygoscelis adeliae*) about 36,000 pairs; blue-eyed shags (*Phalacrocorax atriceps*) about 670 pairs; southern giant petrels (*Macronectes giganteus*) about 250 pairs; Dominican gulls (*Larus dominicanus*) about 60 pairs (total adult birds about 200); skuas (*Catharacta maccormicki*) 30 pairs (total adult birds about 200); Wilson's storm petrels (*Oceanites oceanicus*) several hundred pairs. Several other birds are frequent visitors, breeding elsewhere in Marguerite Bay. Weddell seals (*Leptonychotes weddellii*) breed in small numbers around the shores of the island, and other species of seals occasionally come ashore, particularly fur seals (*Arctocephalus gazella*) in increasing numbers during summer. Bryophyte vegetation is sparse but nitrophilous lichen communities are well-developed;

vascular plants are absent. The giant petrel colony is the farthest south known breeding location and represents about a quarter of the population breeding on the entire Antarctic Peninsula. The blue-eyed shag colony is one of the largest known in the Antarctic and is very close to the southern limit of the species' breeding range; it represents about 85% of the total population breeding south of the Antarctic Circle. The Adélie penguin colony is the largest on the Antarctic Peninsula and contains a third of the total population breeding in the region.

(iii) *Date of designation and originator*

Originally designated as SSSI No. 30, November 1989, Recommendation XV-6, by UK; Proposed designation as SPA, July 1990, UK.

(iv) *Access points*

Access should be from the sea as close as possible to either of the refuge huts.

(v) *Entry permit requirement*

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) *Prohibitions*

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Area (over-snow vehicles used to visit the island must be left at the shoreline);
- (b) bring any dog into the Area;
- (c) land a helicopter within the Area;
- (d) overfly the Area by any aircraft below 250 m above the highest point;
- (e) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit;

- (f) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (g) leave depots of fuel, food, or any other supplies within the Area, except at the refuges, unless they are further required within the same season, at the end of which they must be removed.
- (h) erect any form of building within the Area, besides the restoration and maintenance of the two existing refuges.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird (especially giant petrels, which pedestrians should not approach closer than 100 m) or seal, unless required as specified in the permit.

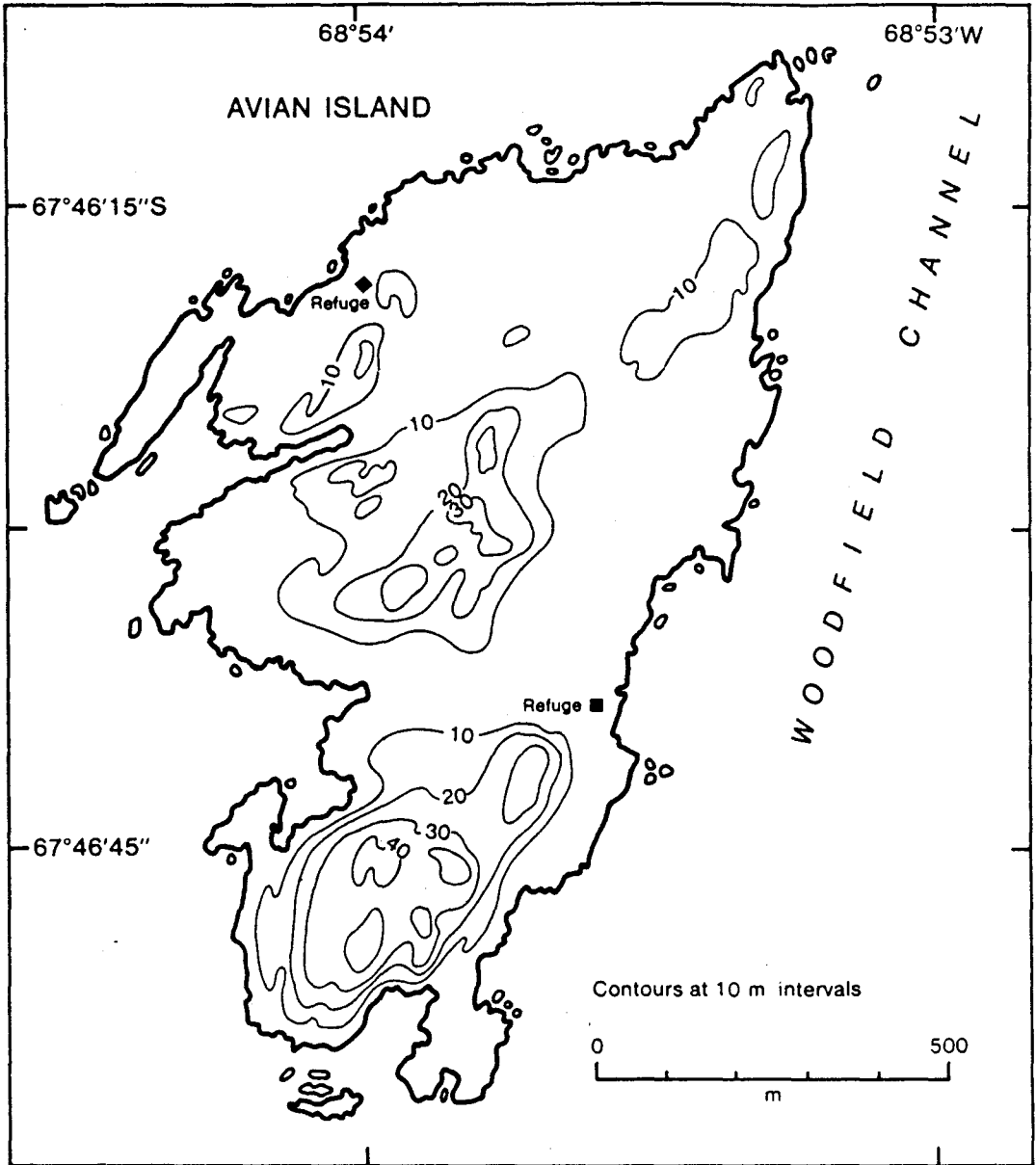
(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

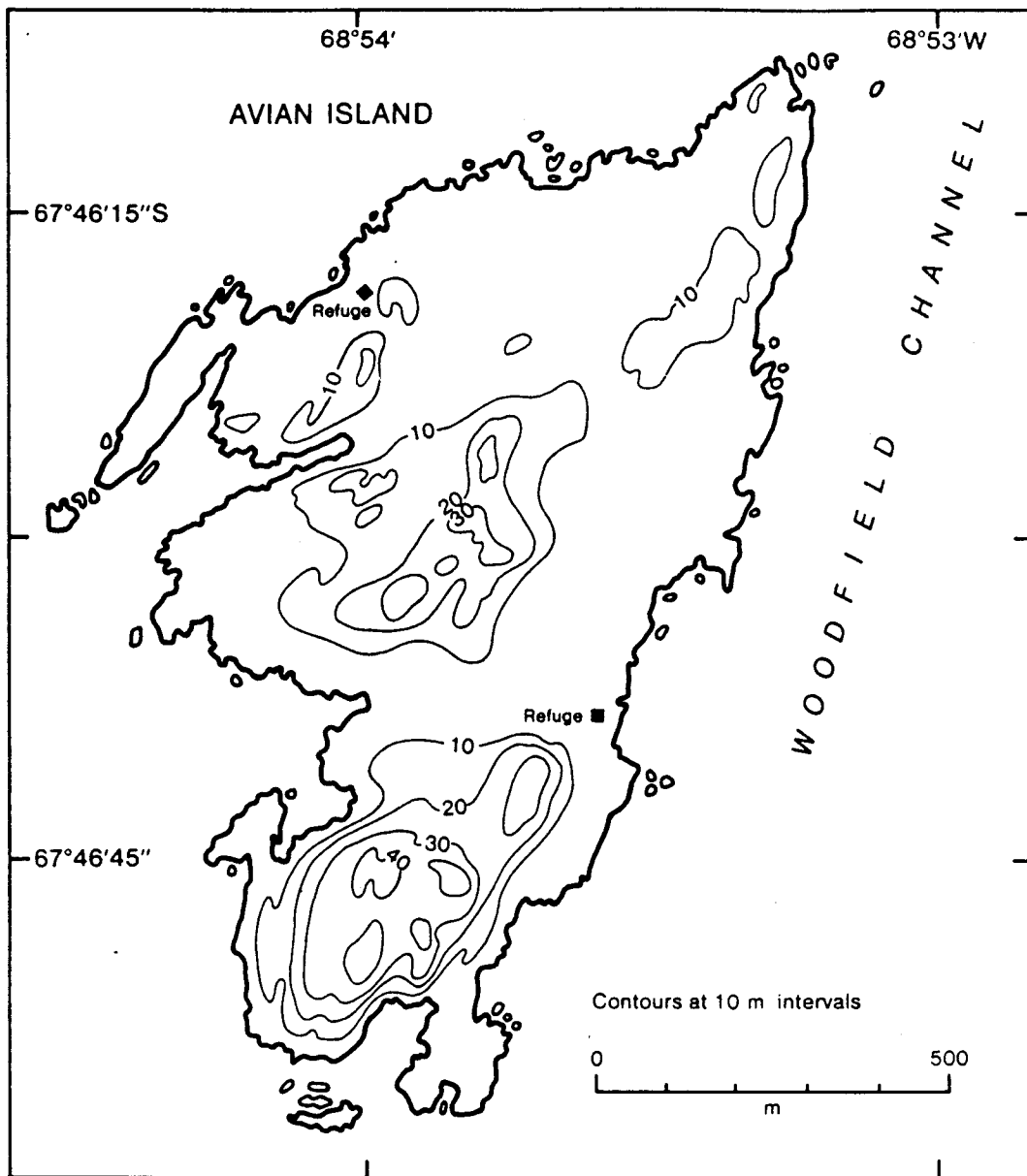
(ix) Inspection and maintenance

Inspection visits should be made to the Area at least once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc

Specially Protected Area No. 24



Specially Protected Area No. 24



XVI - 5

ANTARCTIC PROTECTED AREA SYSTEM

Sites of Special Scientific Interest: Interim Guidelines

Site of Special Scientific Interest No. 6,

Byers Peninsula, Livingston Island, South Shetland Islands

The Representatives,

Recalling Recommendation VIII-4 and the Management Plan for Site of Special Scientific Interest No. 6: Byers Peninsula, Livingston Island, South Shetland Islands, annexed thereto;

Noting that at its Twenty-First Meeting the Scientific Committee on Antarctic Research (SCAR), held at Sao Paulo, Brazil (24-27 July 1990), reviewed the Management Plan and scientific interest of SSSI No. 6: Byers Peninsula, Livingston Island, South Shetland Islands;

Recommend to their Governments that:

- (i) the Management Plan for Site of Special Scientific Interest No. 6: Byers Peninsula, Livingston Island, South Shetland Islands, annexed to Recommendation VIII-4 be terminated;
- (ii) they voluntarily take account of the Management Plan, annexed to this Recommendation, for Site No. 6: Byers Peninsula, Livingston Island, South Shetland Islands.

ANNEX TO RECOMMENDATION XVI - 5

Amendment to Site of Special Scientific Interest No. 6 Byers Peninsula, Livingston Island, South Shetland Islands

This Site currently comprises three areas of varying shape and size on Byers Peninsula designated solely for their sedimentary and palaeontological interest. However, the peninsula is also of considerable biological and archaeological importance.

1. **Geographical location**

Byers Peninsula is an extensive, largely ice-free area at the western end of Livingston Island, South Shetland Islands, centred on lat. 62°38'S, long. 61°05'W.

2. **Management Plan**

(i) Description of Site

The Site comprises the entire area of Byers Peninsula extending from the ice margin on the west side of Rotch Dome (to a point directly north of Stackpole Rocks) westwards to the west end of Ray Promontory. The littoral zone of the Peninsula is included within the Site. The nearby offshore islets and islands are not included in the Site. Most of the Site is low and undulating, below 100 m altitude, except for Ray Promontory which has a more rugged topography, rising to over 200 m at Penca Hill and Start Hill. Numerous volcanic plugs, lakes, pools and streams occur between Ray Promontory and the Rotch Dome ice field. Coastal areas often have broad beaches several hundred metres wide, with raised beaches behind.

(ii) Reason for designation

The fossils found in this area provide evidence of the former link between Antarctica and the other southern continents. A long-term palaeontological research programme has been in progress since the mid-1960s. It is important to protect these Jurassic and Cretaceous rocks from being used as building materials or taken as souvenirs.

The Site is of special biological importance. It has a sparse but diverse flora of both calcicolous and calcifuge plants and cyanobacteria associated with the lavas and basalts, respectively. Basaltic plugs are particularly well-vegetated. Several rare cryptogams and the two native vascular plants (*Colobanthus quitensis* and *Deschampsia antarctica*) occur at several sites. There are several coastal and inland lakes, the latter having a particularly important biota, including aquatic mosses, and serve as breeding sites for the midge *Parochlus steineni*, the only native winged insect in the Antarctic and with exceptionally restricted distribution. The only other Antarctic dipteran, the apterous *Belgica antarctica*, occurs in stands of wet moss.

The Site is also unique in possessing the greatest concentration of historical sites in Antarctica, namely the remains of refuges, together with contemporary artefacts, and shipwrecks of early nineteenth century sealing expeditions.

It is important that both the biological and archaeological features are also afforded protection.

(iii) Outline of research

A long-term geological and palaeontological research programme was established in 1964. The main objectives are the description of sediments and fossils found in this area. Botanical, zoological, limnological, ornithological and archaeological investigations have also been undertaken throughout the Site at various times since the late 1950s.

(iv) Date of expiry of designation

31 December 2001.

(v) Access points

None defined.

(vi) Pedestrian and vehicular routes

Vehicles should not enter the Site, except in an emergency. Helicopters should land only on unvegetated ground at least 500 m from any bird or seal concentrations, or freshwater bodies.

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

Scientific research other than archaeological, biological and geological should be kept to a minimum.

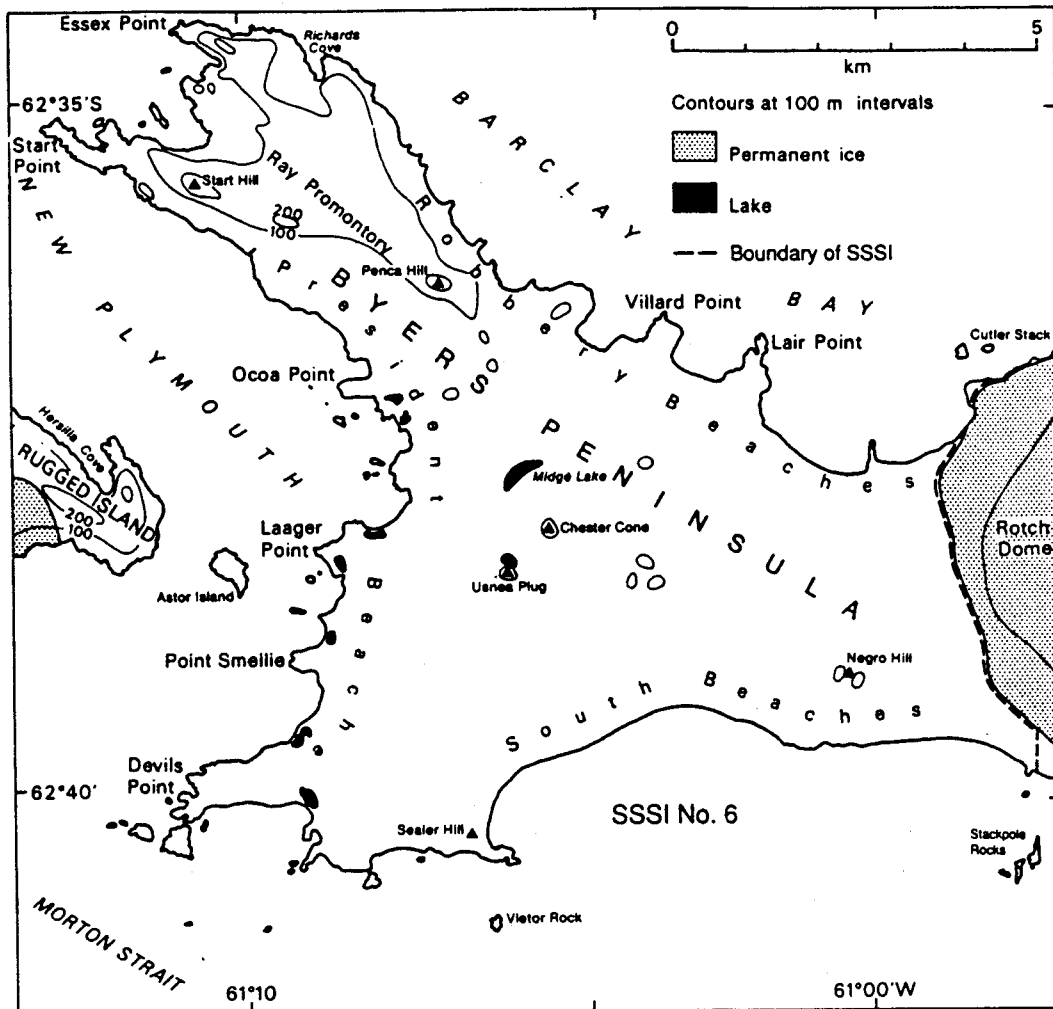
(viii) Scientific sampling

Samples of rocks or biological specimens should only be taken for compelling scientific purposes.

(ix) Other restraints

Buildings and other facilities should not be erected in the Site. All non-human waste should be removed from the Site. No combustible waste should be incinerated within the Site. There should be no interference of any sealers' refuges (huts, caves, etc) nor removal of any associated artefacts (including implements, timbers, fabrics, etc) from these features or from the beaches. No skeletal remains of any animal should be moved within or removed from the Site.

Site of Special Scientific Interest No. 6



XVI - 6

ANTARCTIC PROTECTED AREA SYSTEM

Specially Protected Areas

Revised Descriptions and Proposed Management Plans for Specially Protected Areas

The Representatives,

Recalling Recommendation XV-8 and XV-9;

Noting that revised Area Descriptions and proposed Management Plans have been approved by the Scientific Committee on Antarctic Research (SCAR);

Recommend to their Governments that for the Specially Protected Sites listed below:

- (i) the Descriptions inserted in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora be deleted;
- (ii) that the Descriptions and Management Plans of Specially Protected Areas, annexed to this Recommendation, be inserted in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora.

The Specially Protected Areas involved are:

- Site No. 8: Dion Islands, Marguerite Bay, Antarctic Peninsula
- Site No. 9: Green Island, Berthelot Islands, Antarctic Peninsula
- Site No. 13: Moe Island, South Orkney Islands
- Site No. 14: Lynch Island, South Orkney Islands
- Site No. 15: Southern Powell Island, and adjacent islands, South Orkney Islands
- Site No. 16: Coppermine Peninsula, Robert Island, South Shetland Islands
- Site No. 18: North Coronation Island, South Orkney Islands
- Site No. 19: Lagotellerie Island, Marguerite Bay, Antarctic Peninsula

ANNEX TO RECOMMENDATION XVI - 6

Management Plan for Specially Protected Area No. 8 Dion Islands, Marguerite Bay, Antarctic Peninsula

1. Geographical location

The Dion Islands (67°52'S, 68°43'W) are a small group of low-lying rocky islands lying about 13 km south of the southern end of Adelaide Island, in the north-western part of Marguerite Bay.

2. Management Plan

(i) Description of Area

The Area comprises all of the Dion Islands archipelago, which lie within an area of about 12 km², together with the intervening sea. The islands and islets are small, rocky and often precipitous, notably Emperor Island which is also the highest (46 m altitude). The main islands are the largest of the Courtier Islands group (c. 8 ha), Emperor Island (c. 5 ha) and the largest of the Consort Islands group (c. 3 ha). Low lying areas occur on the two largest islands. There are a few small permanent ice patches, but there are no streams or permanent pools.

(ii) Reason for designation

The Area possesses the only known breeding population of Emperor penguins (*Aptenodytes forsteri*) on the west side of the Antarctic Peninsula. It is situated on a low-lying raised beach and rocky headland in the south-eastern part of Emperor Island. It is also the most northerly and probably the smallest colony (annual numbers fluctuate between about 50 and 500 pairs), and is one of only two in which breeding occurs on land (see also SPA No. 1). It is also the most isolated Emperor colony, being about 2,500 km (by sea) from the nearest other known rookery. Other breeding birds within the Area include a small colony of Adélie penguins (*Pygoscelis adeliae*) near the Emperor penguin colony, and about 200 pairs of Blue-eyed shags (*Phalacrocorax atriceps*) on the precipitous north side of the same island.

(iii) Date of designation and originator

November 1966, Recommendation IV-8, by UK.

(iv) Access points

None specified, but access should be from the sea; landing on Emperor Island should be at least 100 m from the Emperor penguin colony or any non-breeding aggregations of these birds.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) land a helicopter within the Area;
- (b) overfly the Area by any aircraft below 250 m above the highest point;
- (c) use any of the Area's coves, bays or intervening water for anchoring or mooring seacraft, except in accordance with the permit;
- (d) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (f) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (g) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal, particularly Emperor penguins which pedestrians should not approach closer than 50 m, unless required as specified in the permit.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made at least once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

**Management Plan for Specially Protected Area No. 9
Green Island, Berthelot Islands, Antarctic Peninsula**

1. Geographical location

Green Island (65°19'S, 64°10'W) is a small island on the north side of the Berthelot Islands group, lying between the north-west side of Collins Bay and Grandidier Channel, about 3 km off the Graham Coast of the mid-west Antarctic Peninsula.

2. Management Plan

(i) Description of Area

The Area comprises all of Green Island, a small rocky island lying about 0.25 km to the north of the largest of the Berthelot Islands. It is about 500 m from north to south and 300 m from east to west, rising to a dome-shaped peak at about 80 m altitude. The island rises steeply on all sides, with high precipitous cliffs on the south and east sides. Along the north side is a gently sloping rock platform. There are several permanent snow patches with the largest occurring to the south and east of the summit. There are no streams or pools.

(ii) Reason for designation

Green Island is extensively vegetated on the north facing slopes and has especially well-developed continuous banks of moss turf formed by *Chorisodontium aciphyllum* and *Polytrichum alpestre* which, over much of their extent, overlie peat of more than 1 m in depth. Antarctic hair grass (*Deschampsia antarctica*) is frequent in small patches near the shag colony. The island has two important bird colonies. A large Blue-eyed shag (*Phalacrocorax atriceps*) colony with about 250 nests occurs on the steep, rocky north-west corner; this is one of the largest shag colonies on the Antarctic Peninsula. There are also large numbers of Brown skuas (*Catharacta lonnbergii*) and a few South Polar skuas (*C. maccormicki*) and hybrids, but only a few of the former are known to breed.

(iii) Date of designation and originator

November 1966, Recommendation IV-9, by UK.

(iv) Access points

None specified, but landings by boat or helicopter are easiest on the north side of the island.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) land a helicopter within the Area, except on the rock platform near sea level on the north side of the island;
- (b) overfly the Area by any aircraft below 250 m above the highest point;
- (c) use any of the Area's coves for anchoring or mooring seacraft, except in accordance with the permit;
- (d) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (e) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (f) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to cause minimal damage to the luxuriant moss banks and avoid disturbance of any breeding bird or seal, unless required as specified in the permit.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be at least once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Management Plan for Specially Protected Area No. 13
Moe Island, South Orkney Islands

1. Geographical location

Moe Island (60°45'S, 45°41'W) is a small island lying about 0.5 km off the south-west extremity of Signy Island, South Orkney Islands, from which it is separated by Fyr Channel.

2. Management Plan

(i) Description of Area

The Area is an irregularly shaped island about 1.8 km from north-east to south-west and 1 km from north-west to south-east. It rises precipitously on the north-eastern and south-eastern sides to Snipe Peak (226 m altitude); there is a subsidiary summit above South Point (102 m altitude) and lower hills on each of three promontories on the western side above Corral Point (92 m), Conroy Point (89 m) and Spaul Point (56 m). Small areas of permanent ice remain on the east and south facing slopes, with late lying snow patches on the steeply dipping western slopes. There are no streams or pools.

(ii) Reason for designation

Moe Island provides an excellent representative sample of the maritime Antarctic terrestrial ecosystem, with particularly well-developed stands of vegetation typical of the South Orkney Islands. The dominant plant communities are *Andreaea-Usnea* fellfield and banks of *Chorisodontium-Polytrichum* moss turf (the main stand of which is continuous over 5 ha, including large areas of eroded peat, and represents the largest known example of this community type in the Antarctic). The cryptogamic flora and arthropod fauna are diverse. There are five colonies of Chinstrap penguins (*Pygoscelis antarctica*) totalling about 11,000 pairs. Numerous other birds breed on the island, notably about 2,000 pairs of Cape petrels (*Daption capensis*) and large numbers of Antarctic prions (*Pachyptila desolata*). Weddell seals (*Leptonychotes weddellii*) and Leopard seals (*Hydrurga*

leptonyx) are sometimes frequent in the bays on the west side of the island. An increasing number of immature bull Fur seals (*Arctocephalus gazella*) come ashore on the north side of Landing Cove and are causing some damage to vegetation. However, the nature of the terrain should restrict the animals to this small headland.

Because of the long-established intensive experimental field research and the very extensive destruction of the lowland terrestrial and freshwater ecosystem caused by Fur seals on neighbouring Signy Island, Moe Island serves as an important control site with which future comparisons may be made with particular regard to biological and environmental change in the region.

(iii) *Date of designation and originator*

November 1966, Recommendation IV-13, by UK.

(iv) *Access points*

None specified, but preferably and most safely, from the sea at the north-east corner of Landing Cove.

(v) *Entry permit requirement*

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) *Prohibitions*

To avoid or minimise human impact it is prohibited to:

- (a) land a helicopter within the Area, except on the col between hill 89 m and the western slope of Snipe Peak, to the south of Landing Cove;

- (b) overfly the Area by any aircraft below 250 m above the highest point, except for access to the landing area specified in (a), which should be directly from the cove to the north or south avoiding any seabird colonies;
- (c) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit;
- (d) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (e) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (f) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit; in particular, stands of *Polytrichum-Chorisodontium* moss banks and areas of eroding peat should be avoided wherever possible.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made once every year to assess the state of the site and to monitor any significant biological or environmental changes, particularly with regard to increasing damage caused by Fur seals to the island's vegetation. Such visits should also be used to maintain boundary markers, notices, etc.

Management Plan for Specially Protected Area No. 14
Lynch Island, South Orkney Islands

1. Geographical location

Lynch Island (60°40'S, 45°38'W) is a small island situated at the east end of Marshall Bay, in the mid south coast of Coronation Island and directly to the north of Signy Island, South Orkney Islands.

2. Management Plan

(i) Description of Area

The Area is a small rocky island, c. 200 m from the south coast of Coronation Island, and about 500 m from east to west and 300 m from north to south, rising to a flat plateau with a maximum altitude of 33 m. On the south, east and west sides there are low cliffs up to 20 m high, and boulder-filled gullies, while the northern side has a low cliff below a rock terrace at about 5-8 m altitude. There are no streams or pools, and only a few small late-lying snow patches occur on the southern side of the island.

(ii) Reason for designation

Lynch Island supports one of the most extensive and dense stands of Antarctic hair grass (*Deschampsia antarctica*) known in the Treaty area. The only other Antarctic flowering plant, Antarctic pearlwort (*Colobanthus quitensis*), is also abundant. The cryptogamic vegetation is typical of the region, but several species of moss are unusually fertile here (notably *Polytrichum alpinum* and *Muelleriella crassifolia*). Beneath the grass swards on the moist north-facing slope a shallow loam-like earth resembling tundra brown soil has developed and contains a rich invertebrate fauna. Moist moss in rock crevices on the north side of the island harbours a rare terrestrial enchytraeid worm. Breeding birds are poorly represented, but most species of Antarctic seals are common around the island and occasionally ashore (particularly an increasing number of immature bull Fur seals, *Arctocephalus gazella*, which come ashore in summer).

(iii) *Date of designation and originator*

November 1966, Recommendation IV-14, by UK

(iv) *Access points*

Access should be from the sea, landing at a prominent low rocky promontory or the adjacent cove to the west, on the north side of the island.

(v) *Entry permit requirement*

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) *Prohibitions*

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Area;
- (b) land a helicopter within the Area;
- (c) overfly the Area by any aircraft below 250 m above the highest point;
- (d) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit;
- (e) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (f) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (g) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit; in particular, areas of *Deschampsia* and *Colobanthus* should be avoided wherever possible.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made at least once every year to assess the state of the site and to monitor any significant biological or environmental changes, particularly with regard to increasing damage caused by Fur seals to the island's grass-dominated communities. Such visits should also be used to maintain boundary markers, notices, etc.

Management Plan for Specially Protected Area No. 15
Southern Powell Island and adjacent islands, South Orkney Islands

1. Geographical location

Powell Island (60°45'S, 45°02'W) is the third largest of the South Orkney Islands, lying between Coronation Island to the west and Laurie Island to the east.

2. Management Plan

(i) Description of Area

The Area includes all of Powell Island south of the latitude of the southern summit of John Peaks (375 m altitude), together with Michelsen Island (a peninsula rising to 38 m altitude and separated from a long promontory at the south end of Powell Island by a low isthmus which floods at high tide) and adjacent unnamed rocky islets, Christoffersen Island (96 m altitude) to the west, Grey Island (43 m altitude) to the south, and Fredriksen Island (about 300 m altitude) to the east. All but southern Powell Island (Crutchley Ice Piedmont) are mainly ice-free in summer. All intervening sea is included within the Area.

(ii) Reason for designation

The Area is of exceptional biological interest, supporting limited stands of vegetation typical of biotically influenced coastal habitats of the region, and considerable populations of a diversity of bird and seal species. The bryophyte vegetation is best developed at the extreme north-west corner of the Area on south-west Powell Island, on Christoffersen Island and locally on northern Fredriksen Island; elsewhere there are extensive nitrophilous lichen communities on the rocks and cliffs. There are several biotically contaminated melt pools and streams, especially on the beach on the east side of southern Powell Island where Crutchley Ice Piedmont is receding.

Large numbers of penguins and petrels breed throughout the Area. There are about 50,000 breeding pairs of Chinstrap penguins (*Pygoscelis antarctica*) of which about 80% occur on Fredriksen Island, and about the same number of Adélie

penguins (*P. adeliae*) of which almost all occur in the southern Powell-Michelsen Island area. There are about 3,000 pairs of Gentoo penguins (*P. papua*) breeding on the southern promontory of Powell Island, Michelsen Island and Christoffersen Island. There are also a few pairs of Macaroni penguins (*Eudyptes chrysolophus*). Other breeding birds include Southern Giant petrels (*Macronectes giganteus*), Cape petrels (*Daption capensis*), Snow petrels (*Pagodroma nivea*), Wilson's storm petrels (*Oceanites oceanicus*), Blue-eyed shags (*Phalacrocorax atriceps*), Dominican gulls (*Larus dominicanus*), Antarctic terns (*Sterna vittata*), Brown skuas (*Catharacta lonnbergii*), Sheathbills (*Chionis alba*), and possibly Antarctic prions (*Pachyptila desolata*) and Black bellied storm petrels (*Fregatta tropica*). The isthmus between southern Powell Island and Michelsen Island is the longest-known breeding site in the Antarctic for Fur seals (*Arctocephalus gazella*) since their extermination in the nineteenth century. However, the small number of pups born annually has not increased substantially; a few pups are also born on suitable beaches on Fredriksen Island. Other seals are frequent on the beaches, e.g. Elephant seals (*Mirounga leonina*), Weddell seals (*Leptonychotes weddellii*) and Leopard seals (*Hydrurga leptonyx*), and Crabeater seals (*Lobodon carcinophagus*) are occasionally seen on ice floes within the Area.

(iii) Date of designation and originator

November 1966, Recommendation IV-15, by UK

(iv) Access points

None specified, but access should preferably be from the sea.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Area;
- (b) land a helicopter within the Area, except on the north-eastern part of the beach on the east side of the promontory of southern Powell Island providing there are no aggregations of wildlife, or on unvegetated areas in the north of Fredriksen Island, both to be at least 0.5 km from any bird or seal colonies or aggregations;
- (c) overfly the Area by any aircraft below 250 m above the highest point;
- (d) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit; ships may anchor only in the strait between Michelsen and Fredriksen Island;
- (e) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (f) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (g) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird (especially Giant petrels, which pedestrians should not approach closer than 100 m) or seal or stand of vegetation, unless required as specified in the permit.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made at least once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

**Management Plan for Specially Protected Area No. 16
Coppermine Peninsula, Robert Island, South Shetland Islands**

1. Geographical location

Coppermine Peninsula (62°23'S, 59°42'W) is situated on the west side of Robert Island, which lies between Nelson Island to the east and Greenwich Island to the west, midway along the South Shetland Islands archipelago.

2. Management Plan

(i) Description of Area

The Area comprises all land west of a north-south line across the isthmus between Carlota Cove and Coppermine Cove, 100 m west of a small group of Chilean refuge huts. The Peninsula is about 1.7 km from south-east to north-west and up to 0.6 km from north-east to south-west, and is largely surrounded by precipitous cliffs. There are three prominent low hills which reach a highest point at about 220 m. The easternmost lies close to the isthmus; there is a central hill composed of basaltic columns referred to as "Neptune's Cathedral", and the westernmost is situated above Fort William at the extreme west of the Peninsula. The isthmus (mainly outside the Area) is a 250 m wide raised beach reaching about 10 m altitude. Much of the higher ground is permanently ice covered. There are numerous small streams and pools in summer.

(ii) Reason for designation

Coppermine Peninsula is a biologically rich area with a diverse biota typical of the South Shetland Islands. It supports a wide range of plant communities with associated invertebrate fauna; the vertebrate fauna is also particularly well represented. The outstanding feature of the vegetation is a 1.5 ha closed carpet of the mosses *Calliergidium austro-stramineum*, *Calliergon sarmentosum* and *Drepanocladus uncinatus*, representing one of the largest continuous moss stands in the Antarctic. It overlies a thick layer of wet moss peat. Large stands of the foliose cyanobacterium *Nostoc commune* occur on moist slopes and in

depressions. A large number of bryophyte and lichen species occur within the Area, and Antarctic hair grass (*Deschampsia antarctica*) is frequent. A small colony of Chinstrap penguins (*Pygoscelis antarctica*) occurs at Fort William. There are about 30 small colonies of Southern Giant petrels (*Macronectes giganteus*). Other breeding species include about 2,000 nests of Wilson's storm petrels (*Oceanites oceanicus*) in at least 13 colonies, up to 1,000 Antarctic terns (*Sterna vittata*) in nine colonies, 300-400 Dominican gulls (*Larus dominicanus*) in ten colonies, and numerous Brown skuas (*Catharacta lonnbergii*). Seals are common around the peninsula and frequently haul out at the isthmus, notably Elephant seals (*Mirounga leonina*), Weddell seals (*Leptonychotes weddellii*) and increasingly large numbers of Fur seals (*Arctocephalus gazella*).

(iii) Date of designation and originator

November 1966, Recommendation IV-10, by Chile.

(iv) Access points

Access should be from the isthmus outside the Area by sea from Coppermine Cove or Carlota Cove, or by helicopter also to the east of the Area.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Area;
- (b) land a helicopter within the Area;
- (c) overfly the Area by any aircraft below 250 m above the highest point;

- (d) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit;
- (e) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (f) leave depots of fuel, food, or any other supplies within the Area, unless they are required within the same season, at the end of which they must be removed;
- (g) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird (especially Giant petrels, which pedestrians should not approach closer than 100 m) or seal or stand of vegetation (especially the extensive carpet of moss on the isthmus), unless required as specified in the permit.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made at least once every three years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

Management Plan for Specially Protected Area No. 18
North Coronation Island, South Orkney Islands

1. Geographical location

Coronation Island (60°38'S, 45°35'W) is the largest of the South Orkney Islands, situated at the west end of the archipelago.

2. Management Plan

(i) Description of Area

The Area lies on the central north side of Coronation Island. It is bounded to the east by Foul Point (60°32'S, 45°29'W) and to the west by Conception Point (60°31'S, 45°41'W); the entire area between these points, together with the intervening sea, is included in the site. The eastern boundary follows a precipitous ridge 6 km southward to a position at 2,500 ft (c. 750 m) altitude immediately to the west of Mount Nivea summit (60°35'S, 45°29'W), thence west-south-westward for 5.5 km to a position at 3,000 ft (c. 900 m) altitude to the north-east of Wave Peak summit (60°37'S, 45°36'W), and from there 4 km westward across the Brisbane Heights plateau, then 4 km north-north-west to an unnamed summit at 3,532 ft (c. 1,060 m) and north for 6 km to Conception Point. The summits of Mount Nivea and Wave Peak and the col known as High Stile are outside the Area. Ommanney Bay and the unnamed bay to the west are included within the Area, south of the boundary between Conception and Foul points (11.5 km).

(ii) Reason for designation

The Area embraces areas of coastal ice-free terrain (Conception, Prong and Foul Points) with large seabird colonies and lichen-dominated cliffs, and permanent icefields (two major glaciers and ice cliffs rising to the Brisbane Heights plateau) which provide an excellent representative area of a pristine ice environment near the northern limit of the maritime Antarctic and Antarctic Treaty area. The inter-related terrestrial, ice and marine components of the Area comprise an

integrated example of the coastal permanent ice and sublittoral ecosystems typical of the maritime Antarctic environment.

(iii) *Date of designation and originator*

October 1985, Recommendation XIII-10, by UK

(iv) *Access points*

None specified.

(v) *Entry permit requirement*

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) *Prohibitions*

To avoid or minimise human impact it is prohibited to:

- (a) drive any vehicle within the Area;
- (b) land a helicopter within 0.5 km of any bird or seal colonies or aggregations, or on any of the icefields;
- (c) overfly Conception, Prong or Foul Points below 250 m above their respective highest points;
- (d) use any of the Area's coves or bays for anchoring or mooring seacraft, except in accordance with the permit; ships must not enter the Area;
- (e) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste, including human waste in all ice-covered areas, must be removed from the Area;
- (f) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;

(g) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made no more than once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

**Management Plan for Specially Protected Area No. 19
Lagotellerie Island, Marguerite Bay, Antarctic Peninsula**

1. Geographical location

Lagotellerie Island (67°53'S, 67°24'W) lies about 3 km west of the southern part of Horseshoe Island, Marguerite Bay, south-west Antarctic Peninsula.

2. Management Plan

(i) Description of Area

Lagotellerie Island is about 2 km from east to west by about 1 km from north to south, and rises steeply to twin summits of c. 270 and 290 m altitude separated by a broad saddle. The north side of the island is largely snow-free with extensive low-lying ground. The south and east sides have precipitous cliffs up to 180 m high; much of the north side also has steep cliffs dissected by gullies and traversed by broad rock terraces. There are no permanent streams or pools.

(ii) Reason for designation

The island has a relatively diverse flora and luxuriant development of plant communities, representative of the southern maritime Antarctic region. The north side supports an abundance of Antarctic hair grass (*Deschampsia antarctica*) which on some of the terraces forms closed swards up to 10 m². Antarctic pearlwort (*Colobanthus quitensis*) is also frequent. Both species are close to the southern limit of their range. There is also a rich cryptogamic flora with well-developed communities containing several rare mosses and lichens. Beneath the closed grass and moss stands a rich loamy earth up to 25 cm deep has developed, with a rich invertebrate fauna and microbiota. The island is one of the southernmost sites for the apterous midge *Belgica antarctica*. There is a colony of about 1,000 pairs of Adélie penguins (*Pygoscelis adeliae*) at the south-east corner of the island. Here, there is also a small colony of about 30 pairs of Blue-eyed shags (*Phalacrocorax atriceps*), which is one of the farthest south breeding sites for the species. Brown and South Polar skuas (*Catharacti lonnbergii* and *C. maccormicki*) are abundant and several pairs of each nest on this island.

(iii) Date of designation and proposer nation

October 1985, Recommendation XIII-11, by UK

(iv) Access points

None specified.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) land a helicopter within the Area, except on the low-lying unvegetated ground in the mid north side of the island and on the saddle between the two peaks;
- (b) overfly the Area by any aircraft below 250 m above the highest point;
- (c) use any of the Area's coves for anchoring or mooring seacraft, except in accordance with the permit;
- (d) incinerate, bury or otherwise dispose of any non-human waste within the Area; all such waste must be removed from the Area;
- (e) leave depots of fuel, food, or any other supplies within the Area, unless they are further required within the same season, at the end of which they must be removed;
- (f) erect any form of building within the Area.

(vii) Pedestrian routes

None specified, but every precaution must be taken to avoid disturbance of any breeding bird or seal or stand of vegetation, unless required as specified in the permit.

(viii) Scientific research and sampling

All activities must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits to the Area should be made at least once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.

XVI - 7

ANTARCTIC PROTECTED AREA SYSTEM

Sites of Special Scientific Interest: Extension of Designation

The Representatives,

Recalling Recommendations VIII-3, VIII-4, XII-5 and XIII-7;

Noting that:

- (1) in accordance with paragraph 2 of Recommendation VIII-3, the Scientific Committee on Antarctic Research (SCAR), at its Twenty-First Meeting at Sao Paulo, Brazil (24-27 July 1990) had reviewed the eight Sites of Special Scientific Interest designated in Recommendations VIII-4, XIII-8 and XIV-5;
- (2) experience of the practical effect of the Management Plans for these sites has shown them to be an effective means of reducing the risks of harmful interference in areas of special scientific interest;
- (3) no changes to the Management Plans of these sites had been proposed by SCAR.

Recommend to their Governments that:

- (i) The date of expiry of designation of Sites:

No. 4 -	Cape Crozier, Ross Island;
No. 5 -	Fildes Peninsula, King George Island, South Shetland Islands;
No. 7 -	Haswell Island;
No. 10 -	Caughley Beach, Cape Bird, Ross Island;
No. 11 -	Tramway Ridge, Mt Erebus, Ross Island;
No. 12 -	Canada Glacier, Lake Fryxell, Taylor Valley, Victoria Land;
No. 18 -	North-West White Island, McMurdo Sound

be extended to 31 December 2001; and that,

(ii) The date of expiry of designation of Site:

No. 22 - Yukidori Valley, Langhovde, Lutzow - Holm Bay
be extended to 31 December 2003.

(iii) They use their best endeavours to ensure, in accordance with paragraphs 3 and 4 of Recommendation VIII-3, that the Management Plans of these Sites are observed.

XVI - 8

ANTARCTIC PROTECTED AREA SYSTEM

Specially Protected Area No. 22

Cryptogam Ridge; Mount Melbourne, Victoria Land

The Representatives,

Recalling Recommendations XV-8 and XV-9;

Noting that a Management Plan has been prepared and approved by the Scientific Committee on Antarctic Research (SCAR);

Considering that Cryptogam Ridge on the southern rim of the main summit crater of Mount Melbourne includes areas of geothermal activity which are ice-free and surrounded by numerous ice hummocks and scattered ice towers, and that the geothermal ground supports a unique community of bryophytes, algae and microbiota including very rare species, and that this fragile habitat is of exceptional biological interest and, to maintain its unique pristine state, should be afforded maximum protection from human influence;

Recommend to their Governments that the following area of outstanding scientific interest be inserted in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora, together with the annexed Management Plan:

Specially Protected Area No. 22

Cryptogam Ridge, Mount Melbourne, Victoria Land. Mount Melbourne (74°21'S, 164°42'E) lies between Wood Bay and Campbell Glacier, northern Victoria Land, on the western side of the Ross Sea.

ANNEX TO RECOMMENDATION XVI - 8

Specially Protected Area No. 22 Cryptogam Ridge, Mount Melbourne, Victoria Land

1. Geographical location

Mount Melbourne (74°21'S, 164°42'E) lies between Wood Bay and Campbell Glacier, northern Victoria Land, on the western side of the Ross Sea.

2. Management Plan

(i) Description of Area

The Area includes most of Cryptogam Ridge on the southern rim of the main summit crater (2,733 m altitude), and extends to about 1,200 m by 500 m. Geothermal activity occurs along about 300-400 m of the ridge and is marked by discontinuous areas of ice-free ground, surrounded by numerous ice hummocks up to 1 m high and scattered hollow ice towers up to several metres in diameter and 4 m high. The warm ice-free areas are mostly gently sloping with narrow terraces up to 1.5 m wide. More general details for the adjacent areas are given for the surrounding SSSI No. 24.

(ii) Reason for designation

The geothermal ground within the Area supports a unique community of bryophytes, algae and microbiota, including the only known occurrence in the Antarctic of the moss *Campylopus pyriformis* and the very rare continental occurrence of the liverwort *Cephaloziella exiliflora*, otherwise unknown above about 500 m elsewhere in the Antarctic. This site is comparable with the only other known high altitude geothermally influenced ice-free area near the summit of Mount Erebus. This fragile and sterile habitat is of exceptional biological interest and should be afforded maximum protection from human influence to maintain its unique pristine state.

(iii) Date of designation and originator

June 1990; New Zealand and Italy.

(iv) Access points

Access should be only from either end of Cryptogam Ridge and not from the ridge slopes.

(v) Entry permit requirement

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area (see Antarctic Treaty Agreed Measures for the Conservation of Antarctic Fauna and Flora, Article VIII). Details of the visit should be included in the national annual report of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) Prohibitions

To avoid or minimise human impact it is prohibited to:

- (a) enter the Area without wearing sterile protective overclothing and footwear, to be provided by the supporting national operator;
- (b) use any sampling or other equipment within the Area which has not been first sterilised using an acceptable method;
- (c) land a helicopter within the Area; helicopters should land near the summit of Mount Melbourne only at a specified point in or adjacent to the main crater, no closer than 200 m from the boundary of the Area;
- (d) incinerate, bury or otherwise dispose of any waste, including all human waste, within the Area; all such waste must be removed from the Area;
- (e) bring into the Area any fuel or food, or leave any form of other supplies within the Area, other than markers required for monitoring studies;
- (f) erect any form of building within the Area.

(vii) Pedestrian routes

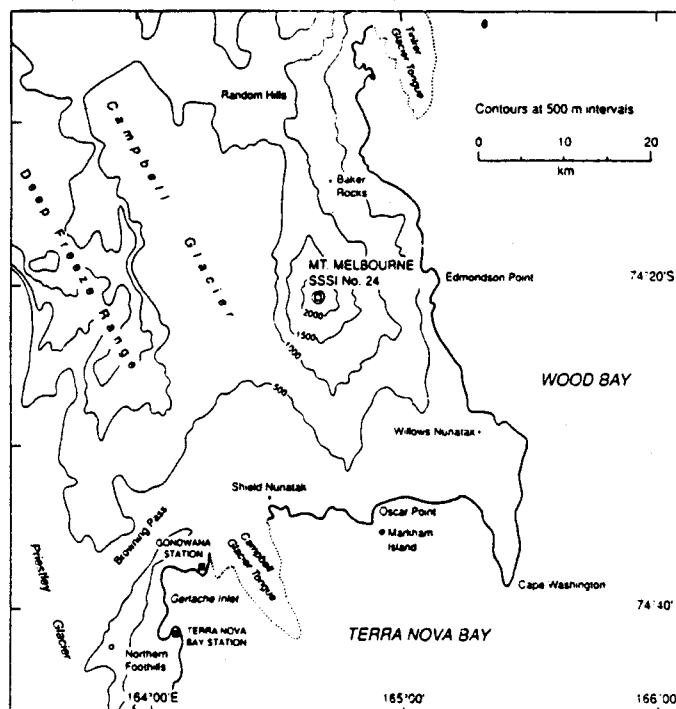
None specified, but pedestrians must not use the ridge crest as a way of access to parts of the surrounding SSSI. Extreme precaution must be taken to avoid disturbance of all ice-free ground or interference with ice structures within the Area, unless required as specified in the permit.

(viii) Scientific research and sampling

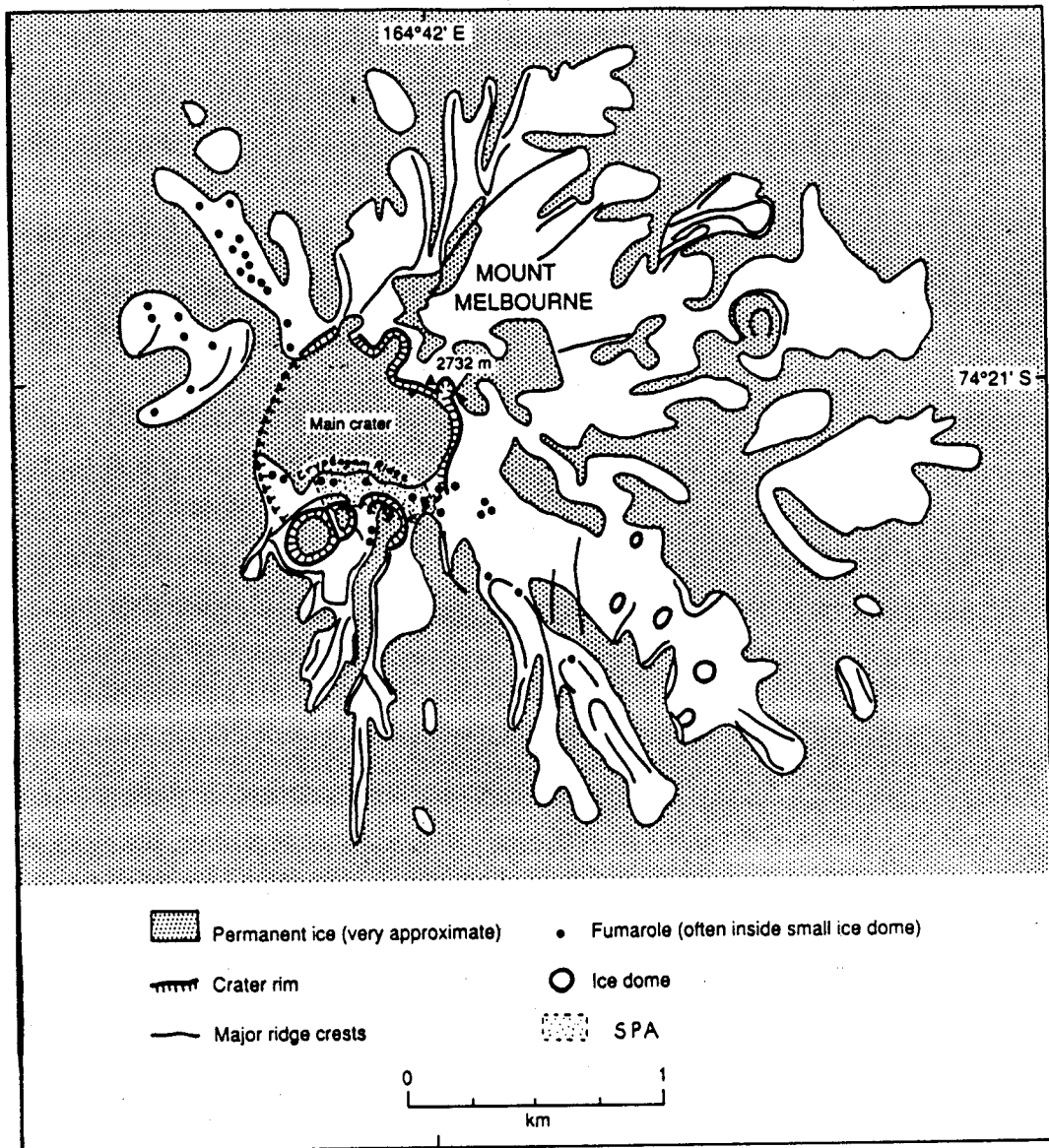
Where at all possible collections and general observations of geothermal soils and organisms should be made from positions outside the Area, unless directly related to the monitoring of Cryptogam Ridge; all activities within the Area must conform strictly with those specified in the permit to enter the Area.

(ix) Inspection and maintenance

Inspection visits should be made to the Area no more than once every five years to assess the state of the site and to monitor any significant biological or environmental changes. Other visits should be made as necessary to maintain boundary markers, notices, etc.



Specially Protected Area No. 22



XVI - 9

ANTARCTIC PROTECTED AREA SYSTEM

Specially Protected Area No. 23 Forlidas Pond and Davis Valley Ponds

The Representatives,

Recalling Recommendations XV-8 and XV-9;

Noting that a Management Plan has been prepared and approved by the Scientific Committee on Antarctic Research (SCAR);

Considering that the Area contains some of the most southerly freshwater ponds known in Antarctica containing plant life, and that these ponds and their immediate catchments should be protected as examples of unique near-pristine ecosystems which should be afforded maximum protection from human influence;

Recommend to their Governments that the following Area of outstanding scientific interest be inserted in Annex B, Specially Protected Areas, of the Agreed Measures for the Conservation of Antarctic Fauna and Flora, together with the annexed Management Plan:

Specially Protected Area No. 23

Forlidas Pond and Davis Valley Ponds, situated near the east end of the Dufek Massif at position 82°27'15"S, 51°21'W. The Area includes smaller ponds that occur along the ice margin at the northern edge of Davis Valley, a short distance east of Forlidas Pond.

ANNEX TO RECOMMENDATION XVI - 9

Specially Protected Area No. 23 Forlidas Pond and Davis Valley Ponds

1. Geographical location

Forlidas Pond, about 100 m in diameter, is situated near the east end of the Dufek Massif in a small unnamed dry valley about 1 km east of the northern edge of Forlidas Ridge and about 1 km northwest of Davis Valley. The unnamed dry valley is separated from Davis Valley by a northeast trending ridge several kilometres long. The position of Forlidas Pond is 82°27'15"S, 15°21'W. The Area includes smaller ponds that occur along the ice margin at the northern edge of Davis Valley, a short distance east of Forlidas Pond.

2. Management Plan

(i) Description of Area

The Area consists of two parts, shown on the attached map, about 500 m apart:

- A. All that area within 500 m of the centre of Forlidas Pond;
- B. All that area within a 500 m radius of several meltwater ponds at the ice margin along the northern edge of Davis Valley.

(ii) Reason for designation

The Area contains some of the most southerly freshwater ponds known in Antarctica containing plant life which would be threatened by possible contamination by human activity. The only visitors to Forlidas Pond have been geologists and geophysicists in 1957 and possibly one or two other parties. The ponds in Davis Valley were visited in 1978 by geologists. No botanists or zoologists have visited the Area. These ponds are located in SRA NO. 1, North Side of Dufek Massif, which could attract visitors such as scientists or tourists.

They should be protected as examples of unique near-pristine freshwater ecosystems and their catchments.

(iii) *Date of designation and originator*

October, 1991, USA.

(iv) *Access points*

None specified.

(v) *Entry permit requirements*

Entry into the Area is only in strict accordance with a current permit, issued by a Participating Government or its authorised representative, specifically for a compelling scientific purpose which cannot be served elsewhere, or for site inspection, and which will not jeopardise any aspect of the natural ecosystem or its biota within the Area. Details of visits should be included in national annual reports of Exchange of Information for the same Antarctic season in which the activities were carried out.

(vi) *Prohibitions*

None specified, but camping and the landing of helicopters should be avoided within 1 kilometre of the Area.

(vii) *Pedestrian routes*

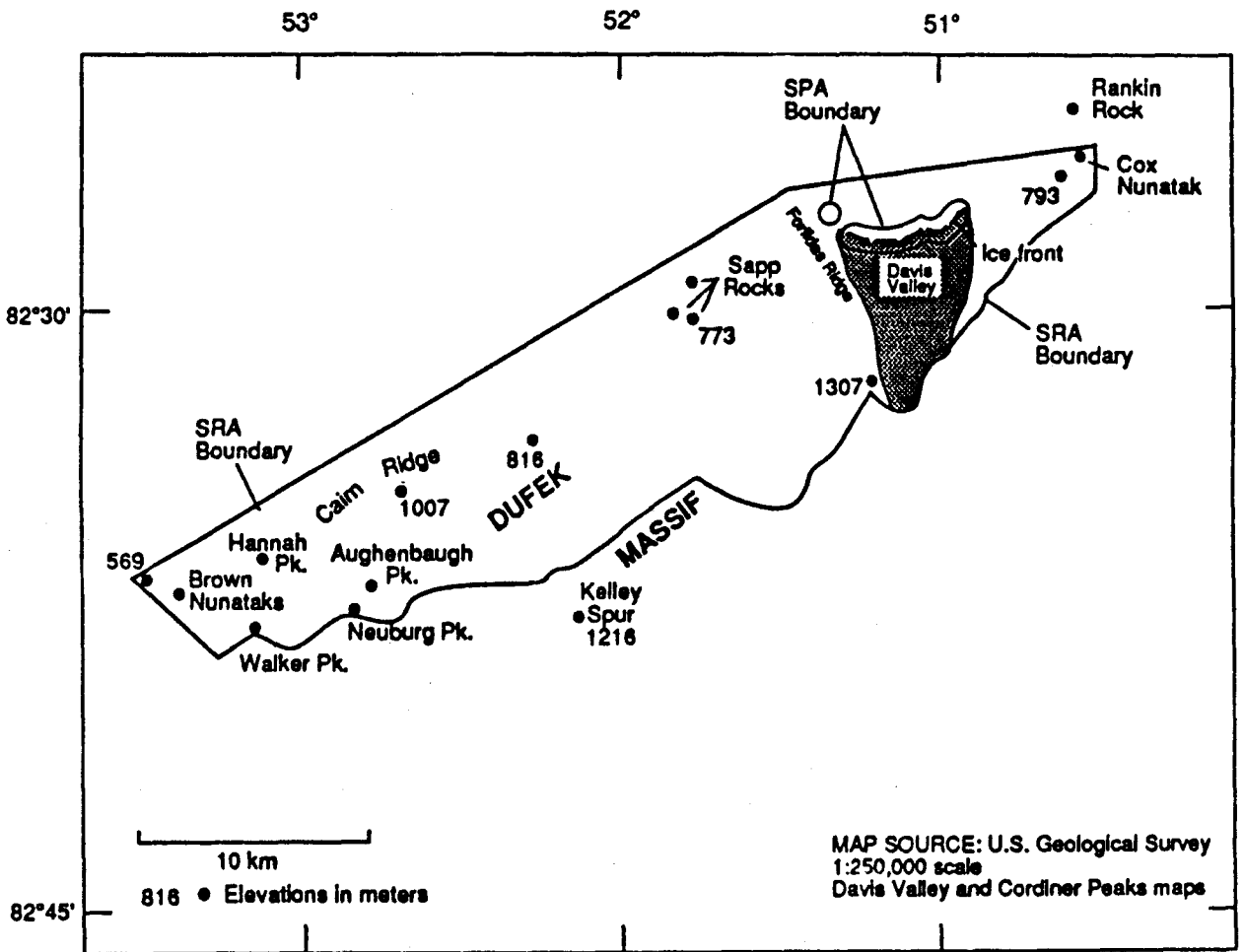
None specified, but every precaution must be taken to avoid disturbance of biota, soil, water, and periglacial features, unless required as specified in the permit.

(viii) *Scientific research and sampling*

Taking of samples of biota or soils should be done only for a compelling scientific purpose and must conform strictly with the activities specified in the permit to enter the Area.

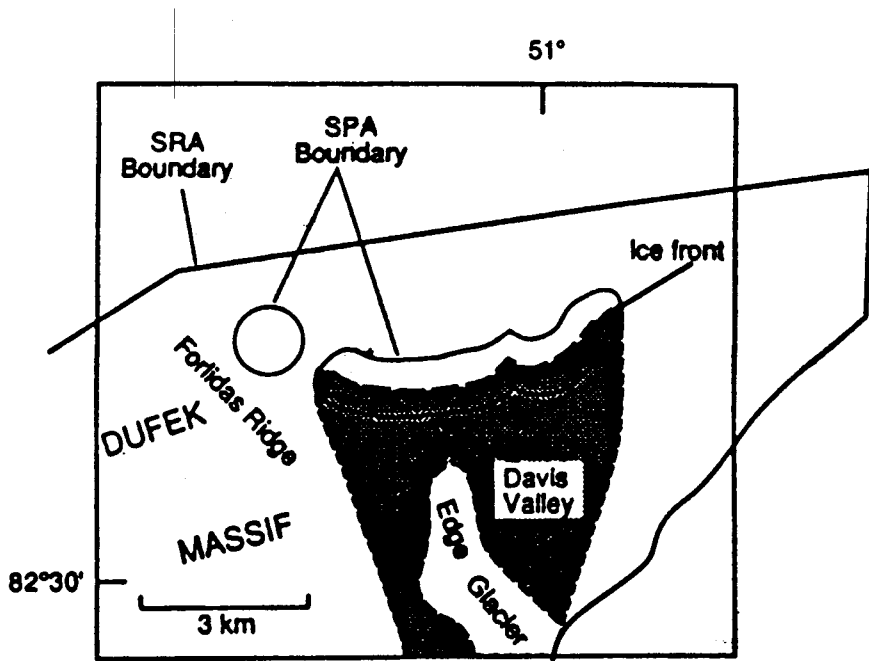
(ix) Inspection and maintenance

Inspection visits should be made when opportunity arises to assess the state of the Area and to monitor biological and environmental change, and to maintain boundary markers, notices, etc.



Specially Protected Area No. 23

Specially Protected Area No. 23



MAP SOURCE: U.S. Geological Survey
1:250,000 scale
Davis Valley map

XVI - 10

ANTARCTIC PROTECTED AREA SYSTEM: REVIEW OF THE SYSTEM

The Representatives,

Recalling Article VIII of the Agreed Measures for the Conservation of Antarctic Fauna and Flora and Recommendations V - 4, VI - 14, VII - 2, VII - 9, VIII - 3, XV - 10, XV - 11;

Recalling the Protocol on Environmental Protection to the Antarctic Treaty done at Madrid on 4th October 1991;

Recommend to their Governments that:

- (i) The Annex attached to this Recommendation form Annex V on Area Protection and Management to the Protocol on Environmental Protection to the Antarctic Treaty;
- (ii) The Annex become effective upon the date on which both the Protocol on Environmental Protection shall have entered into force and this Recommendation shall have been approved by all Consultative Parties entitled to attend the XVIth Antarctic Treaty Consultative Meeting.

ANNEX TO RECOMMENDATION XVI - 10

ANNEX V TO THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY AREA PROTECTION AND MANAGEMENT

ARTICLE 1 DEFINITIONS

For the purposes of this Annex:

- a) "appropriate authority" means any person or agency authorised by a Party to issue permits under this Annex;
- b) "permit" means a formal permission in writing issued by an appropriate authority;
- c) "Management Plan" means a plan to manage the activities and protect the special value or values in an Antarctic Specially Protected Area or an Antarctic Specially Managed Area.

ARTICLE 2 OBJECTIVES

For the purposes set out in this Annex, any area, including any marine area, may be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area. Activities in those Areas shall be prohibited, restricted or managed in accordance with Management Plans adopted under the provisions of this Annex.

ARTICLE 3 ANTARCTIC SPECIALLY PROTECTED AREAS

1. Any area, including any marine area, may be designated as an Antarctic Specially Protected Area to protect outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research.

2. Parties shall seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas:
 - (a) areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;
 - (b) representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;
 - (c) areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;
 - (d) the type locality or only known habitat of any species;
 - (e) areas of particular interest to ongoing or planned scientific research;
 - (f) examples of outstanding geological, glaciological or geomorphological features;
 - (g) areas of outstanding aesthetic and wilderness value;
 - (h) sites or monuments of recognised historic value; and
 - (i) such other areas as may be appropriate to protect the values set out in paragraph 1 above.

3. Specially Protected Areas and Sites of Special Scientific Interest designated as such by past Antarctic Treaty Consultative Meetings are hereby designated as Antarctic Specially Protected Areas and shall be renamed and renumbered accordingly.

4. Entry into an Antarctic Specially Protected Area shall be prohibited except in accordance with a permit issued under Article 7.

ARTICLE 4 ANTARCTIC SPECIALLY MANAGED AREAS

1. Any area, including any marine area, where activities are being conducted or may in the future be conducted, may be designated as an Antarctic Specially Managed Area to assist in the planning and co-ordination of activities, avoid possible conflicts, improve co-operation between Parties or minimise environmental impacts.

2. Antarctic Specially Managed Areas may include:
 - (a) areas where activities pose risks of mutual interference or cumulative environmental impacts; and
 - (b) sites or monuments of recognised historic value.
3. Entry into an Antarctic Specially Managed Area shall not require a permit.
4. Notwithstanding paragraph 3 above, an Antarctic Specially Managed Area may contain one or more Antarctic Specially Protected Areas, entry into which shall be prohibited except in accordance with a permit issued under Article 7.

ARTICLE 5 MANAGEMENT PLANS

1. Any Party, the Committee, the Scientific Committee for Antarctic Research or the Commission for the Conservation of Antarctic Marine Living Resources may propose an area for designation as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area by submitting a proposed Management Plan to the Antarctic Treaty Consultative Meeting.
2. The area proposed for designation shall be of sufficient size to protect the values for which the special protection or management is required.
3. Proposed Management Plans shall include, as appropriate:
 - (a) a description of the value or values for which special protection or management is required;
 - (b) a statement of the aims and objectives of the Management Plan for the protection or management of those values;
 - (c) management activities which are to be undertaken to protect the values for which special protection or management is required;
 - (d) a period of designation, if any;
 - (e) a description of the area, including:
 - (i) the geographical co-ordinates, boundary markers and natural features that delineate the area;

- (ii) access to the area by land, sea or air including marine approaches and anchorages, pedestrian and vehicular routes within the area, and aircraft routes and landing areas;
 - (iii) the location of structures, including scientific stations, research or refuge facilities, both within the area and near to it; and
 - (iv) the location in or near the area of other Antarctic Specially Protected Areas or Antarctic Specially Managed Areas designated under this Annex, or other protected areas designated in accordance with measures adopted under other components of the Antarctic Treaty system;
- (f) the identification of zones within the area, in which activities are to be prohibited, restricted or managed for the purpose of achieving the aims and objectives referred to in subparagraph (b) above;
- (g) maps and photographs that show clearly the boundary of the area in relation to surrounding features and key features within the area;
- (h) supporting documentation;
- (i) in respect of an area proposed for designation as an Antarctic Specially Protected Area, a clear description of the conditions under which permits may be granted by the appropriate authority regarding:
- (i) access to and movement within or over the area;
 - (ii) activities which are or may be conducted within the area, including restrictions on time and place;
 - (iii) the installation, modification, or removal of structures;
 - (iv) the location of field camps;
 - (v) restrictions on materials and organisms which may be brought into the area;
 - (vi) the taking of or harmful interference with native flora and fauna;
 - (vii) the collection or removal of anything not brought into the area by the permit-holder;
 - (viii) the disposal of waste;
 - (ix) measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met; and
 - (x) requirements for reports to be made to the appropriate authority regarding visits to the area;

- (j) in respect of an area proposed for designation as an Antarctic Specially Managed Area, a code of conduct regarding:
 - (i) access to and movement within or over the area;
 - (ii) activities which are or may be conducted within the area, including restrictions on time and place;
 - (iii) the installation, modification, or removal of structures;
 - (iv) the location of field camps;
 - (v) the taking of or harmful interference with native flora and fauna;
 - (vi) the collection or removal of anything not brought into the area by the visitor;
 - (vii) the disposal of waste; and
 - (viii) any requirements for reports to be made to the appropriate authority regarding visits to the area; and

- (k) provisions relating to the circumstances in which Parties should seek to exchange information in advance of activities which they propose to conduct.

ARTICLE 6 DESIGNATION PROCEDURES

1. Proposed Management Plans shall be forwarded to the Committee, the Scientific Committee on Antarctic Research and, as appropriate, to the Commission for the Conservation of Antarctic Marine Living Resources. In formulating its advice to the Antarctic Treaty Consultative Meeting, the Committee shall take into account any comments provided by the Scientific Committee on Antarctic Research and, as appropriate, by the Commission for the Conservation of Antarctic Marine Living Resources. Thereafter Management Plans may be approved by the Antarctic Treaty Consultative Parties by a measure adopted at an Antarctic Treaty Consultative Meeting in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the Plan shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.

2. Having regard to the provisions of Articles 4 and 5 of the Protocol, no marine area shall be designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area without the prior approval of the Commission for the Conservation of Antarctic Marine Living Resources.
3. Designation of an Antarctic Specially Protected Area or an Antarctic Specially Managed Area shall be for an indefinite period unless the Management Plan provides otherwise. A review of a Management Plan shall be initiated at least every five years. The Plan shall be updated as necessary.
4. Management Plans may be amended or revoked in accordance with paragraph 1 above.
5. Upon approval Management Plans shall be circulated promptly by the Depositary to all Parties. The Depositary shall maintain a record of all currently approved Management Plans.

ARTICLE 7 PERMITS

1. Each Party shall appoint an appropriate authority to issue permits to enter and engage in activities within an Antarctic Specially Protected Area in accordance with the requirements of the Management Plan relating to that Area. The permit shall be accompanied by the relevant sections of the Management Plan and shall specify the extent and location of the Area, the authorised activities and when, where and by whom the activities are authorised and any other conditions imposed by the Management Plan.
2. In the case of a Specially Protected Area designated as such by past Antarctic Treaty Consultative Meetings which does not have a Management Plan, the appropriate authority may issue a permit for a compelling scientific purpose which cannot be served elsewhere and which will not jeopardise the natural ecological system in that Area.
3. Each Party shall require a permit-holder to carry a copy of the permit while in the Antarctic Specially Protected Area concerned.

ARTICLE 8 HISTORIC SITES AND MONUMENTS

1. Sites or monuments of recognised historic value which have been designated as Antarctic Specially Protected Areas or Antarctic Specially Managed Areas, or which are located within such Areas, shall be listed as Historic Sites and Monuments.
2. Any Party may propose a site or monument of recognised historic value which has not been designated as an Antarctic Specially Protected Area or an Antarctic Specially Managed Area, or which is not located within such an Area, for listing as a Historic Site or Monument. The proposal for listing may be approved by the Antarctic Treaty Consultative Parties by a measure adopted at an Antarctic Treaty Consultative Meeting in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the proposal shall be deemed to have been approved 90 days after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or is unable to approve the measure.
3. Existing Historic Sites and Monuments which have been listed as such by previous Antarctic Treaty Consultative Meetings shall be included in the list of Historic Sites and Monuments under this Article.
4. Listed Historic Sites and Monuments shall not be damaged, removed or destroyed.
5. The list of Historic Sites and Monuments may be amended in accordance with paragraph 2 above. The Depositary shall maintain a list of current Historic Sites and Monuments.

ARTICLE 9 INFORMATION AND PUBLICITY

1. With a view to ensuring that all persons visiting or proposing to visit Antarctica understand and observe the provisions of this Annex, each Party shall make available information setting forth, in particular:

- (a) the location of Antarctic Specially Protected Areas and Antarctic Specially Managed Areas;
 - (b) listing and maps of those Areas;
 - (c) the Management Plans, including listings of prohibitions relevant to each Area;
 - (d) the location of Historic Sites and Monuments and any relevant prohibition or restriction.
2. Each Party shall ensure that the location and, if possible, the limits, of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are shown on its topographic maps, hydrographic charts and in other relevant publications.
 3. Parties shall co-operate to ensure that, where appropriate, the boundaries of Antarctic Specially Protected Areas, Antarctic Specially Managed Areas and Historic Sites and Monuments are suitably marked on the site.

ARTICLE 10 EXCHANGE OF INFORMATION

1. The Parties shall make arrangements for:
 - (a) collecting and exchanging records, including records of permits and reports of visits, including inspection visits, to Antarctic Specially Protected Areas and reports of inspection visits to Antarctic Specially Managed Areas;
 - (b) obtaining and exchanging information on any significant change or damage to any Antarctic Specially Managed Area, Antarctic Specially Protected Area or Historic Site or Monument; and
 - (c) establishing common forms in which records and information shall be submitted by Parties in accordance with paragraph 2 below.
2. Each Party shall inform the other Parties and the Committee before the end of November of each year of the number and nature of permits issued under this Annex in the preceding period of 1st July to 30th June.

3. Each Party conducting, funding or authorising research or other activities in Antarctic Specially Protected Areas or Antarctic Specially Managed Areas shall maintain a record of such activities and in the annual exchange of information in accordance with the Treaty shall provide summary descriptions of the activities conducted by persons subject to its jurisdiction in such areas in the preceding year.
4. Each Party shall inform the other Parties and the Committee before the end of November each year of measures it has taken to implement this Annex, including any site inspections and any steps it has taken to address instances of activities in contravention of the provisions of the approved Management Plan for an Antarctic Specially Protected Area or Antarctic Specially Managed Area.

ARTICLE 11 CASES OF EMERGENCY

1. The restrictions laid down and authorised by this Annex shall not apply in cases of emergency involving safety of human life or of ships, aircraft, or equipment and facilities of high value or the protection of the environment.
2. Notice of activities undertaken in cases of emergency shall be circulated immediately to all Parties and to the Committee.

ARTICLE 12 AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX(1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

2. Any amendment or modification of this Annex which becomes effective in accordance with paragraph 1 above shall thereafter become effective as to any other Party when notice of approval by it has been received by the Depositary.

XVI - 11

ANTARCTIC PROTECTED AREA SYSTEM

New Historic Sites and Monuments

The Representatives,

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

Recommend to their Governments that the following historic sites (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:

56. Waterboat Point, Danco Coast, Antarctic Peninsula (64°49'S, 62°52'W). The remains and immediate environs of the Waterboat Point hut, situated close to the unoccupied Chilean station, 'Presidente Gabriel González Videla'. The Waterboat Point hut, of which only the base of the boat, roots of door posts and an outline of the hut and extension still exist, was occupied by the UK two-man expedition of Bagshawe and Lester in 1921-22. This was, and indeed remains, the smallest expedition ever to overwinter in Antarctica.

57. Commemorative plaque at Yankee Bay, MacFarlane Strait, Greenwich Island, South Shetland Islands, near the Chilean refuge located at latitude 62°32'S and longitude 59°45'W, to the memory of Captain Robert MacFarlane, who in 1820 explored the Antarctic Peninsula Area in the brigantine *Dragón*.

58. Cairn with memorial plaque erected at Whalers' Bay, Deception Island, South Shetland Islands, in the vicinity of the whalers' cemetery (Historic Monument No.31) 62°59'S, 60°34'W, to honour captain Adolfus Amandus Andresen, Antarctic pioneer, who was first to establish a whaling operation at Deception Island in 1906.

59. A cairn on Half Moon Beach, Cape Shirreff, Livingston Island, South Shetland Islands, commemorating the officers, soldiers and seamen on board the San Telmo, which sank in September 1819; possibly the first people to live and die in the wastes of Antarctica.

XVI - 12

ACCESSIBILITY OF ANTARCTIC GEOPHYSICAL DATA

The Representatives,

Recalling that Article 3 of the Antarctic Treaty requires that scientific data be exchanged and made freely available;

Noting that Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty signed in Madrid on 4 October, 1991 prohibits any activity relating to mineral resources other than scientific research;

Aware that solid earth science disciplines have made major contributions to the understanding of our planet, and that such work has long been recognised as having global significance as applied inter alia to studies of plate tectonics and Antarctic glacial history including its effects on world climate;

Reiterating the importance of pursuing geological and geophysical research and their commitment to the disclosure, availability and timely publication of scientific results;

Recommend to their governments that the Seismic Data Library System (SDLS) approved by the SCAR Executive in 1991 and described in the report "A SCAR Seismic Data Library System for Co-operative Research" of the SCAR Group of Specialists on the Evolution of Cenozoic Paleoenvironments of the Southern High Latitudes (GSC) - Antarctic Offshore Acoustic Stratigraphy Project (ANTOSTRAT) be implemented. The SDLS requires inter alia that digital data from multichannel seismic reflection surveys be sent to the SDLS within four years of collection and eight years after collection to the World Data Centres or other archives for general dissemination.

XVI - 13

TOURISM AND NON-GOVERNMENTAL ACTIVITIES IN THE ANTARCTIC TREATY AREA

The Representatives,

Bearing in mind that the XVth Consultative Meeting agreed that a comprehensive review of tourism and non-governmental activities was required;

Noting that the Protocol on Environmental Protection to the Antarctic Treaty and its Annexes apply to tourist and non-governmental activities in Antarctica;

Recalling that the XIth Special Consultative Meeting asked the XVIth Consultative Meeting to address the issue of tourism and non-governmental activities;

Acknowledging that the Protocol constitutes the framework for further progress in Antarctic environmental protection;

Concerned about the possible effect of increased tourism and non-governmental activities in Antarctica;

Conscious of the need to ensure that the presence of tourists and other visitors in Antarctica be regulated so as to limit adverse impacts on the Antarctic environment and on Antarctic Science:

Recommend to their Governments that:

- (i) An informal meeting of the Parties be convened with a view to making proposals to the XVIIth Consultative Meeting on the question of a comprehensive regulation of tourist and non-governmental activities in Antarctica in accordance with the Protocol and taking into account the proposals made at the present XVIth Consultative Meeting, including proposals for a future Annex to the Protocol on Environmental Protection;

- (ii) Prior to the convening of that meeting and in order to ensure due preparation of its work, proposals should be prepared by them taking into account the list of issues stated below, which the meeting should, inter alia, primarily address:
- a) environmental issues
- implementation of the Protocol on Environmental Protection and its Annexes
 - number of tourists / carrying capacity
 - homologation of standards relating to vessels
 - permanent infrastructure for tourists
 - concentration / dispersal of tourist activities
 - access to unexplored areas;
- b) operational issues
- notification and expansion of information to be exchanged
 - system for granting permission to visit stations
 - self-sufficiency
 - insurance, including search and rescue insurance
 - information obligation of Parties
 - preparation and training of tour guides, and visitors' guides
 - examination of the need for specific kinds of control and monitoring
 - requirements for organisational procedures;
- (iii) The meeting shall begin its work in Venice on 9 November 1992;
- (iv) Representatives of the WTO, IUCN, IAATO, IMO, ASOC, PATA, SCAR and COMNAP be invited to attend the Meeting as observers.

PART III

DECLARATION BY CONTRACTING PARTIES

IN THE

THIRTIETH ANNIVERSARY YEAR

OF THE ENTRY INTO FORCE OF THE ANTARCTIC TREATY

DECLARATION

BY CONTRACTING PARTIES ON THE 30TH ANNIVERSARY OF THE ENTRY INTO FORCE OF THE ANTARCTIC TREATY

The Representatives of the Contracting Parties present in Bonn for the XVIth Antarctic Treaty Consultative Meeting:

Recalling the Antarctic Treaty, done at Washington on 1 December 1959 and which entered into force on 23 June 1961;

Reaffirming the objective of the Treaty to ensure, in the interest of all mankind, that Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord;

Noting with pleasure the continuing growth in the number of states acceding to the Treaty;

Conscious of the measures adopted pursuant to Article IX of the Treaty and the associated and separate conventions regulating their activities in Antarctica;

Welcoming the recent adoption in Madrid of the Protocol on Environmental Protection to the Antarctic Treaty which designates Antarctica as a natural reserve devoted to peace and science; and

Convinced of the continued effectiveness of the Antarctic Treaty for co-operation in Antarctica;

Declare that in the interests of all mankind Antarctica shall continue to be used exclusively for peaceful purposes and, in this regard, dedicate themselves to enhancing further their record of co-operation in a decade of international Antarctic scientific co-operation, 1991 to 2000, and record their achievements over the first thirty years of the Antarctic Treaty as set out in the Annex hereto.

ANNEX

30TH ANNIVERSARY OF THE ENTRY INTO FORCE OF THE ANTARCTIC TREATY

A unique agreement for a unique continent

The Antarctic Treaty has for thirty years united countries active in Antarctica in a uniquely successful agreement for the peaceful use of a continent. Scientific research conducted by the Treaty Parties, and the co-operation between them, have signalled to the world that nations can work together for their mutual benefit and for the benefit of international peace and co-operation. Antarctica is the largest unspoiled continent on Earth and the Treaty Parties have committed themselves to its study and to protecting its unique environment. The Antarctic Treaty provides an example to the world of how nations can successfully work together to preserve a major part of this planet, for the benefit of all mankind, as a zone of peace, where the environment is protected and science is pre-eminent.

Thirty years ago

The Antarctic Treaty was adopted by twelve governments in 1959 at a time when other parts of the world were subject to international tensions. The governments of Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Soviet Union, the United Kingdom and the United States, which had conducted scientific research in the Antarctic during the International Geophysical Year, were convinced that the unique opportunities that the Antarctic presented for science should not be jeopardised by disputes between them. The Treaty, which entered into force on 23 June 1961, ensures that in the interests of all mankind Antarctica shall continue forever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord.

A continent devoted to peace and co-operation

The Antarctic Treaty contains farsighted means to achieve its objectives. It prohibits measures of a military nature and prohibits nuclear explosions and the disposal of radioactive wastes. The Treaty guarantees freedom of scientific research and promotes international scientific co-operation. Article IV of the Treaty ensures that differing positions regarding claims to territorial sovereignty do not prevent Parties to the Treaty co-operating in the pursuit of the Treaty's objectives. It provides for exchange of detailed information about activities in Antarctica and allows observers complete freedom of access to all areas of Antarctica to ensure that the provisions of the Treaty are respected by Parties to it. The Treaty has, through these means, been outstandingly successful in achieving its objectives.

The strength of the Antarctic Treaty continues to grow and Parties to the Treaty now represent 70% of the world's population. Following their accession to the Treaty, Brazil, China, Ecuador, Finland, Germany, India, Italy, the Republic of Korea, the Netherlands, Peru, Poland, Spain, Sweden, and Uruguay have joined the original signatories as Consultative Parties. The Consultative Parties have welcomed the accession to the Treaty of Austria, Bulgaria, Canada, Colombia, Cuba, Czechoslovakia, the Democratic People's Republic of Korea, Denmark, Greece, Guatemala, Hungary, Papua New Guinea, Romania and Switzerland.

In accordance with Article IX of the Treaty representatives of the Parties meet regularly to exchange information and consult together on matters of common interest and to formulate and recommend to their governments measures in furtherance of the objectives of the Treaty. In 1964 the Parties adopted the Agreed Measures for the Conservation of Antarctic Fauna and Flora. Two separate conventions, the Convention for the Conservation of Antarctic Seals and the Convention on the Conservation of Antarctic Marine Living Resources, have subsequently entered into force.

Committed to protecting the environment

On 4 October 1991 the Parties adopted in Madrid the Protocol on Environmental Protection to the Antarctic Treaty. The Protocol, which is an integral part of the Antarctic Treaty, designates Antarctica as a natural reserve devoted to peace and science. It establishes a comprehensive legally binding regime for ensuring that activities

that parties undertake in Antarctica are consistent with protection of the Antarctic environment and its dependent and associated ecosystems.

Thirty-one Contracting Parties to the Antarctic Treaty signed the Protocol on the date of its adoption, and have committed themselves to taking the necessary steps to achieve the earliest possible entry into force of the Protocol. In the meantime, parties will ensure that as far as possible and, consistent with their legal and constitutional processes, the provisions of the Protocol and its Annexes are applied to their activities in Antarctica. Adoption of the Protocol in 1991 is a fitting tribute to the thirtieth anniversary of the Antarctic Treaty and signals the commitment of Parties to the future strength of the Treaty.

A priority to science

The Antarctic Treaty Parties are fully committed to scientific research in Antarctica which has been effectively co-ordinated by the Scientific Committee on Antarctic Research since the 1950s. Parties have long recognised the fundamental role that Antarctica plays in understanding global environmental processes and the unique opportunity it provides for research.

Antarctica provides an outstanding opportunity for the free conduct of science for the benefit of all mankind. It is a pristine laboratory, of world-wide significance, which has enabled research to detect and monitor global environmental phenomena such as the depletion of atmospheric ozone, global warming and sea level changes. Antarctic meteorological research has provided data essential to forecasting in the Southern Hemisphere. Glaciological research provides important information about the heat exchange budget and Antarctica's influence on weather and climate. Geological and geophysical research in Antarctica provides new insights into global geological history and the formation of continents. The earth's geomagnetic field makes Antarctica particularly well suited to the study of solar-terrestrial interactions and cosmic rays which travel from outside our galaxy. The extreme environment of the Antarctic provides unique opportunities to study the specialised adaptations of organisms with their environment, and biological research is providing data essential to informed decision-making about marine living resources. Human biology and medicine provides information on the physiological adaptation of man to extreme climates and isolation. The Treaty Parties have ensured that the results of these important research efforts are freely available to all mankind.

A natural reserve devoted to peace and science

The Antarctic Treaty Parties are proud of their achievements over the last thirty years and the example of peaceful co-operation that the Treaty provides to the rest of the world.

The determination of Parties to maintain and strengthen the Treaty and to protect Antarctica's environmental and scientific values is convincingly demonstrated in their adoption of the Protocol on Environmental Protection to the Antarctic Treaty and their decision to designate Antarctica as a natural reserve devoted to peace and science.

PART IV

ANNEXES

ANNEX A

OPENING ADDRESSES

I. Consultative Parties

- State Minister at the Federal Foreign Office of the Federal Republic of Germany
- Argentina
- Australia
- Belgium
- Brazil
- Chile
- China
- Ecuador
- Finland
- France
- India
- Italy
- Japan
- Republic of Korea
- The Netherlands
- New Zealand
- Norway
- Peru
- Poland
- South Africa
- Spain
- Sweden
- Union of Soviet Socialist Republics
- United Kingdom
- Uruguay

II. Non Consultative Parties

- Austria
- Bulgaria
- Denmark
- Greece
- Democratic People's Republic of Korea
- Switzerland

**OPENING ADDRESS BY MR HELMUT SCHÄFER,
MINISTER OF STATE AT THE FEDERAL FOREIGN OFFICE
OF THE FEDERAL REPUBLIC OF GERMANY**

Ladies and Gentlemen,

On behalf of the Federal Government I welcome you warmly to Bonn for the XVIth Consultative Meeting of the Contracting Parties to the Antarctic Treaty. I should like to greet in particular the representatives of Ecuador and the Netherlands, whose countries attained consultative status last year, and the delegates from Switzerland and Guatemala, both of which have acceded to the Antarctic Treaty since the last Consultative Meeting in 1989. We are equally pleased to welcome so many representatives of the international organisations participating in this conference. We appreciate your interest and your advice.

Foreign Minister Genscher would have liked to open the conference himself, but he is at present accompanying President von Weizsäcker on a state visit to Czechoslovakia and has therefore asked me to convey to all participants his cordial greetings and best wishes for a successful meeting.

Ladies and gentlemen,

it has become a truism that many developments and dangers arising out of man's way of life and affecting many people can only be overcome if all countries act together: armed conflicts between or within states, refugee flows, natural disasters, famine, large-scale emissions or climatic changes have become the subject of world domestic policy. It is in our common long-term interest that we join forces to tackle these problems.

Your discussions here over the next two weeks and your work at home are based on the same idea: shared responsibility for a continent and the desire to co-operate in the elaboration of the necessary legal framework for its protection.

Whereas the first discoverers to arrive in Antarctica perceived it as an icy waste promising no "benefit" for mankind, we are now aware of the significance of this continent for the world's climate and the world's seas, and we have to draw the consequences from this recognition.

The International Conference on Antarctic Research, which took place in Bremen the week before last and, for the first time, covered all aspects of research in this field, was an impressive demonstration of this increased importance. Since more and more people have been visiting, exploiting and leaving lasting traces on Antarctica, responsibility for the effects of these activities on the continent has accrued to us.

The 12 countries which signed the Antarctic Treaty in 1959 took the first step towards giving political expression and legal substance to this responsibility. Conscious of the common responsibility, a further 28 countries to date have declared their accession to the Antarctic Treaty with a view to playing their part in this huge task.

Ladies and gentlemen,

this year marks the thirtieth anniversary of the entry into force of the Antarctic Treaty. We are all aware of the significance of this anniversary. For the first time it is possible and permissible to review and to amend the Treaty. We must take stock and answer the following question honestly: what has the Treaty done for us and what more can we expect of it?

The Antarctic Treaty is limited to a few clear prohibitions and rules and is otherwise dependent upon co-operation among the Contracting Parties. These elements, particularly the consensus principle and the openness of the Antarctic Treaty to new members, have benefited the treaty system. Gradually the provisions of the Antarctic Treaty were supplemented by further agreements and a series of recommendations which were adopted in the course of the 15 Consultative Meetings. The viable system which thus evolved and the number of countries represented here today prove that the Antarctic Treaty has lost none of its appeal.

Ladies and gentlemen,

only last Friday the Protocol on Environmental Protection to the Antarctic Treaty was adopted. It will allow the Antarctic regime to be further developed with a view to future requirements in this central area. In successfully concluding the Special Consultative Meeting held for this purpose, the Contracting Parties to the Antarctic Treaty laid tracks in two ways:

The adoption of the Protocol restored consensus on the two key issues of Antarctic policy over the past few years:

1. the elaboration of a comprehensive system for the protection of the Antarctic environment, and
2. the question of whether and under what circumstances mineral resources extraction in the Antarctic could be considered.

The fact that agreement could be reached on such a comprehensive overall package within less than twelve months is a marvellous achievement. The new rules have altered the quality of the Antarctic regime in a fundamental, not to say revolutionary way. With the Protocol the contracting parties have created a code which must be adhered to by anyone wishing to engage in activities in Antarctica. Through this result they have proved that the Antarctic Treaty system is conducive to development and decision-making.

However, the new rules go far beyond the scope of Antarctic policy. They constitute a positive new element in international endeavours to protect man's natural environment. The Protocol to the Antarctic Treaty will provide guidelines for such endeavours. It is based on the comprehensive aim of countering as many as possible of the dangers to Antarctica's sensitive environment inherent in man's behaviour.

The Protocol also manifests the principle that prevention is better than cure. We hope that this positive impetus will spread to the work on the other great environmental problems of our age: the protection of the ozone layer, the reduction of the greenhouse effect, the protection of the tropical rain forests, and the maintenance of biodiversity. The new thinking which has manifested itself in the Antarctic is also needed in the other environmental fora.

One factor proved to be particularly helpful in ensuring the continuation of work on the Protocol on Environmental Protection to the Antarctic Treaty: public opinion. The pressure to achieve tangible results, particularly with regard to the mining ban, was an additional reason for the contracting parties to reach agreement quickly. We hope that the public will continue to follow our work with lively interest.

The Federal Government took note of the results of the XIth Special Consultative Meeting with great satisfaction - and, I would also say - with relief. Like a number of other states, Germany signed the Protocol immediately. We are resolved to play our part in ensuring that the Protocol enters into force as soon as possible. We believe that in the meantime all Contracting Parties should endeavour to adhere as closely as possible to the provisions contained in the Protocol.

Ladies and gentlemen,

my country is not one of the traditional Antarctic states. Indeed, through its geography and history it was not predestined for such a role. However, even long before we acceded to the Antarctic Treaty, there was considerable scientific interest within Germany in the Antarctic and in expeditions to that continent by German scientists. When in the '70s German research again focused more strongly on Antarctica, the Federal Government decided in 1979 to assume its share of political responsibility and decision-making with regard to Antarctica.

Thanks to German unification last year, our country's research potential has increased even further. This is an incentive for us to help strengthen and further develop the Antarctic system. The fact that your meeting is being held in Germany is an expression of this commitment. We have also responded positively to the wish expressed at the preparatory conference in April that the Antarctic states should co-ordinate their positions in the General Assembly and in the other UN bodies. We intend to fulfil this task in a spirit of partnership.

After the great upheaval of the last few years and months, we in Germany are particularly aware of the world's growing integration and interdependence. We experience daily the vital need for dialogue and the peaceful settlement of conflicts for the survival of mankind. In many spheres extreme demands are being made of those responsible to develop mechanisms which are conducive to decision-making and ensure consideration for the justified interests of those concerned. The states members of the Antarctic Treaty can justly be proud of belonging to a system that for 30 years has been an exemplary manifestation of harmonious coexistence, compromise and co-operation. I am sure that this will remain the case through your commitment to the aims and principles of the Antarctic Treaty.

Ladies and gentlemen, the provisional agenda which you drew up during the preparatory meeting in April contains a host of topics, some of them sensitive issues, which are likely to evoke lively debate. My wish for you is that this debate will produce results which will benefit Antarctica.

I now declare the XVIth Consultative Meeting of the Contracting Parties to the Antarctic Treaty open.

Thank you.

**OPENING ADDRESS BY MR JUAN EDUARDO FLEMING,
HEAD OF THE DELEGATION OF ARGENTINA**

Mr Chairman,

On behalf of the Argentine Delegation, I should like to congratulate you on your election as Chairman of this XVIth Antarctic Treaty Consultative Meeting.

I should also like, through you, to thank the Government of the Federal Republic of Germany for its generous hospitality and the magnificent organisation it has provided for our Meeting.

The Meeting now starting is particularly important, since it is taking place in the year in which the thirtieth anniversary of the entry into force of the Antarctic Treaty is being celebrated.

We must pay special tribute to those who, at the end of the 1950s, in a international climate very different from that at the present time, worked to reconcile the different approaches to the issue of Antarctica taken by the twelve countries involved in the negotiations.

Nevertheless, they succeeded in laying down rules and principles that have provided guidance for this forum and have been the inspiration behind the large number of Recommendations adopted by the Consultative Meetings and the separate agreements forming part of the Antarctic Treaty system.

However, the system does not only consist of instruments such as these. It also displays two outstanding features which account for its efficiency. These are, firstly, its decision-making process, which entails the direct participation and consent of all the Consultative Parties without any bureaucratic interference and, secondly, the excellent organisation of the Consultative Meetings by the successive host countries in respect not only of their formal aspects but of the series of diplomatic contacts they have to make before decisions are taken.

We are now witnessing with satisfaction a further outcome of this unique mechanism in the shape of the "Protocol on Environmental Protection to the Antarctic Treaty", which

is the product of the very intensive negotiations at the XIth Special Consultative Meeting. The Madrid Protocol meets the justifiable concerns voiced about the preservation of the Antarctic environment. The Argentine Republic not only signed the Protocol on 4 October, but has already started to apply it on an indicative basis in its activities in Antarctica. In addition, on the international scene, it has recently concluded with its sister Republic of Chile a Protocol on Environmental Protection in the Antarctic based on the Madrid Protocol's provisions.

Mr Chairman,

The Madrid Protocol and the successful organisation of this Consultative Meeting go to strengthen our conviction that it is not urgent to embark on any structural reform that would significantly alter the way in which we have gone about our work in the three decades the Antarctic Treaty has been in force.

However, this does not mean that we should be content with the achievements we have just described. New and old challenges are still waiting to be tackled. We should accordingly address ourselves to laying down rules dealing with issues like tourism and non-governmental activities which are already regulated, although not to a sufficient extent. We started to consider this issue at the XIth Special Consultative Meeting, with the aim of drawing up a legal instrument that could be included as an Annex to the Madrid Protocol. My Delegation considers that we should give added impetus to our efforts in that connection.

Mr Chairman,

In spite of the economic problems which my country has been facing, our activities in the Antarctic continue to be one of our priorities. We have given effect to several joint projects and co-operation agreements, including a bracketing agreement with the Kingdom of Spain and another with the Federal Republic of Germany for the construction of a science laboratory at the Jubany scientific station. We are also considering a joint project with the Netherlands for removing the remaining oil from the shipwrecked hull of the vessel "Bahia Paraiso", in which the prime focus is the environmental protection of the area.

Mr Chairman,

The Antarctic Treaty has come to represent an example for the international community not only on account of its intrinsic qualities but of the prudence and spirit of co-operation displayed by its Contracting Parties.

We feel sure that our nations will continue to work in partnership in fulfilling the lofty moral pledge to ensure peace and co-operation in the Antarctic and that the results achieved by this Meeting will again demonstrate the effectiveness of the system which we have succeeded in building up over these past thirty years.

**OPENING ADDRESS BY MR HUGH WYNDHAM,
HEAD OF THE DELEGATION OF AUSTRALIA**

Mr Chairman,

The Australian delegation is very happy to attend this Meeting in Bonn, whose pleasant setting offers an excellent location for our deliberations. We congratulate you on your election and look forward to working with you to make good progress on the important matters which are on the agenda.

The Australian delegation considers the XVIth ATCM to be one of major significance for the Treaty system, in terms both of looking at our major recent achievements and the range of activities now carried out under the Treaty and in looking to the future and considering new challenges and goals. The delegation sees 1991 as a major landmark on the Antarctic calendar, with the passing of thirty years since the Treaty's entry into force and the very remarkable negotiation of the Protocol on Environmental Protection to the Antarctic Treaty. Australia has devoted much energy to pursuing this outcome and is delighted with it. The Australian delegation applauds Treaty Parties for their efforts during the XIth Special Consultative Meeting, which culminated in the adoption of the Protocol and the Final Act of the Meeting. This now sets in train the establishment of a comprehensive regime for protecting the Antarctic environment.

The conclusion of the Protocol has been particularly valuable in sending a signal to the world that the Antarctic Treaty has been able to resolve a politically difficult issue and to attune itself to meeting international concern for the environment. It also establishes a constructive and positive environment in which to take on the significant work programme for the decade ahead.

The number of Treaty Parties has continued to grow since the XVth Consultative Meeting and Australia is pleased to welcome, as new Treaty Parties, Guatemala and Switzerland and, as new Consultative Parties, Ecuador and the Netherlands. Australia looks forward to co-operative relations with these new Parties.

In the past two years, Australia has continued its efforts to increase its own activities in Antarctic research: we have launched a new ice-capable ship, which has successfully completed its first season in Antarctica; we are continuing our new research programme

in the Prince Charles Mountains; and we have commissioned new satellite telecommunications channels to assist our Antarctic stations. We have continued to work to ensure that our programmes do not adversely affect the Antarctic environment and have made a substantial start to full implementation of the Environmental Impact Assessment procedures of the Protocol.

The fact that there are now 40 Parties to the Antarctic Treaty and a growing level of activity in Antarctica places increased physical pressures on the Antarctic continent, as well as pressures on the Treaty system in co-ordinating and exchanging information on the increasingly complex and dynamic Antarctic issues and activities. The volume of these activities, together with the substantial functions established under the Protocol, underline the need for effective and competent management by Treaty Parties. The increasing international and public interest in Antarctic environmental management now means that Treaty Parties must also clearly demonstrate to the wider community in an open and co-operative way the Treaty system's competence and professionalism in meeting its responsibilities under the Treaty and its attunement to international concerns and priorities in doing so.

The Australian delegation sees the XVIth Consultative Meeting as having several major emphases. While the XIth Special Consultative Meeting has now concluded there are still a number of important tasks associated with the implementation of the Protocol. It is important, in view of the high levels of activity in Antarctica and continued political and public interest, that the provisions of the Protocol should be implemented as far as possible pending its entry into force. We also attach priority to the further elaboration of the Protocol through the development of Annexes or measures relating to Protected Areas, liability and tourism.

Another major emphasis is the need for Treaty Parties to address the less political but nonetheless imperative tasks of management. Priorities include the improvement or fine-tuning of procedures for inspection and exchange of information and consideration of the adequacy of the Treaty's current organisational arrangements for handling an increasingly dynamic and complex system.

The other major emphasis falls in the category of public perception of the Treaty itself, in view of increased international and public interest in Antarctica and the fact that the Treaty continues to attract criticism from some quarters. While the Treaty recently received international commendation for its success in negotiating the Environment Protection Protocol, there is still a need to show the broader community that it can live

up to its new responsibilities by demonstrating increased competence, efficiency and, importantly, transparency in management. It is important that Treaty Parties continue to make available to the public documents relating to Treaty decisions and operations.

At the thirtieth anniversary of the Treaty's entry into force, it is opportune for Treaty Parties to take a more active role in publicising their considerable achievements under the Treaty and those under the Treaty system more generally. They must stress the already considerable efforts they have made to assist and accommodate a number of international agencies, including those associated with the UN, in pursuing their scientific research activities in Antarctica.

The Australian delegation also hopes that there will be satisfactory discussion of a number of items relating to scientific activities, and logistic and safety issues.

The Australian delegation intends to play a full and active part in the work of the Consultative Meeting. We look forward to co-operating with other delegations in an effort to achieve results at this auspicious thirtieth anniversary meeting, which, we are sure, will be closely watched by the international community. The Antarctic Treaty has worked well during the past thirty years, in keeping the continent free of tension and conflict and in establishing a truly co-operative international framework for the conduct of activities there. We feel sure it will be more than capable of meeting its new environmental responsibilities and those which may emerge in the next decade.

Through you, Mr Chairman, the Australian Delegation would wish to express its thanks to the Minister of State who opened this meeting and whose statement has clarified the central issues of our Meeting. His advice sets a constructive tone for beginning the important tasks and challenges facing us.

**OPENING ADDRESS BY MR PHILIPPE GAUTIER,
HEAD OF THE DELEGATION OF BELGIUM**

Mr Chairman,

First of all I would like to congratulate you on your election and convey my gratitude to the Government of the Federal Republic of Germany for agreeing to host the XVIth Antarctic Treaty Consultative Meeting. It gives us even greater pleasure to meet in Bonn since we have close links with the host country.

There is no doubt that this Meeting takes place under a favourable omen. Fortunately the growth crisis the system underwent in the last few years was overcome a few days ago with the adoption of the Protocol on Environmental Protection to the Antarctic Treaty. This fact certainly does not mean that we should now slow down our efforts.

Let me just mention some of the subjects which clearly deserve our attention:

- the creation of a secretariat;
- the regulation of Antarctic tourism;
- the elaboration of an Annex on liability to the Protocol on Environmental Protection;
- the revision of the Recommendations adopted so far by Consultative Meetings in the light of the regulations contained in the new Protocol.

The entry into force of the Protocol will occupy us during the next few years, and it is clear that the success of this enterprise depends on all Contracting Parties committing themselves to the ratification process without delay.

Mr Chairman,

The Belgian delegation hopes that our work will be fruitful and that it will be conducted in the same positive atmosphere that reigned at the adoption of the new instrument on the Antarctic environment.

Thank you, Mr Chairman.

**OPENING ADDRESS BY AMBASSADOR HENRIQUE R. VALLE,
HEAD OF THE DELEGATION OF BRAZIL**

Mr Chairman,

I wish to express at the outset the Brazilian delegation's gratitude to the German Government for its offer to host the XVIth Antarctic Treaty Consultative Meeting at this very pleasant city of Bonn, of whose people's hospitality we have been given ample demonstration since our arrival. I would also like to extend to you, Mr Ambassador, our warm congratulations for your election to preside over our work. We wish you good luck in the hard task that lies before you, while confident that your experience and professional qualities will be of great value in bringing this Meeting to a successful conclusion. Be assured, Mr Chairman, of the unfailing co-operation of the delegation of Brazil.

For the sixteenth time the Consultative Parties to the Antarctic Treaty meet on an ordinary basis since its entry into force to examine how best to promote the objectives of the Treaty and to strengthen co-operation in Antarctica, a continent dedicated to the cause of peace and to scientific research for the benefit of all mankind. This Meeting, however, holds a special significance, which lies in the fact that it coincides with the thirtieth anniversary of the entry into force of the Washington Treaty. For public opinion not well acquainted with the Treaty system 1991 was supposed to be the year when radical changes would be introduced into the Treaty, creating in many the expectation that if nothing were done the Treaty would cease to be in force. After thirty years the successful operation of the Antarctic Treaty and the adherence of all parties to its basic principles and objectives have proven that it need not be modified and that it is capable of coping with the evolution in international relations and with a growing participation in the Treaty, as well as with an increasing interest by mankind as a whole in Antarctic affairs and in the way in which we, the Treaty Parties, manage our co-operation in the sixth continent.

If on the one hand, Mr Chairman, the Antarctic Treaty has withstood the test of time, on the other, we have to acknowledge the fact that most of us have just signed in Madrid an instrument which will, when it becomes effective, as we believe will soon happen, alter in a fundamental way the functioning of the Antarctic Treaty system, without tampering with its fundamental premises and objectives. The Protocol on the Protection of the

Antarctic Environment strengthens the Treaty and supplements it in a field where it was needed to put into legally binding language a number of measures aimed at preventing damage to the Antarctic environment resulting from any activity carried out within the area of application of the Treaty.

The Brazilian Government is particularly pleased that we were able to conclude such an important instrument in less than twelve months. We have thus lived up to the expectations of a world public opinion increasingly sensitive to keeping our environment as safe as possible for the sake of future generations. The Madrid Protocol is a landmark in the history of the Antarctic Treaty and yet we should, starting from this Meeting, devote ourselves earnestly to the task of preparing its effective operation. The delegation of Brazil will spare no effort in that direction. In concluding the Madrid Protocol the Antarctic Treaty Parties have given a significant contribution to the endeavours of the international community to manage in a more rational and safer way the world's environment, endeavours which we hope will find a concrete expression at the United Nations Conference on Environment and Development, which my country will have the honour to host next year.

**OPENING ADDRESS BY AMBASSADOR OSCAR PINOCHET DE LA BARRA,
HEAD OF THE DELEGATION OF CHILE**

Mr Chairman,
Distinguished Delegates,

I believe that we have all realised that in 1991 the Antarctic system came of age.

At the end of the first thirty years, we were sorely tempted by the mineral exploitation issue, yet we found a way to emerge victorious and united from the trial.

The temptation was difficult to withstand, since reconciling science and business, peace and economic performance in the remote world of the Antarctic seemed so attractive a proposition.

When, after quietly considering the proposals in a spirit of self-criticism, we came to realise how dangerous they were for the environment and for peace, we reacted by taking appropriate steps at Viña del Mar and Madrid. Thus it was that the Protocol on Environmental Protection came into being in the very best Antarctic tradition of understanding and co-operation.

Will we be able to go on for the next thirty years on the basis of a consensus daily more difficult to reach, as the number of Parties to the Antarctic Treaty continues to grow?

Mr Chairman,

We have to ask ourselves what further difficulties the future holds in store for us.

Now that the pressures to engage in the economic exploitation of Antarctica have been taken off for at least the next fifty years, there is a risk of our going to the opposite extreme and of taking such overmeticulous care over ensuring its purity that it will become cut off from mankind.

We should not forget that Antarctica is a virgin continent that has been awaiting the arrival of human beings for millions of years.

What we are seeking is an Antarctic continent that is uncontaminated but is useful to mankind.

It is for this reason that we have to adopt a modern outlook to its joint administration.

We are no longer in the age of Scott and Amundsen or of Admiral Byrd, or even in 1959, when we signed the Antarctic Treaty.

Antarctica is now a continent with its own specific status, differing from all other parts of the world, in that it has laws of its own which we are all instrumental in creating through the practical experience we gain on the continent itself and which we subsequently codify at the Consultative Meetings.

We should certainly not be content with meetings which indulge in endless speech-making, nor with making Antarctica the business of bureaucrats. We have to be creative and daring, and show proof of imagination. We must not be afraid of innovating if we want Antarctica to continue to be in the vanguard of our age.

Mr Chairman,
Distinguished Delegates,

It has often been said that Antarctica is the most important laboratory available to scientists in our century.

Let us take steps to ensure that, in the 21st century, Antarctica will be the leading centre dedicated to rest and reflection and to the moral renewal of an overpopulated planet of ten to fifteen billion people.

Antarctica will be great only if we learn to think about it in commensurate terms.

**OPENING ADDRESS BY MR SUN LIN,
HEAD OF THE DELEGATION OF THE PEOPLE'S REPUBLIC OF CHINA**

Mr Chairman,

May I begin by expressing, on behalf of the Chinese delegation and that of my own, our heartfelt thanks to His Excellency, Mr Helmut Schäfer, for opening the XVIth Antarctic Treaty Consultative Meeting. My thanks will also go to the German Government for the excellent facilities it has provided for the meeting. My delegation warmly congratulates you on your assumption of the Chairmanship. I believe that the talent and skills you displayed at the previous meetings will help ensure success for this meeting. I would also like to take this opportunity to warmly welcome Guatemala for its accession to the Antarctic Treaty.

We have come again to Bonn with joy and excitement, for we have two major events to celebrate concerning the Antarctic Treaty system: one is the 30th anniversary of the coming into force of the Antarctic Treaty, and the other is the adoption by consensus of the Protocol on Environmental Protection to the Antarctic Treaty. I have no doubt that this Consultative Meeting, held in Bonn at this time, will not be an ordinary one, but one that will build on the past and open up the future.

To say that the Bonn Meeting will be one of building on the past is because we have every reason to be proud when reviewing the development of the Antarctic Treaty system over the past thirty years. The Antarctic Treaty system has succeeded in ensuring peace and tranquility in the Antarctic area and keeping it non-militarised and nuclear-free, which has contributed to the maintenance of peace and security in the world. The system has guaranteed freedom of scientific research and enhanced human knowledge and understanding of Antarctica and the earth as a whole. It has ensured rational use of Antarctica and worked to protect the unique ecological system and environment in the area. It has promoted and guaranteed political and scientific co-operation among all Parties aimed at realizing the purposes and objectives of the Antarctic Treaty, which no doubt provides a solid basis for the system to make the achievements as mentioned above. The Protocol on Environmental Protection to the Antarctic Treaty we signed in Madrid three days ago will further enhance the environmental protection in Antarctica. It has proven once again the great vitality of the Antarctic Treaty system at self-development and self-improvement. The achievements and experience accumulated by

the Treaty system over the past 30 years are a valuable treasure house to all the Contracting Parties which should be carried forward.

This Meeting is also one that opens up the future, because all the Contracting Parties are faced with new and greater challenges.

1. As mankind has gained a deeper understanding of Antarctica, it has given greater attention to the role of Antarctica in global change. The Antarctic Scientific Conference held recently in Bremen opened up new prospects for scientific research on Antarctica. It is our duty to discuss the ways and means of promoting greater contribution by Antarctic scientific research to human understanding of Antarctica and the world and to the protection of Antarctic and even the world environment.

2. Scientific research and the environmental protection of Antarctica are closely related. A sound protection of the Antarctic environment aims at using Antarctica for the benefit of mankind. That is to say, a sustainable use of Antarctica for the well-being of mankind depends on a good job to protect the Antarctic environment. The Protocol is seeking a better balance between these two objectives. We should work out some effective arrangements for the implementation of the Protocol.

3. Some agenda items of this meeting have to do with the operation of the Treaty system, as well as other important issues. We should try to meet the new requirements for the operation of the Treaty system under new circumstances by deliberating such items as the frequency of the Consultative Meetings, the establishment of permanent infrastructure, and the examination of recommendations, etc.

Mr Chairman,

It is my deep conviction that with the co-ordinated efforts of all delegations, the current Consultative Meeting will be a meeting of great significance.

Thank you, Mr Chairman.

**OPENING ADDRESS BY MR MIGUEL ESPINOSA,
HEAD OF THE DELEGATION OF ECUADOR**

Mr Chairman,

In extending to you the greetings of the Government of Ecuador, I should like to convey my thanks, through your goodself, to the Deputy Minister of Foreign Affairs of the Federal Republic of Germany for his words of welcome to my country in his opening address to this XVIth Antarctic Treaty Consultative Meeting, which is the first Ordinary Consultative Meeting Ecuador has attended in its capacity as a Consultative Party.

It is very significant that, as the 30th anniversary of the Antarctic Treaty comes to be commemorated, the Protocol on Environmental Protection and its Annexes should have been approved in Madrid, thereby furnishing yet another legal argument in favour of the conservation of Antarctica as a natural region that is unique in the world.

Mr Chairman,

Ecuador will complete all the domestic constitutional and legal procedures needed to give effect to the Protocol and will faithfully abide by the stipulations of the Protocol and its Annexes in the activities in which it engages in Antarctica.

I should like to congratulate you, Mr Chairman, on your election to your high office and, through you, to thank the Government of the Federal Republic of Germany for the courtesies shown to our Delegation.

Thank you.

**OPENING ADDRESS BY AMBASSADOR ARTO TANNER,
HEAD 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 XVIth Antarctic Treaty Consultative Meeting. I am sure that under your able guidance, this Meeting will achieve its aims. I would also like to express my thanks to the German Government for organizing very efficiently both this Meeting and the Preparatory Meeting last April.

Mr Chairman,

The Antarctic Treaty system has made an important contribution in maintaining peace and security, in full demilitarisation, freezing territorial claims and in securing freedom of scientific research and co-operation on the continent.

Now that the Protocol on Environmental Protection to the Antarctic Treaty has been signed by most of the Parties to the Treaty, among others Finland, the Antarctic Treaty system has received an important addition. The fundamental importance of environment issues there is now generally recognised.

Especially the prohibition of mineral resource activities meets the aims of the Finnish government concerning the development of the Antarctic Treaty system. But we see this Protocol also in a wider perspective. It is the first general agreement on environment covering a large international area, a continent not permanently populated and also otherwise unique in character compared to other continents. These facts made certainly easier to reach agreement not in any way underestimating the work and expertise needed. This Protocol that will be globally accepted, shows the way to similar extensive arrangements. The Antarctic co-operation has achieved a major international breakthrough in the increasingly important environment protection.

Mr Chairman,

The agenda drawn up for this XVIth Meeting by the Preparatory Meeting last April contains environmental and other issues in a balanced manner. It shows however also a

noticeable increase in the workload of the Consultative Meeting caused partly by the growth in the Antarctic Treaty system. Therefore the need of some kind of intersessional arrangement must be considered in a positive way.

Mr Chairman,

May I now turn to the Antarctic research activities carried out by Finland. Soon after Finland became Consultative Party to the Antarctic Treaty at the Paris Meeting a Finnish expedition was carried out by R/V ARANDA. The expedition was successful.

For the coming season Finland has signed a commercial contract with the Soviet Arctic and Antarctic Research Institute concerning the transportation of the expeditions of the Nordic countries, Finland, Norway and Sweden to their Antarctic stations Aboa, Troll and Wasa in Dronning Maud Land. The three Nordic countries have an agreement to arrange the transportations for their expeditions alternately in rotation. Each country has its own research programme.

As a bilateral scientific co-operation Finnish-Argentinian ozone sounding will be continued at Argentinian Antarctic station Marambio. Ozone soundings are carried out in Finland at the same northern latitude as the Finnish-Argentinian soundings in Antarctica.

We consider the co-operation in logistics and research activities in such severe and sensitive conditions as in Antarctica very important.

Mr Chairman,

In this context I also would like to add some information concerning the results of the first ministerial meeting on Protection of the Arctic Environment, held in Rovaniemi, Finland, in June this year. The initiative for the protection of the Arctic environment was taken by the Finnish Government in January 1989.

The Governments of Canada, Denmark, Finland, Iceland, Norway, Sweden, the Union of Soviet Socialist Republics and the United States of America participated in the Ministerial Conference. The Federal Republic of Germany, Poland and the United Kingdom attended the Conference as invited observers. As observers were represented also the relevant governmental and non-governmental organisations.

The ministers adopted and signed a Declaration on the Protection of the Arctic Environment. They also adopted an Arctic Environmental Protection Strategy and agreed upon the follow-up work.

The Rovaniemi Conference was a starting point to continuing environmental co-operation in the Arctic. The next meeting will be held in Greenland in 1993.

Thank you, Mr Chairman.

**OPENING ADDRESS BY MR GEORGE DUQUIN,
HEAD OF THE DELEGATION OF FRANCE**

Mr Chairman,

My delegation wishes first of all to congratulate you on your election as Chairman of the XVIth Antarctic Treaty Consultative Meeting. We all know that, under your firm hand and with your competent and authoritative guidance, we can make this Meeting a success.

I should also like to thank the German Government very warmly for its generous hospitality.

Mr Chairman,

On the 30th anniversary of the Washington Treaty's coming into force, one thing is obvious: the Antarctic Treaty system is very much alive. The twelve signatory States have been joined progressively by 28 other members. On the present occasion, allow me to congratulate the two countries, Switzerland and Guatemala, which have become of our number since the last Consultative Meeting. My congratulations also go to Ecuador and the Netherlands, which in the interval have obtained the status of Consultative Parties.

This group of 40 countries has just provided further proof of its dynamic character. In adopting at the start of this month in Madrid the Protocol on overall protection of the environment, the Antarctic Treaty system acquired new impetus. By responding to the expectations of the international community and world opinion in their concern for the preservation of the natural environment, it de-fused the most critical charges levelled against it. Signature of the Protocol also showed that the Treaty system had been able to overcome differences and that, having found its way back to the spirit of consensus, it had become stronger.

Just as 30 years ago when they created the world's first nuclear-free zone, the Parties to the Treaty demonstrated their sense of responsibility by making the entire zone south of 60°S a "natural reserve, devoted to peace and science". That amounted to a first, which stands as an example for other parts of the world.

The task before us all is not over, however. There remain for us firstly to put the Protocol into practice, to set up the institutions it calls for, to complete its provisions by developing new annexes covering not only liability but primarily the activity which has grown so considerably in the last few years, I mean tourism.

Inevitably, adoption of this Protocol will also require us to address the issue of bringing into harmony the measures arising from that instrument and the provisions already adopted but the status of which still remains uncertain, i.e. the recommendations.

In short, we cannot relax our efforts. Be assured, Mr Chairman, of the readiness of the French delegation to co-operate in order to assist you in settling such matters as may be so dealt with already at this Consultative Meeting.

**OPENING ADDRESS BY PROFESSOR VINOD K. GAUR,
HEAD OF THE DELEGATION OF INDIA**

Mr Chairman,

Thirty years of unstinted co-operation in establishing Antarctica as a Land of Science and Peace, bring us to a crossroads with wisdom and goodwill to chart our next course, determined to protect the unique environment of Antarctica and its hairspring controls of the planetary climate system. The Indian Delegation therefore considers this XVIth Meeting of the Antarctic Treaty Parties a specially significant one, and your election to its chairmanship most gratifying in view of your personal contributions to the conduct of the Special ATCP Meeting at Madrid. We take this opportunity to felicitate you heartily even as we pay our heartfelt tribute to all member nations for their efforts that led to the adoption of the Environmental Protocol - a goal cherished by India since the 1989 ATCP Meeting at Paris.

It is accordingly our earnest wish that even as we wait for the ratification and entry into force of the Protocol on Environmental Protection to the Antarctic Treaty, its provisions would be voluntarily applied by member nations as well as their implications in the conduct of their various activities in Antarctica.

The Indian scientific endeavour in Antarctica consists of a small number of pointed research programmes in addition to generating geoscientific and environmental data bases. These, amongst others, are aimed at modelling some exciting natural processes which are especially well projected onto Antarctica and, in particular, the critical environmental processes, notably of ozone destruction, of atmosphere boundary layer, of solar-terrestrial interaction and of atmospheric chemistry during transition from glacial to interglacial ages. A special programme relates to developing methodologies and illuminating frameworks for Environmental Impact Assessment. Significant result of these researches are brought out in scientific publications and are freely available to anyone interested: we believe that increasing transparency of our scientific endeavours would be an important prerequisite for implementing the provisions of the new Protocol, which would in term call for more uniform formats, for data acquisition and

their quality appraisal as well as for more structured information bases. The Protocol therefore enjoins upon us to bring to bear hard analytical frameworks and approaches to effectively address its important provisions and corollaries. Fortunately, there is enough evidence to show that the ATCP would brace these issues with knowledge and understanding. My delegation looks forward to contributing to this collective endeavour.

**OPENING ADDRESS BY MR ALESSANDRO VATTANI,
HEAD OF THE DELEGATION OF ITALY**

The ties existing among the countries participating in the Antarctic Treaty have been recently further strengthened by the activities in which the Parties have been involved through an active exchange of information in a continent which is really unique from the point of view of international law and characterised by peculiar environmental conditions.

This exchange of data has produced an extraordinary amount of knowledge in a variety of scientific and technological fields. Italy wishes that the activities related to Antarctica could develop into a closer collaboration, giving thus the opportunity of a better understanding of natural phenomena on a global level, such as the change of climate and the elements of perturbation induced by human activities.

"Cold Areas" are certainly the most favourable site for the understanding of meteorological phenomena on a global level.

It is fundamental therefore, throughout a renewed spirit of international co-operation, in a more favourable world situation, to put together the efforts of the Parties of the Treaty (open to the synergic contributions of the countries which decide to participate in the endeavour) to understand the possible negative effects of industrial development and to eliminate in a due time the causes. This will help also those countries in the world which are not a parties to the Treaty.

In this respect Italy suggests the possibility of a wider opening to the UN, where all the countries are represented and which should be reinforced as the forum of confrontation and agreements on the subject of development and environment.

The recent definition of the Environmental Protocol has represented an important step towards the creation in Antarctica of a world reserve where, under the control of the Parties of the Treaty, scientific activities in favour of all mankind, could be pursued. Italy strongly supports these guidelines. The Italian Minister of University and Scientific and Technological Research, has already established that, while waiting further ratification, the rules of the Environmental Protocol be observed by all Italians in Antarctica.

Further my government has already passed a new law about Antarctic research for the next 6 years. This new law foresees a special commitment for international collaboration with a budget of \$ 70 million.

In order to improve the effectiveness and efficiency of the activities foreseen by the Treaty, Italy furthermore favours the establishment of a Secretariat and the increase of the frequency of the Treaty Parties Meetings.

This new entity will join efforts with the already existing organisations such as SCAR and COMNAP, to take advantage of their knowledge and experiences.

Finally Italy would like to add that the rationalisation process on the use of Antarctica for scientific research and tourism, in full respect for the environment, has already brought the definition of areas which are specially protected or managed. These could be the starting point for creation of a Master Plan, as an instrument able to foster international scientific and logistic collaboration.

**OPENING ADDRESS BY MR MASAKI KONISHI,
HEAD OF THE DELEGATION OF JAPAN**

Mr Chairman,

On behalf of the Japanese Delegation, I would like to extend to you my warmest congratulations on your election as a Chairman of this Meeting. I am sure that under your guidance this session will achieve its aims.

I would also like to express my appreciation to the distinguished Minister of State, Mr Schäfer, for his warm words of welcome, and to the Government of the Federal Republic of Germany for organizing this commemorative meeting in the year of the 30th anniversary of the entry into force of the Antarctic Treaty.

Mr Chairman,

The Antarctic Treaty Consultative Parties met last week in Madrid and adopted the Protocol on Environmental Protection to the Antarctic Treaty including four Annexes which regulates measures for the protection of Antarctic environment and its dependent and associated ecosystems.

The Japanese Delegation attaches great importance to the adoption of the Protocol that has been attained by the strenuous efforts and the spirit of co-operation taken by the Parties through the negotiations.

The Japanese Delegation is looking forward to the early entry into force of the Protocol by the effort of the Parties.

Mr Chairman,

The Japanese Delegation understands that the legal regime of the Antarctica under the Antarctic Treaty has been functioning with a great success for the past 30 years, due to the strenuous efforts made by the Antarctic Treaty Contracting Parties. In this connection, I would like to stress that the Consultative Meeting should strongly appeal to the outer world of the role the Antarctic Treaty system played in ensuring the peace

and the freedom of scientific research in Antarctica and contributed to the interest of all mankind.

The Government of Japan has already determined to play a positive role in international endeavour to overcome the difficult issues such as global environmental problems. In this context, the Japanese Delegation would like to take this opportunity to reiterate that measures for the protection of the Antarctic environment should be strengthened further. Based upon this recognition, Mr Chairman, I would like to assure you that my delegation is ready to make every effort to make this Meeting successful.

Thank you.

**OPENING ADDRESS BY MR HYUN-WON AHN,
HEAD OF THE DELEGATION OF THE REPUBLIC OF KOREA**

Mr Chairman,

On behalf of the Delegation of the Republic of Korea, I should like to congratulate you on your election as Chairman of the Sixteenth Antarctic Treaty Consultative Meeting. I am confident that, under your able leadership, this Meeting will attain its intended goals. I should also like to express our warm thanks to the Government of the Federal Republic of Germany for providing us with such a magnificent setting for our Meeting. At the outset, I wish to join other distinguished delegates in expressing my congratulations on the 30th anniversary of the entry into force of the Antarctic Treaty and extend a heartfelt welcome to the Government of Guatemala as new Contracting Party to the Treaty.

Mr Chairman,

In the past thirty years, the Antarctic Treaty system has constantly evolved to accommodate new challenges. This year we have successfully adopted the Protocol on Environmental Protection to the Antarctic Treaty. It is a historic decision to provide long-lasting environmental protection for the ultimate pristine continent of the world. I am firmly convinced that the new Protocol will be an ideal umbrella for, and a significant step towards, various types of environmental protection necessary for the problem areas in Antarctica. Without a doubt, the Protocol will mark the beginning of an age of greater protection for the Antarctic environment.

Mr Chairman,

We have good reasons to be proud of the achievements of the Antarctic Treaty and its consultative process. In particular, the new Protocol will represent both a great success for the protection of the Antarctic environment and also progress within the Antarctic Treaty system toward a mutual understanding and co-operation.

However, there are many things to be done in the future. As Antarctic activities increase and diversify, and the management of the Earth's natural systems takes on a more global focus, it is essential that the management of Antarctica requires a more advanced and

forward-looking perspective. We have to prepare for new challenges and extend its framework of policies and institutions.

Mr Chairman,

My delegation strongly believes that this Sixteenth Consultative Meeting will contribute to the strengthening of the Antarctic Treaty system in the years ahead. At this Consultative Meeting, we have many important tasks of the furtherence of the Antarctic Treaty system, such as the creation of a secretariat and a body of experts to advise Antarctic decision-makers on a regular basis. In particular, we must give positive impetus to resolving different views and facilitate our co-operation among the Treaty Parties for the establishment of a long-lasting regime of environmental protection in Antarctica. I believe this Consultative Meeting will take another meaningful step in that direction. Our co-operation must continue. And it has to be further deepened and widened in the spirit of the Antarctic Treaty, enabling us to proceed in our worthy undertakings.

Mr Chairman,

The Republic of Korea is keen to work together with other Treaty Parties in this vital endeavour. We must work together to grasp the momentum so that we can bequeath to future generations the legacy of a more ordered, cleaner, pollution-free environment of Antarctica. Let us now hope that the Antarctic Treaty Parties will bend their energies to making it work.

To conclude, Mr Chairman, you may rest assured that the Delegation of the Republic of Korea will do its utmost to contribute to achieving successful results in this Meeting.

Thank you.

**OPENING ADDRESS BY MR PIETER J.M. VERBEEK,
HEAD OF THE DELEGATION OF THE NETHERLANDS**

At this XVIth Antarctic Treaty Consultative Meeting we commemorate the thirtieth anniversary of the entrance into force of the Treaty. Our host, the German Government, has organised a number of festivities and other events, not only to celebrate but also to highlight the many achievements which the Parties have brought about in the past three decades and which will keep them together, undoubtedly, for many years to come.

Not three decades but only three days ago the XIth Antarctic Treaty Special Consultative Meeting was concluded and on the fourth of October the Protocol on Environmental Protection to the Antarctic Treaty was opened for signature in Madrid; on that same day it was signed by 23 Consultative and 7 Non-Consultative Parties: a major contribution to the Antarctic Treaty system and to international environmental policies in general which, hopefully, will enter into force as soon as possible.

At the present Meeting one of the more important decisions to be taken concerns the provisional application of the new undertakings in the Protocol during the interim period until its formal entry into force which, actually, may last several years. Also it is desirable to start consideration of the way in which certain provisions in the Protocol, including institutional measures, could best be worked out. Finally, the preparation of further Annexes to the Protocol, for example concerning liability, the system of specially protected areas and on tourism, deserves our attention.

On the provisional application of the new undertakings the Netherlands' delegation attaches particular importance to Articles 6 of the Protocol (on Co-operation), 7 (on the Prohibition of Mineral Resource Activities), 8 (on Environmental Impact Assessment), 14 (on Inspection) and 15 (on Emergency Response Action); equally, the four Annexes should be implemented on a provisional basis. A common declaration of intent by this ATCM to observe new commitments provisionally, would seem useful.

Regarding the institutional measures foreseen under the Protocol, such as the establishment of a Committee for Environmental Protection, my delegation would be willing to agree to the provisional establishment of such a Committee, but could also accept to have the tasks of the Committee performed by the ATCM itself as long as

necessary. The holding of annual rather than bi-annual ATCMs may hopefully already start in 1992.

The Netherlands delegation will submit a working document on the establishment of an enquiry procedure concerning Article 3 of the Protocol (on Environmental Principles). We fully support the proposal by China to study the system of Antarctic Treaty Consultative Meeting Recommendations, in particular, but not exclusively, from the perspective of consistency with the new Protocol and/or its Annexes. We also agree to the commencement of work on the preparation of an Annex on liability, as foreseen in Article 16 of the Protocol. To study these three subjects could perhaps be entrusted to a working group of legal experts, which should meet before the XVIIth ATCM.

Distinct from, but as to the substance not unrelated to the institutional questions concerning the implementation of the Protocol, is the establishment of a small ATCM secretariat. The Netherlands delegation is in favour of such a secretariat, to alleviate the increasing tasks of host-Governments to ATCMs and to guarantee the continued efficiency and credibility of the consultative mechanism as such.

**OPENING ADDRESS BY MR FRANK WONG,
HEAD OF THE DELEGATION OF NEW ZEALAND**

Mr Chairman,

Congratulations on your election to the Chair of this Meeting in the thirtieth year since the Antarctic Treaty entered into force.

May I, through you Mr Chairman, offer our thanks to the Government of Germany for hosting us here in Bonn and making available these splendid facilities.

Mr Chairman,

Over the past thirty years, the Consultative Parties have successfully developed a legal regime for the collective governance of Antarctica - the Antarctic Treaty system. Three days ago, we adopted the most recent addition to that system - the Protocol on Environmental Protection to the Antarctic Treaty. I warmly welcome the return to consensus amongst us that its adoption represents.

Mr Chairman,

The Consultative Parties have completed well the task with which they were charged at Paris, and have adopted a truly comprehensive environmental protection regime which will apply to all human activity in Antarctica. New Zealand, for its part, intends to ratify the Protocol as quickly as possible. It is our strong hope that the new regime will come quickly into force. In the interim, it is of major importance that the Treaty Parties are guided by the spirit of the Protocol in the planning and conduct of all Antarctic activities.

We have been through a decade of great change and of great activity within the Antarctic Treaty system. Two issues have dominated our attention - minerals activities and environmental protection. With the adoption of the Protocol, we have returned to a consensus on both of these issues.

Before we begin to turn our minds to new initiatives, a high priority must be consolidation. With the most pressing concerns now met, we are each presented with the

opportunity to take stock and reflect on the state of the Treaty system itself - the domestic legislation by which we implement measures adopted under the Treaty and the fulfillment of existing Treaty obligations within our national Antarctic programmes. The product of such effort will be both the enhancement of Antarctic environmental protection and the strengthening of the Antarctic Treaty system.

Nevertheless Mr Chairman, there do remain a number of important issues which demand the attention of this meeting.

As both the amount and the diversity of the human activity undertaken in Antarctica increases, so does the burden falling to the Parties in undertaking the collective management of the continent. An increase in the frequency of Consultative Meetings would make the burgeoning work load more easily manageable.

The Government of Germany has accepted a demanding organisational task in acting as our hosts. It is our hope that this Meeting will result in an easing of the burden placed on future host Governments by an augmentation of existing Treaty system infrastructure.

We welcome the opportunity provided by this Meeting to further examine the existing Antarctic Protected Areas System and measures adopted by Consultative Parties on tourism and non-governmental activity. We look forward to progress on both issues.

Mr Chairman,

We warmly congratulate and welcome the two new Antarctic Treaty Consultative Parties, Ecuador and the Netherlands.

We are pleased to see the continued expansion of the Treaty membership, with the accession to the Treaty since our last Consultative Meeting of Switzerland and Guatemala.

We are presented with a full agenda. The best means at our disposal of marking the thirtieth anniversary of the Antarctic Treaty, is to continue with the tradition of effective consensus decision making and achieve good progress on the issues before us.

Thank you, Mr Chairman.

**OPENING ADDRESS BY AMBASSADOR JAN ARVESEN,
HEAD OF THE DELEGATION OF NORWAY**

The adoption and signing of the Protocol on Environmental Protection to the Antarctic Treaty represents a very important and most significant milestone in the history of Antarctic Treaty system co-operation.

The Madrid Protocol clearly demonstrates to the world community that the Antarctic Treaty system is working efficiently and is an outstanding example of what can be achieved through international co-operation when participating governments have the necessary political will and are genuinely interested in acting responsibly to reach a common goal.

The Government of Norway is particularly pleased to note that the Consultative Parties have managed to preserve and strengthen the Antarctic co-operation based on the principle of Consensus.

For thirty years co-operation within the Antarctic Treaty system has been founded on two main pillars - peace and scientific research. The Madrid Protocol takes mankind a major step forward. In the future, Antarctic Treaty system co-operation will be based on yet another important main pillar of increasing global significance - environmental protection in and around the Antarctic continent south of the 60th parallel.

The historic event that took place in Madrid last Friday was a most appropriate way to mark and commemorate the 30th anniversary of the entering into force of the Antarctic Treaty.

The ratification process of the Protocol will, however, probably take some years. Until the Protocol enters into force we have work to do. At this regular Consultative Meeting here in Bonn one of the most important tasks will be to decide on how to proceed in order to achieve some kind of provisional implementation of the Madrid Protocol.

Another item on our agenda to which we attach great importance is item 11 on the Antarctic Protected Area system.

With regard to the frequency of future Consultative Meetings, the Norwegian Delegation agrees with what we understand is now the general consensus among the Consultative Parties, i.e. that Consultative Meetings should in the future be held annually.

As a logical corollary to a decision to have Consultative Meetings every year there is also a need to reach a consensus here in Bonn on some sort of an intersessional mechanism to ensure adequate follow-up of ATCM recommendations and to prepare for the next Consultative Meeting.

With reference to item 13 on the agenda the Norwegian Delegation is pleased to inform the Consultative Meeting that Finland, Sweden and Norway have agreed to increase their Antarctic scientific activities substantially by undertaking joint logistic co-operation with regard to Antarctic expeditions. The main logistic responsibility providing for vessels, helicopters and so on will alternate among the three countries. Finland has taken on this responsibility for the 1991/92 expedition. Norway will have the logistic and co-ordinating function for the 1992/93 expedition and Sweden the following year.

The Nordic logistic co-operation aims, inter alia, at limiting the adverse impacts in the Antarctic environment.

The Norwegian scientists will this coming season concentrate and operate their research activities from the Troll Station in Dronning Maud Land. The impacts of the Norwegian Antarctic activities will be monitored and assessed in accordance with the requirements of the Madrid Protocol.

**OPENING ADDRESS BY MR LUIS DE ARRIZ PORRAS,
HEAD OF THE DELEGATION OF PERU**

I should like to start by thanking the Government of united Germany and you in particular, Mr Chairman, for having received us as you have done and for having organised this Meeting where we can, under the best possible auspices, bring into focus, clarify and, as far as possible, resolve the most important issues now before us.

This XVIth Consultative Meeting is the first such Meeting to be held since the signature, in Madrid, of the Protocol to the Antarctic Treaty on global protection of the environment. Apart from voicing our mutual satisfaction at having reached this agreement, which is really unprecedented in terms of its scope and importance, we have to bear in mind that the approval of the Protocol brings us face-to-face with a series of decisions that have to be taken at an early stage. Not all these decisions are exclusively bound up with environmental protection, although the first one with which we shall have to contend will be that of how to ensure continuous implementation - perhaps by means of practical recommendations - of the environmental protection measures which we might be able to put into effect through informal yet substantive agreements.

In connection with the environmental aspect, we must not overlook the very real impact which the Madrid Protocol can and should have on the World Congress on the Environment scheduled to be held in Brazil in 1992. With that in mind, we should recommend that our countries give appropriate instructions to their delegations attending the Congress.

The fact that Antarctica is about to become a world reserve and a continent for peace, science and co-operation should be duly underscored by the Parties to the Antarctic system both collectively within the United Nations and individually in their international relations, since it represents a clear instance of support for the international community and plainly demonstrates the genuine concern which our group feels for the common well-being of mankind, transcending as it does empty and at times counterproductive rhetoric.

Apart from these general considerations, there are a number of issues which we clearly have to resolve or at least address ourselves to resolving, perhaps in the immediate future, in addition to expanding on the principles enshrined in the Protocol, if that is

possible at the present stage. We have to examine the case of tourism and see how it would be possible, without prohibiting it or detracting from its nature, for it to be channelled in such a way that there is no prospect of its growth having any effect on the continent's ecosystem. There are many possible ways of channelling tourism, and I shall therefore not go into details at this point.

The problem of liability for environmental damage is a complex one and it will be difficult to resolve it at the present Meeting. It might be possible to set up a standing group which, after engaging in the requisite consultations, could clarify the matter sufficiently for the next Consultative Meeting to take a decision.

We have to re-affirm the principle of international co-operation at all levels, whether it be bilateral, regional or worldwide and, as far as possible, make it a mandate of the Meeting, since the essence of a multi-partite system like that for Antarctica must lie in co-operation.

With regard to the future frequency of Meetings, I think that, as a result of the increase in the number of questions on which decisions have to be taken, a consensus has emerged in favour of holding them annually. It would also be necessary to specify at what time of the year they should be held. Since the Antarctic summer ends in about March and the scientific reports on the individual campaigns are not ready until after the middle of the year, I think that the best time would be in the last quarter, preferably sometime in November. If we decide that Meetings should be held in November, it would be possible to start off with that periodicity in 1992.

The Antarctic system, which is for the first time recognised as such in the Madrid Protocol, has - over the thirty years the Treaty it is built around has been in force - demonstrated its effectiveness, flexibility and strength and resilience, adapting itself smoothly as it has done to the changing circumstances and priorities of the present-day world. Proof of this can be seen in the agreement reached approving the Protocol on Environmental Protection and in the growth system which its set of Annexes offers for dealing with specific subjects, issues and problems.

In my view, there are two reasons for this lasting and flexible state of affairs: these are, firstly, the freezing - in practice *sine die* - of sovereignty claims and, secondly, the consensus system adopted for decision-making purposes. Both these features are upheld and re-affirmed in the Madrid Protocol, since in the final resort even the amendment mechanism depends on unanimity for it to take effect, and unanimity could be said to be the active voice of consensus.

However, the increasing complexity of the system and the exponential growth in the amount of data to be handled and circulated make it advisable to set up an administrative body responsible for information and co-ordination. This had already been discussed at earlier Meetings and even at the Preparatory Meeting in April, but approval of the Protocol on the Environment now makes it imperative. Whether it is called a Secretariat or whatever is of no importance: what is needed is a body that handles, centralises and circulates information, keeps the archives, updates the Yearbook, and so on. I think that we are all agreed that it should be a small yet efficient administrative body entailing minimum costs. It is a matter on which I think we should take action at this Meeting. However, when deciding on whether to set up such a body, we also have to look into the problem of its funding, the apportionment of costs between countries, its location and whether or not it should be of a permanent nature.

Allow me to share with you some of my ideas on this subject. The first is that such a body should not be of a provisional nature but should be permanent. The second is that the apportionment of costs should be weighted on an equitable basis rather than in equal shares. By way of example, consideration could be given to the system applied by the United Nations, subject to the requisite adjustments to allow for the existence of Consultative Parties and non-Consultative Parties. The third is that the funding should be exclusively allocated to defraying such a body's running costs, while the cost of organizing Consultative Meetings should, for the time being at least, continue to be borne by the host countries. These guidelines would also be instrumental in limiting the staff strength and costs of the administrative body. The fourth is that a decision on the location should be taken in such a way that there will not be the remotest possibility of its giving rise to any doubt or suspicion and that there will likewise be no duplication with the location of the Depositary Government or of any other organisation or body of the Antarctic Treaty system. Accordingly, as an initial indication, I think that consideration should be given to the idea that the host country of such a body ought not to be one of the major powers or a country with sovereignty claims or else a country hosting the Secretariat of any of the Conventions or Agreements forming part of the system, but rather any one of the other remaining "middle-of-the-road" countries.

Once these aspects have been settled, the decision as to the person who would be appointed to take charge of such a body should merely focus on that person's independence and ability or experience. I believe that, in the light of all these considerations, the setting-up of an administrative body or Secretariat could be approved without any difficulty, duplication or suspicion.

I should like to conclude by re-affirming Peru's interest in the Antarctica, which stems from geographical, historical and environmental considerations alike and is strengthened by the tradition of internationalism and co-operation that has always inspired my country in its action. This is the spirit in which we have come to this Meeting, which we feel sure will represent yet a further step in strengthening and refining the Antarctic Treaty system as it stands.

Thank you.

**OPENING ADDRESS BY MR JANUSZ MICKIEWICZ
HEAD OF THE DELEGATION OF POLAND**

Mr Chairman,

I take special pleasure, both on official and personal grounds, in congratulating you on your election to the chairmanship of the XVIth Antarctic Treaty Consultative Meeting in Bonn. It is gratifying to me to see in charge of this responsible post a prominent German diplomat and lawyer, whose country and mine are actively engaged in strengthening and developing their good-neighbourly relations.

I wish also to express, on behalf of the Polish delegation, our appreciation to the Government of the Federal Republic of Germany for the excellent arrangements and hospitality which have been extended to this Meeting.

Mr Chairman,

Regular Consultative Meetings are always important gatherings, nevertheless two important facts will be particularly reflected during our present deliberations in Bonn.

Firstly: some weeks ago we celebrated the thirtieth anniversary of the entering into force of the Antarctic Treaty - an international document of outstanding value, which has not only stood the test of time but has shown a remarkable capacity to take on new tasks and to meet new challenges within the conceptual and institutional framework laid down by its legal stipulations.

Secondly: some days ago we signed in Madrid the Protocol to the Antarctic Treaty establishing a comprehensive environmental protection regime for the Antarctic. Signing of the Madrid Protocol is a clear proof for the United Nations and the whole world that the Antarctic Treaty system is alive and effectively carrying out its responsibilities in relation to the Antarctic. This great achievement comes at a propitious time, since international environmental law is evolving rapidly. The Protocol dealing with the protection of environment in the Antarctic should undoubtedly contribute to widespread international support for the protection of the global environment as a whole. The commencement of negotiations on climate change, on the protection of the biological diversity and on management of forests, as well as the

preparations for the United Nations Conference on Environment and Development to be held in Rio de Janeiro in 1992, are expressive examples of the international community's determination to act in this area.

My delegation is convinced that constant attention will be focussed in furthering our works on the proper and effective implementation of the Protocol and its Annexes.

We appreciate the efforts that many delegations have already devoted towards the preparation of very useful drafts or working papers. I have in mind in particular the detailed papers dealing with Area Protection and Management, Antarctic Tourism, Enquiry Procedure, International Antarctic Scientific and Logistic Co-operation. Amongst the items of the agenda there are also some points of particular practical importance but not very easy to settle, like internationalisation of the Antarctic system and frequency of the Consultative Meetings. During our debate on these points we should, I think, take into account the financial implications of the suggested ideas and the necessity to observe special national procedures in relation to the financial burdens arising out of the activity in the international organisations or institutions.

Nevertheless, Mr Chairman, I would like to express the hope that this Consultative Meeting will deal with all issues taken up for deliberations in a realistic and satisfactory manner.

Thank you, Mr Chairman.

**OPENING STATEMENT BY MR NAUDE STEYN,
HEAD OF THE DELEGATION OF SOUTH AFRICA**

Mr Chairman,

It gives me pleasure to congratulate you, Sir, on your election as Chairman of this Meeting, and I should like to assure you of the fullest support of the South African delegation.

Allow me also, through the Chair, to thank the Government of Germany on behalf of my Government, for hosting this XVIth Consultative Meeting in Bonn. This Meeting is a historic occasion as we commemorate the signing of the Antarctic Treaty thirty years ago, and as is recommended in ATCM Recommendation XV-22, a commemorative stamp will be issued in South Africa on 5 December 1991, to mark the anniversary.

South Africa is in the process of designing a new Antarctic Station, and it is the intention that it will be erected at Vesleskarvet (71°40'S, 02°51'W) in Queen Maud Land during the 1992/93 summer season. By moving the base inland, closer logistical co-operation between fellow Treaty countries operating in the area will be possible. From a scientific point of view the new base will make provision for collaborative scientific programmes, and we look forward to a period of new co-operation and joint ventures on both the scientific and logistic fronts.

In the meantime, an Environmental Impact Assessment will be carried out during the 1991/92 summer season, after which the results will be made known to member countries and their comments invited.

As is known to ATCM-countries with a vested interest in the same area as South Africa, Cape Town is ideally located for rendering logistic support to ships, aircraft and expeditions to the Antarctic. The South African Government will gladly assist in accommodating interested parties wishing to use Cape Town as a support base for their expeditions.

May I take this opportunity of assuring Antarctic Treaty Parties of South Africa's commitment to environmental conservation in Antarctica. We shall do everything possible to ensure that the fragile systems are not damaged or destroyed.

In conclusion, may I state that the success and achievements of the past should, however, not lead to complacency on the part of the Consultative Parties. It should be accepted that the coming years will be more challenging than the past 30 years. We believe that the splendid spirit of co-operation and compromise which has led to successful solutions to common problems in the past, including the signing of the Madrid Protocol a few days ago, will continue to flourish in the future.

Thank you, Mr Chairman.

**OPENING ADDRESS BY MR CARLOS BLASCO VILLA,
HEAD OF THE DELEGATION OF SPAIN**

Mr Chairman,

In the first place, I should like to congratulate you on your election as Chairman of the Meeting and to thank your Government for its generous hospitality in hosting the XVIth Antarctic Treaty Consultative Meeting in this delightful city of Bonn, on the banks of the Rhine, where we were already your guests at the Preparatory Meeting in April.

The XVIth Meeting is starting its proceedings only two days after the completion, in Madrid, of the work which gave birth to the Protocol on Environmental Protection to the Antarctic Treaty.

I believe that this legal instrument, which has been widely called for by the circumstances and by public opinion internationally, represents a landmark in the Antarctic Treaty system. It is from today onwards, here in Bonn, that we are witnessing the outset to a new period in which Antarctica has already been declared a continent exclusively devoted to peace and science and a natural reserve.

It is with effect from the Meeting commencing today that the principles enshrined in the Protocol will start being developed and, with this in mind, that we shall advance even further in safeguarding the Antarctic environment and in strengthening scientific co-operation.

Hard and fast rules likewise have to be laid down regarding the issue of tourism in Antarctica, in an endeavour to come up with imaginative answers that will make it possible for the inhabitants of Planet Earth to admire the last remaining virgin continent without such a move having an adverse effect on the environment which we are so intent on defending.

On another subject, Mr Chairman, allow me to say that this Meeting will be commemorating the 30 years during which the Antarctic Treaty has been in force. They have been 30 years of effort and of encouraging performance that have made it possible to attain the goals which the Treaty's founders mapped out for defending the

conservation of Antarctica and turning it into a laboratory for the world's scientists, provided their motives were disinterested and peaceful.

The Antarctic system has shown itself to be effective and useful at all times and has managed to contend successfully with the challenges posed by changing circumstances, as was demonstrated in the case of the drafting of the Protocol which was opened for signature in Madrid last week. That is why we believe that we must defend the Antarctic system, since we continue to believe in the goals of its founders and in its continuing relevance.

Thank you, Mr Chairman.

**OPENING ADDRESS BY MRS DESIREE EDMAR,
HEAD OF THE DELEGATION OF SWEDEN**

The Swedish Delegation is very happy to be back in Bonn, and it is with great pleasure that we will contribute to the work of the XVIth Antarctic Treaty Consultative Meeting under the able chairmanship of Mr Dietrich Granow.

Sweden acceded to the Antarctic Treaty in 1984. In 1988, our country was accepted as a Consultative Party. Of the thirty years of the history of the Treaty, Sweden has thus been involved as Consultative only during the last three, one tenth.

However, this tenth part of Treaty history has been a period of rapid, not to say dramatic developments. The three years have proved to us, as to the world, the viability of the agreement between the Antarctic Parties.

Only during these years, ten more states have acceded, and nine have become Consultative Parties. And during these years, the Antarctic Treaty has proved its strength in taking the responsibility for the environment protection of the continent more clearly than ever before.

For thirty years, the Antarctic Treaty has served as a guarantee that the continent will not be the object of international discord. A treaty that safeguards important principles of international law and promotes international co-operation benefits not only its immediate Parties but contributes directly to global peace and security. This will remain the basic feature of the Antarctic Treaty.

But the management of Antarctica must now be carried forward to meet the requirements of the 21st century.

In the last few years, man's deepening knowledge of ecology is leading to a greater awareness of the damage done to many of our planet's life support systems and the increasing risks of adverse climatic changes. Scientific work in Antarctica may provide answers to fundamental questions regarding both the history of the Earth and the future development of the biosphere. Antarctica is one of our most important laboratories in the climatological and environmental fields. But it also represents, as we all know, the aesthetic and almost spiritual values of man's dream of un-spoilt nature.

It is the common perception of Antarctica as a unique continent that has been the driving force behind the political consensus manifested through the Protocol on Environmental Protection to the Antarctic Treaty which has just been adopted.

This Protocol is an achievement of great significance. But it is not an end in itself, and it must not become an end to our efforts. Today, here in Bonn, we are taking on the responsibility to carry the provisions of the Protocol and its Annexes into practical implementation. The actual operation of the Treaty system will be essential to our success. Based on the tradition of informal, practical and friendly co-operation which is characteristic of Antarctic matters we must now take steps to cope with the increasing work-load through a more professional and efficient organisation. One aspect of basic importance to the operation of the system is information - information both to the outside world on the rules that will henceforth apply to Antarctic activities, and information within the system to fellow operators and planners.

Antarctica is the continent of peace. It is also the continent of science. Scientific activities are the basis of human presence in Antarctica, and the Washington Treaty acknowledges the substantial contributions to scientific knowledge resulting from international co-operation in scientific investigation in Antarctica. Recent scientific and technical developments in Antarctica suggest new possibilities for research efforts of global significance. The advancement of Antarctic science should be promoted very considerably by international collaboration, which will open up short-cuts to a higher level of knowledge and a more rapid development of innovative ideas.

This is the background of the Swedish proposal regarding the promotion of international scientific and logistic co-operation in Antarctica. It is becoming increasingly difficult for any single country, and even more so for small and less technologically advanced nations, to meet the demands of today's scientific frontiers without co-operation. We propose that the different aspects of this issue, including more efficient information exchange and logistical co-operation, should be looked into more closely with the help of COMNAP and SCAR.

Another aspect of Antarctic co-operation which could prove useful also to the scientific work is that of inspections. Inspections in the terms of Article VII of the Washington Treaty have served as an important instrument for safeguarding the openness of the Antarctic system and the use of Antarctica for peaceful purposes. This will be the case also in the future. However, the concept of inspection involves also the exchange of

experience and knowledge on matters of environmental protection, according to the Environment Protocol. Sweden has presented a proposal to look further into the possibilities of developing this new instrument into a useful tool.

In our view, the strength of the Antarctic Treaty in the coming years will be measured by its degree of openness and its maintenance of scientific credibility. These are two fundamentals of the Antarctic Treaty system. We are looking forward to work with our colleagues of this meeting towards these objectives.

**OPENING ADDRESS BY MR ARTUR CHILINGAROV,
HEAD OF THE DELEGATION OF THE UNION OF SOVIET SOCIALIST
REPUBLICS**

Mr Chairman,

On behalf of the delegation of the Soviet Union, may I join preceding delegations in warmly congratulating you on your election to the post of Chairman of our Meeting.

May I also, through you, express our gratitude to the Government of Germany for all the preparatory work and excellent arrangements for our Meeting.

We have all, I am sure, come to Bonn in a good frame of mind and with a sense of achievement. The Protocol on Environmental Protection of Antarctica signed in Madrid will strengthen both the Treaty itself and the Antarctic system based on it.

We have once again demonstrated our unity in our will to preserve Antarctica, with its unique environment, for future generations. The Treaty Consultative Meetings have proved a reliable and effective mechanism, well able to react in a prompt and practical way to life's new demands.

The signing of the Protocol by a majority of States is undoubtedly a great success, which should not, however, push into the background other matters which need to be resolved.

The Treaty is already 30 years old and is continuing to develop, which does present us with other problems.

This process is continuous. We hope that in solving these problems we will be guided by that spirit of co-operation and mutual understanding which has always characterised the Treaty and thanks to which we have managed to preserve peace and develop co-operation on the sixth continent of our planet.

The Soviet Union has always made a substantial contribution to knowledge of Antarctica. A particular role in this research work is being played by representatives of Russia, which intends to participate more intensively in Antarctic Treaty activities. I want to assure you that in the future, too, our country will strive to strengthen and develop co-operation in the Antarctic community.

**OPENING ADDRESS BY DR JOHN HEAP,
HEAD OF THE UNITED KINGDOM DELEGATION.**

Mr Chairman,

Like many before me, I cannot let it pass that this meeting, in 1991, comes 30 years after the first Antarctic Treaty Consultative Meeting held in Canberra. It may help us in approaching this Meeting, to take a brief look at where we have come from and what we have achieved over those years.

At its beginning the Antarctic Treaty was a delicate flower. The only activities with which it was directly concerned were military, scientific and nuclear. It did, however, provide for consultations on matters of common concern; and on that basis the Antarctic Treaty system has been developed.

For the first half of these 30 years, by using relatively uncontroversial subjects such as conservation of wildlife, exchanges of information and area protection, the Consultative Parties developed a series of agreements by which indirectly, but progressively, they accustomed themselves to dealing with the fundamental issue on which they were divided - whether or not territorial sovereignty could be exercised in Antarctica. It was out of this period there were borne two fundamental understandings. The first was that governance of what went on in Antarctica could be achieved by no other means than through the consultative procedures of the Antarctic Treaty. The second was that any country which pushed its position regarding sovereignty in Antarctica to its logical conclusion would end up with no agreement. The price of governance was forbearance.

These understandings gave us, collectively, the strength to deal with the more difficult Antarctic resource issues which, elsewhere in the world, were inextricably associated with clear exercise of sovereignty or its clear absence. The challenge that we faced in dealing with resource issues was that in Antarctica we were unable to apply the rules that applied elsewhere. We were divided as to whether sovereignty was clearly present or was clearly absent. We had to innovate. We did so in CCAMLR by putting the protection of the Antarctic marine ecosystem as our first priority and, in CRAMRA, the protection of the Antarctic environment.

For democratically expressed reasons within their own countries, the care that CRAMRA expressed for the Antarctic environment was seen by some as not being innovative enough. The consequence of that difference of view was signed by many of us in Madrid three days ago.

But what we did there does not only relate to minerals. Much more important is what we did for the here and now by setting out a system and rules for environmental protection which,

- firstly, apply to all Antarctic activities, present and future, other than those covered by other components of the Antarctic Treaty system; and
- secondly, they are expressed in mandatory terms which require all of us to legislate to give effect to them.

It follows in the view of my delegation, that in its scope and legal force, the Protocol far exceeds in importance any agreement that has hitherto been reached in the Antarctic Treaty system. In the view of my Government it is important that, for a time, we ponder the implications of what we have done before going on to add to the obligations our governments have taken on in concluding and adopting the Protocol and its Annexes.

Having concluded the Protocol, it is now politically vital that, pending its formal entry into force, we should be seen to be acting in accordance with it as far as our respective domestic law allows.

With that in mind, my delegation would see the following steps, which we hope will be taken at this Meeting, as moving in the right direction of getting the Protocol, in a practical sense, up and running:

- provisional implementation of the Protocol and its Annexes;
- agreement here that the Environmental Committee should be convened at the XVIIth Consultative Meeting;
- agreement here to annual Consultative Meetings, as required for the operation of Annex 1 to the Protocol, and agreement that the XVIIth Consultative Meeting should be held in the first half of 1993;

- that we should complete work begun, but left unfinished, at the XIth Special Consultative Meeting on a rationalisation of the Antarctic Protected Area system, and adopt the outcome in the form of an Annex;
- that we should make a start towards the establishment of a small Antarctic Treaty Secretariat;
- that we should codify the existing Recommendations on tourism and non-governmental expeditions and adopt the codification in the form of a Recommendation;
- that we should embark on a study of tourism so as better to define the problems it poses and to provide a basis for deciding whether an additional Annex is required.

We look forward to a productive Meeting under your Chairmanship.

Thank you.

**OPENING ADDRESS BY MR MARIO AGUERRONDO,
HEAD OF THE DELEGATION OF URUGUAY**

Mr Chairman,

The delegation of the Republic of Uruguay wishes to congratulate you on your election, convinced as it is that your well known high qualifications will see us through to the successful completion of our proceedings.

This XVIth Antarctic Treaty Consultative Meeting takes place in two very special circumstances with reference to space and time.

In the context of space, our meeting is being held in the reunited Germany which is a product of the new times as well as an example of national and international concord. We wish to convey to the Government and people of Germany our best wishes for fruitful achievements, and our thanks for having provided a setting and an atmosphere conducive to a successful meeting.

In respect of timing, our meeting coincides with the 30th anniversary of the coming into force of the Antarctic Treaty. Public opinion has been in the habit of thinking that the Treaty was to expire after 30 years. Although that was a mistaken view, it is none-the-less true that this moment in time was always supposed to represent a particular challenge.

It was regarded as being a kind of crossroads where the Sphinx of time would await the Treaty members and put to them the riddle of perennity and viability.

Reaching this moment is a significant anniversary, since it means that the Agreement has withstood the test of time.

At the same time, however, the Antarctic Treaty, now in force for 30 years already, far from losing strength, has brought into being a whole system built up upon the Recommendations of the Consultative Meetings and a number of Conventions covering areas of overriding importance for the Antarctic area.

The newly-adopted Protocol on the protection of the environment is concrete proof of the fact that the system, far from dwindling away, is growing and gaining strength to deal with the matters which have been and remain critical, in a climate of effective and harmonious consensus.

Let us take a look at three essential features of the Protocol, which currently provide a kind of barometer of the present situation of the system.

Above all, it is the first instrument specifically defining the Antarctic Treaty system and thereby recognizing its existence. Time has not gone by in vain and the parent Treaty has given rise to a complex but effective and reliable regime.

Secondly, the Protocol reaffirms the principles enshrined in the Antarctic Treaty and goes to show that the goals which it was set at the time it was drafted were the right ones and are still relevant. Antarctica is now designated as a nature reserve devoted to peace and science.

Thirdly, the Protocol commits the Parties to ensuring the comprehensive protection of the Antarctic environment and dependent and associate ecosystems, through a pledge that it not something new to the system, but is now taking on a clearly defined and systematised shape.

Hence, as time goes by, our system can be seen to be evolving and gaining in strength, as it caters with flexibility for the continuous demands entailed by activities in the Antarctic and the natural interests of its members and mankind as a whole.

Similarly, we need only take a look at our agenda to gain a idea of the new subjects of concern that are propelling us forward, such as structural reforms, the drafting of rules for environmental protection, international co-operation, the streamlining of the technical aspects and the activities of third States in the Antarctic area. All these are challenges to which we stand ready to respond and find effective answers with the consensus of the Parties.

A superficial glance at our agenda might give the impression that it is a bureaucratic repetition of items that have already been discussed. However, if it is examined more closely, the opposite can be seen to be true, in that it points to the quest for perfection and for enhancement of the system, and to the opening-up of new avenues of understanding through which the Parties involved will continue to pursue the prime objectives that have been laid down within the scope of a regime that is as well-ordered and harmonious as it is reliable and efficient.

Thank you, Mr Chairman.

**OPENING ADDRESS BY DR FRANZ CEDE,
HEAD OF THE DELEGATION OF AUSTRIA**

Mr Chairman,

Let me, first of all, convey my delegation's sincere congratulations on your election as Chairman of the XVIth Consultative Meeting of the Antarctic Treaty.

We are happy to see you preside over this Meeting hosted in Bonn by the Government of unified Germany.

Mr Chairman,

On Friday, 4 October 1991, Austria, together with a number of other countries, signed the Madrid Protocol on environmental protection to the Antarctic Treaty. The signature of this instrument of international law which will hopefully be followed soon by its entry into force marks an important step in developing the environmental dimension of the Antarctic Treaty system which has so well served the international community over the past 30 years. Austria is convinced that the Protocol, elaborated and adopted in a truly co-operative spirit, will further enhance the legal regime governing Antarctica as it meets those pressing concerns for the conservation of the unique ecosystem on the sixth continent.

There is a growing awareness in Austria that whatever happens to Antarctica is not just the business of a few but a matter of legitimate concern of the entire world. Having preserved peace and security in the region and having promoted scientific exchange and co-operation the Antarctic Treaty system including the new Protocol deserves our continued support and commitment.

With this in mind, Mr Chairman, my delegation is ready to work, under your guidance, towards a successful conclusion of the XVIth Antarctic Treaty Consultative Meeting.

Thank you.

**OPENING ADDRESS BY MR VALENTIN BOJILOV,
HEAD OF THE DELEGATION OF BULGARIA**

Mr Chairman,

On behalf of the delegation of Bulgaria, allow me to congratulate you on your election as Chairman of the XVIth Antarctic Treaty Consultative Meeting and express our conviction, that under your able leadership we will achieve meaningful results.

I should like also, through you, to convey your gratitude to the German Government for the excellent facilities it has made available to us for our work.

The Bulgarian delegation wishes to take this opportunity to reiterate Bulgaria's commitment to the principles and objectives of the Antarctic Treaty system. We are firmly convinced that it is in the interest of all mankind that Antarctica should remain forever an area used exclusively for peaceful purposes, where the widest possible international scientific co-operation should be promoted and the most stringent standards for the protection of the fragile and vulnerable Antarctic environment must be applied. In this context, the Protocol on Environmental Protection to the Antarctic Treaty with the Annexes thereto is a major achievement. Its adoption should allay the legitimate concerns of the international community to see the protection of the Antarctic strengthened, and at the same time answer the doubts expressed from different quarters as to the effectiveness of the Treaty system as a whole. However, the provisions of this Protocol should not be interpreted in a way that could put in doubt the principle of freedom of scientific research, enshrined in the Antarctic Treaty. Furthermore, it is now imperative that a more co-ordinated approach to scientific investigation within the Treaty area be worked out among the Parties and much closer international scientific and technical co-operation be substantially enhanced, in which small countries with limited resources would actively participate. Bulgaria's scientific community is looking forward to this.

Mr Chairman, there are many important topics on the agenda which should be dealt with at this Meeting. The long tradition of close co-operation among the Treaty Parties is a sound basis for substantive progress on all these matters. The Bulgarian delegation looks forward to co-operating with other delegations with the aim of contributing to a successful outcome of this Meeting.

Thank you.

**OPENING ADDRESS BY MRS.KIRSTEN SANDER,
ACTING HEAD OF THE DELEGATION OF DENMARK**

Mr Chairman,

The Danish delegation is very pleased to attend this XVIth Consultative Meeting here in Bonn. We congratulate you on your election and look forward to a constructive and fruitful outcome of the agenda which contains many matters of great importance.

The Danish delegation especially looks forward to the implementation of the Environmental Protocol with Annexes to the Antarctic Treaty, which the Treaty Parties have negotiated to a successful conclusion. With the signing of this Protocol the Treaty Parties are sending a strong signal to the world community that they are serious about protecting of the unique Antarctic environment. Now action must follow our words.

The protection of the environment is a key issue for Denmark; since Denmark joined the Treaty "family", we have advocated comprehensive protection of the Antarctic region. We know from experience in the Arctic region how fragile the Polar regions can be. The introduction of environmental impact assessment procedures for Antarctic operations as a tool to prevent damage to the environment, is a priority procedure to be implemented as soon as possible.

With the increasing level of activities in the Antarctic, both scientific and touristic, it is imperative that the provisions in the Protocol are implemented forthwith; we cannot wait until the Protocol is legally in force.

Furthermore, this increase in activities, increased exchange of information requirements, the move towards annual Treaty Meetings, filing of EIAs and Meeting Reports etc, will demand increased efficiency and management of the Treaty Consultative Meetings.

The Danish delegation supports the notion of a secretariat to service these tasks. Therefore such a body would prove particularly helpful for Non-Consultative Parties.

The Danish delegation emphasises the urgency of elaborating the annexes on protected areas and liability; the spirit of the Environmental Protocol should also be applied to the conclusion of these Annexes.

The Danish delegation looks forward to the further development of the co-operative spirit which has been such a key element during the first thirty years of the Treaty. It is important that the Treaty system shows itself to be open to criticism, transparent in management and efficient; we must make our achievements publicly known and available.

Thank you, Mr Chairman.

**OPENING ADDRESS BY DR EMMANUEL GOUNARIS,
HEAD OF THE DELEGATION OF GREECE**

Mr Chairman,

First of all, I would like to congratulate you on your election as Chairman for the XVIth Antarctic Treaty Consultative Meeting.

I wish also to express the appreciation of my Delegation to the Government of the Federal Republic of Germany for the magnificent hospitality shown to us all during this Consultative Meeting in the beautiful, already unified Germany.

Mr Chairman,

On behalf of my Government I would like to express its satisfaction for the adoption and signing by the majority of the Antarctic Treaty Parties, of the Protocol on Environmental Protection to the Antarctic Treaty. During the XVth Antarctic Consultative Meeting in Paris, and also during the XIth Special Consultative Meeting in Viña del Mar and in Madrid my Delegation has pointed out views, which in the framework of the above mentioned Protocol have been justified. Greece can be proud for this outcome.

Mr Chairman,

The designation of the Antarctic Treaty area as a natural reserve devoted to peace and science, where mining is prohibited and the environment is subject to a comprehensive binding regime of protection, will further strengthen the Treaty system.

Greece has already signed this Protocol and will be very soon among those states which will have ratified this legal instrument. However, Mr Chairman, it is very important for all the Antarctic Treaty Parties to apply provisionally the Environmental Protocol from now.

Finally, Mr Chairman, I would like to thank the Governments of Chile and Spain for the Secretariat facilities provided as well as the magnificent hospitality shown to us all in Viña del Mar and in Madrid throughout the negotiations. My thanks go also to Ambassador Andersen of Norway for the elaboration of the Environmental Protocol.

Thank you, Mr Chairman.

**OPENING ADDRESS BY MR DOK SAM LI, HEAD OF THE DELEGATION
OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA**

Distinguished Chairman, Honourable Delegates,

It is now two years since the XVth Antarctic Treaty Consultative Meeting was held in Paris in October 1989 and thirty years since the Antarctic Treaty first came into force in June 1961. In the present instance, I should like to thank you, Mr Chairman and dear Delegates, for your praiseworthy efforts in making the preparations for this XVIth Antarctic Treaty Consultative Meeting.

Over these past thirty years, setting out as we did from the ideals and goals of the Antarctic Treaty, according to which the continent should be used exclusively for peaceful purposes and should not become the scene or object of international discord, we have managed, notwithstanding occasional reversals of fortune, to achieve a fair measure of success in protecting the Antarctic environment and its dependent ecosystems.

Proof of this can indeed be seen from the fact that the 2nd session of the XIth Special Consultative Meeting was able to adopt the Protocol on Environmental Protection to the Antarctic Treaty, which represents a new international order of things with regard to the use of Antarctica as a centre for scientific research. Moreover, the 12 States which became Parties to the Treaty when it was first signed have now increased to 40.

Since all these accomplishments under the Antarctic Treaty system are due to the considerable efforts deployed by the Parties to the Treaty in their bid to engage in all manner of human activities consistent with the Treaty's spirit and goals, I wish to make a point of re-affirming our readiness to do all we can to encourage this positive movement.

I consider that the success of our Meeting can only come about through the praiseworthy efforts which all the Parties will be making to ensure that all the items on the agenda of the XVIth Consultative Meeting will be discussed in keeping with the spirit and goals of the Antarctic Treaty and the ideals epitomised by the Parties.

I should like to take this opportunity of stating again that I shall spare no effort to ensure the success of our Meeting. I should also like to voice the hope that the Delegates assembled here will likewise join in that effort.

Thank you.

**OPENING ADDRESS BY AMBASSADOR DR LUCIUS CAFLISCH,
HEAD OF THE DELEGATION OF SWITZERLAND**

As the XVIth Consultative Meeting is about to commence, the Delegation of Switzerland wishes to convey its thanks to the authorities of the Federal Republic of Germany for the most cordial and friendly welcome extended to the delegations and for the preparations they have made for the proceedings.

The Swiss Delegation wishes to express its pleasure at the accession of Guatemala to the Antarctic Treaty of 1 December 1959. Indeed, it believes that the Treaty's goals - maintenance of a demilitarised and nuclear-free zone, freedom of scientific research and international co-operation in that area - have to be shared by a significant number of the members of the international community, including countries of the southern hemisphere in particular. With Guatemala's membership of the 1959 Treaty, the effectiveness and performance of the Antarctic system are enhanced.

Another important step forward was taken on 4 October, with the opening for signature of the Protocol to the 1959 Antarctic Treaty concerning environmental protection. In order to achieve that result, the negotiators had to show proof of considerable abnegation, since it was necessary to set aside the recently concluded Wellington Convention on mining activities. If the Protocol on Environmental Protection is applied properly and effectively - and there is nothing to suggest that it will not be - nobody in future will be able to deny the fact that the Contracting Parties to the 1959 Treaty are managing the white continent and its resources in the interests of mankind by preserving a natural environment whose fragility and overall importance are both well known.

Environmental protection and resource conservation are two concepts that will have to be borne in mind when it comes to drawing up rules and regulations governing tourism in Antarctica. Tourist activities probably do not present the same dangers as mining operations or over-exploitation of wildlife resources - at least not at first sight and in the immediate future. Even so, the Swiss Delegation considers that, while Antarctic tourism need not be altogether prohibited, it has to be severely restricted by means of such measures as barring access to ecologically fragile areas, preventing animal colonies from being disturbed, placing limitations on or banning overflying, laying down specific routes, limiting the number of tourists and forbidding the construction of hotels on the sixth continent. Failing the adoption of such measures,

coupled with an appropriate verification system, the sacrifices made for the sake of protecting the environment are liable to be in vain.

The Antarctic system is growing increasingly complex as every year goes by. This is due to the fact that there are now a very large number of agreed recommendations and measures which have not been classified in a readily accessible manner. In particular, it has to be asked which of the measures relating to environmental protection will continue to be applicable after the entry into force of the Madrid Protocol. It is for these reasons that the Swiss Delegation supports the suggestion on this point put forward by China.

The debate on the institutionalisation of the Antarctic system is still going on. The system appears to have given complete satisfaction for thirty years, without any need having been felt for setting up an international body. In the opinion of the Swiss Delegation, this situation militates in favour of maintaining the status quo. Needless to say, if institutionalisation of the Antarctic system were nevertheless deemed to be inevitable because of its growing complexity, strict care would have to be taken to ensure that that the proposed body would be both on a modest scale and effective. Moreover, it would probably be necessary to consider to what extent the non-consultative Contracting Parties could be associated in the management of the future body and, in particular, what financial contributions they would be required to make. The Parties in question could obviously not be expected to bear part of the financial burden arising out of possible institutionalisation without their position within the Antarctic system being generally reviewed.

The adoption, in Madrid, of the Protocol on the Environment has certainly given an added boost to the Antarctic system. Let us take advantage of this renewed impetus to deal successfully with the many difficult tasks lying before the XVIth Consultative Meeting.

ANNEX B

REPORTS ON THE OPERATION OF THE ANTARCTIC TREATY SYSTEM

(i)

**STATEMENT BY THE CCAMLR OBSERVER AT THE XVIth ANTARCTIC TREATY
CONSULTATIVE MEETING
(COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING
RESOURCES (CCAMLR))¹**

1. CCAMLR is pleased to accept the invitation of the Antarctic Treaty Parties to attend the XVIth ATCM and welcomes the opportunity to inform Consultative Parties of development in its work.

NEW MEMBERSHIPS AND ACCESSIONS

2. Since the last Antarctic Treaty Consultative Meeting, Italy and Sweden have become Members of the Commission and the Netherlands has acceded to the Convention. A list of Members and Acceding States is included at Appendix A.

CURRENT LEVELS OF FISHING AND MANAGEMENT MEASURES

Krill

3. Krill is the most important species being fished in the Convention Area with a total annual catch of around 400 000 tonnes. Most of this is taken in the South Atlantic, in the Antarctic Peninsula region, from around the South Orkney Islands and South Georgia.

4. Estimates of the global sustainable yield of krill vary greatly, but compared to the most conservative estimates, the current level of catch is rather small. There is concern, however, that because fishing is concentrated in a few relatively small areas it could be having an impact on krill predators which forage within these areas.

¹ **Note:** This Statement does not take into account developments at the Xth Meeting of CCAMLR which ended four days before the opening of the XVIth ATCM.

5. The Scientific Committee has advised that, given the current state of knowledge of krill biology and ecology and thus the ability to estimate its abundance and distribution, it is not possible now nor likely to be possible in the near future to provide more precise estimates of the sustainable yield.

6. At the 1990 Commission Meeting, it was proposed that, in light of this advice, precautionary measures should be adopted for the krill fishery until such time as more precise information is available. Such measures would be a safeguard against a sudden increase in the level of catch which may be detrimental to krill predators, and would allow the krill fishery to develop in controlled manner.

7. Krill fishing Members argued that current scientific evidence does not support the imposition of regulatory measures and, since it was not their intention to dramatically increase their fishing effort or their catches in the near future, there was no need to regulate the fishery.

8. The Working Group on Krill met in Leningrad (St. Petersburg) and made substantial progress in establishing a scientific foundation which may enable the Commission, acting upon the advice of the Scientific Committee, to conservatively limit fishing.

Finfish

9. The harvesting of finfish in the Convention Area is now focused on three species, Mackerel icefish (*Champsocephalus gunnari*), Patagonian toothfish (*Dissostichus eleginoides*) and the Lantern fish (*Electrona carlsbergi*) and is confined to the South Atlantic and around the Kerguelen Islands in the Southern Indian Ocean.

10. Fishing for icefish and toothfish is regulated by the Commission through the setting of total allowable catches and prohibited areas. As yet, no regulations have been placed on fishing for lantern fish.

11. Scientific survey results have provided little or no evidence of the recovery of populations of fish species that the Commission has sought to protect through regulation.

12. On the basis of advice that this could be due to the incidental taking of young fish in krill trawls, the Commission has agreed that it might be necessary to close nursery

areas to the krill fishery at certain times of the year and has asked the Scientific Committee to identify such areas for closure.

DRIFTNET FISHING IN THE CONVENTION AREA

13. Although no driftnet fishing has ever been reported in the Convention Area, Members of the Commission have repeatedly expressed their concern over the possible impact that this highly indiscriminate method of fishing could have if introduced into the Area. To this end, the Commission agreed (in accordance with UN Resolution 44/225) that there will be no expansion of large scale pelagic driftnet fishing into the high seas of the Convention Area.

NEW AND DEVELOPING FISHERIES

14. An important principle with regard to the management of new and developing fisheries is that their development be directly linked with the process of elaborating scientific advice and management procedures. A draft conservation measure was submitted for discussion at the last meeting of the Commission, requiring the submission of information which would allow an assessment of the likely impact of a fishery and the subsequent adoption of any necessary regulations to apply before that fishery is allowed to develop.

15. The Commission agreed that such a measure is necessary and will consider the matter in detail at the 1991 meeting. With the assistance of other international organisations, the Executive Secretary has prepared a working paper and the Scientific Committee has included an item on this subject on its current agenda.

MARINE MAMMALS AND BIRDS

16. CCAMLR provided financial support for a workshop, jointly sponsored with SCAR, to study the problem of declining Southern Elephant seal populations. The workshop was held in Santa Cruz, California in May 1991 and the Report will be considered by the Commission in October.

17. The Commission has agreed that the conduct of longline fisheries in the Convention Area should be regulated so as to minimise the incidental killing of seabirds. Members agreed to implement a list of measures for this purpose in the 1990/91 season and to consider incorporating appropriate measures into a formal conservation measure at the next meeting.

PROTECTION OF CEMP SITES

18. The Commission has adopted a Conservation Measure providing for the protection of sites where colonies of seabirds and seals are being monitored as part of the CCAMLR Ecosystem Monitoring Program (CEMP). The measure provides for the introduction of a management plan for each site, specifying, in particular, conditions of access and activities that are prohibited.

19. The procedure involves consultation with the Antarctic Treaty Consultative Parties and SCAR. A copy of the Conservation Measure is attached (Appendix B).

ANTARCTIC SCIENCE CONFERENCE

20. A poster describing the objectives and current work of CCAMLR was presented at the Antarctic Science Conference held in Bremen in September 1991.

NEW PUBLICATIONS

21. Volume 3 of the CCAMLR Statistical Bulletin covering the years 1981 to 1990 is now available. Volumes 1 and 2 contain all data for the years 1970 to 1989.

22. A new, considerably revised edition of CCAMLR Standard Methods for Monitoring Studies is now available from the Secretariat. This edition contains all methods adopted by the CCAMLR Scientific Committee for monitoring predator and environmental parameters in accordance with the CCAMLR Ecosystem Monitoring Program (CEMP). Methods for monitoring prey parameters are still under development and will be published in a future edition.

23. Awareness of CEMP among CCAMLR Members and in the scientific community generally will be promoted through a recently-published information brochure describing the aims, principles and operations of CEMP.
24. A booklet describing the aims, principles and operations of CCAMLR itself has also been published recently.
25. A new volume of the CCAMLR Scientific Papers is in preparation. This volume will contain 35 scientific papers selected for publication by the CCAMLR Editorial Board out of more than 170 scientific papers considered by the CCAMLR Scientific Committee and its working groups last year. The volume will be published in September 1991.
26. Most of the CCAMLR publications are produced in English, French, Russian and Spanish and all are available on request from the Secretariat.

INSPECTION AND SCIENTIFIC OBSERVATION

27. The CCAMLR Inspection System was described in the report presented by the CCAMLR Observer to the XVth ATCM (Paris, 1989). No reports of inspections have been received by the Secretariat but a total of 40 inspectors were nominated by Argentina, Australia, Chile, Poland, Spain, United Kingdom, USA and USSR for the period 1990-91.
28. At its last meeting the Commission began discussion of the establishment of a scheme of international scientific observation as required by the Convention (Article XXIV). Gathering and validation of scientific data as well as recognition of the value of bilateral co-operation in strengthening a multilateral observation scheme are some of the guiding principles of this endeavour.

ENVIRONMENTAL PROTOCOL

29. At the Xth CCAMLR Meeting, the Commission will receive a report from its Observer at the XIth Special Consultative Meeting (Viña del Mar, 1990 - Madrid, 1991) and consider its position with regard to the Protocol on Environmental Protection, and

include in its own Report its understanding of the operation of the Madrid Protocol in so far CCAMLR is concerned.

OBSERVERS AND INTERNATIONAL CO-OPERATION

30. During the intersessional period, CCAMLR was represented at the 43rd Meeting of the IWC. CCAMLR and SCAR jointly sponsored a workshop on the declining Southern Elephant seal populations referred to in paragraph 16. The Xth Meeting of CCAMLR will be attended by Observers from SCAR, FAO, IOC, IUCN, IWC, SCOR and ASOC. CCAMLR has benefitted from the co-operative advice of other fisheries and conservation commissions with regard to the concepts of "new fisheries" and "international scientific observation". At the suggestion of its Chairman, an item has been included in the preliminary agenda of its Xth Meeting concerning CCAMLR's contribution to the World Conference on Environment and Development.

APPENDIX A

MEMBERSHIP OF THE COMMISSION
FOR THE CONSERVATION OF ANTARCTIC
MARINE LIVING RESOURCES

Argentina
Australia
Belgium
Brazil
Chile
European Economic Community
France
Germany
India
Italy
Japan
Korea
New Zealand
Norway
Poland
South Africa
Spain
Sweden
Union of Soviet Socialist Republics
United Kingdom
United States

States that have acceded to the Convention but are not Members of the Commission as at October 1991 are:

Canada
Finland
Greece
Netherlands
Peru
Uruguay

APPENDIX B

CONSERVATION MEASURE 18/IX PROCEDURE FOR ACCORDING PROTECTION TO CEMP SITES

The Commission,

Bearing in mind that the Working Group for the CCAMLR Ecosystem Monitoring Program (WG-CEMP) has established a system of sites contributing data to the CCAMLR Ecosystem Monitoring Program (CEMP), and that additions may be made to this system in future;

Recalling that it is not the purpose of the protection accorded to CEMP sites to restrict fishing activity in adjacent waters;

Recognizing that studies being undertaken at CEMP sites may be vulnerable to accidental or wilful interference;

Concerned, therefore, to provide protection for CEMP sites, scientific investigations and the Antarctic marine living resources therein, in cases where a Member or Members of the Commission conducting or planning to conduct CEMP studies believes such protection to be desirable;

hereby adopts the following Conservation Measure in accordance with Article IX of the Convention:

1. In cases where a Member or Members of the Commission conducting, or planning to conduct, CEMP studies at a CEMP site believe it desirable that protection should be accorded to the site, it, or they, shall prepare a draft management plan in accordance with Annex A to this Conservation Measure;
2. Each such draft management plan shall be sent to the Executive Secretary for transmission to all Members of the Commission for their consideration at least three months before its consideration by the WG-CEMP;

3. The draft management plan shall be considered in turn by the WG-CEMP, the Scientific Committee and the Commission. In consultation with the Member or Members of the Commission which drew up the draft management plan, it may be amended by any of these bodies. If a draft management plan is amended by either the WG-CEMP or the Scientific Committee, it shall be passed on in its amended form either to the Scientific Committee or to the Commission as the case may be;
4. If, following completion of the procedures outlined in paragraphs 1 to 3 above, the Commission considers it appropriate to accord the desired protection to the CEMP site, the Commission shall adopt a Resolution calling on Members to comply, on a voluntary basis, with the provisions of the draft management plan, pending the conclusion of action in accordance with paragraphs 5 to 8 below;
5. The Executive Secretary shall communicate such a Resolution to SCAR, the Antarctic Treaty Consultative Parties and, if appropriate, the Contracting Parties to other components of the Antarctic Treaty system which are in force;
6. Unless, before the opening date of the next regular meeting of the Commission, the Executive Secretary has received:
 - (i) an indication from an Antarctic Treaty Consultative Party that it desires the resolution to be considered at a Consultative Meeting; or
 - (ii) an objection from any other quarter referred to in paragraph 5 above;

the Commission may, by means of a conservation measure, confirm its adoption of the management plan for the CEMP site and shall include the management plan in Annex B to Conservation Measure 18/IX;

7. In the event that an Antarctic Treaty Consultative Party has indicated its desire for the resolution to be considered at a Consultative Meeting, the Commission shall await the outcome of such consideration, and may then proceed accordingly;
8. If objection is received in accordance with paragraphs 6(ii) or 7 above, the Commission may institute such consultations as it may deem appropriate to achieve the necessary protection and to avoid interference with the achievement

of the principles and purposes of, and measures approved under, the Antarctic Treaty and other components of the Antarctic Treaty system which are in force;

9. The management plan of any site may be amended by decision of the Commission. In such cases full account shall be taken of the advice of the Scientific Committee. Any amendment which increases the area of the site or adds to categories or types of activities that would jeopardise the objectives of the site shall be subject to the procedures set out in paragraphs 5 to 8 above;
10. Entry into a CEMP site included in Annex B shall be prohibited except for the purposes authorised in the relevant management plan for the site and in accordance with a permit issued under paragraph 11;
11. Each Contracting Party shall, as appropriate, issue permits authorizing its nationals to carry out activities consistent with the provisions of the management plans for CEMP sites and shall take such other measures, within its competence, as may be necessary to ensure that its nationals comply with the management plans for such sites;
12. Copies of such permits shall be sent to the Executive Secretary as soon as practical after they are issued. Each year the Executive Secretary shall provide the Commission and the Scientific Committee with a brief description of the permits that have been issued by the Parties. In cases where permits are issued for purposes not directly related to the conduct of CEMP studies at the site in question, the Executive Secretary shall forward a copy of the permit to the Member or Members of the Commission conducting CEMP studies at that site; and
13. Each management plan shall be reviewed every five years by the WG-CEMP and the Scientific Committee to determine whether it requires revision and whether continued protection is necessary. The Commission may then act accordingly.

CONSERVATION MEASURE 18/IX: ANNEX A

INFORMATION TO BE INCLUDED IN MANAGEMENT PLANS FOR CEMP SITES

Management plans shall include:

A. GEOGRAPHICAL INFORMATION

1. A description of the site, and any buffer zone within the site, including:
 - (a) geographical co-ordinates;
 - (b) natural features;
 - (c) boundary markers;
 - (d) natural features that define the site;
 - (e) access points (pedestrian, vehicular, airborne, sea-borne);
 - (f) pedestrian and vehicular routes in the site;
 - (g) preferred anchorages;
 - (h) location of structures within the site;
 - (i) areas or zones within the site, described in generic or geographical terms, or both, in which activities are prohibited or otherwise constrained;
 - (j) location of nearby scientific stations, research or refuge facilities; and
 - (k) location of areas or sites, in or near the site, which have been accorded protected status in accordance with measures adopted under the Antarctic Treaty or other components of the Antarctic Treaty system which are in force.

2. Maps showing:
 - (a) the location of the site in relation to major surrounding features; and
 - (b) where applicable, the geographical features listed in paragraph 1 above.

B. BIOLOGICAL FEATURES

1. A description of the biological features of the site, in both space and time, which it is the purpose of the management plan to protect.

C. CEMP STUDIES

1. A full description of the CEMP studies being conducted or planned to be conducted, including the species and parameters which are being or are to be studied.

D. PROTECTION MEASURES

1. Statements of prohibited activities:

- (a) throughout the site at all times of the year;
- (b) throughout the site at defined parts of the year;
- (c) in parts of the site at all times of the year; and
- (d) in parts of the site at defined parts of the year.

2. Prohibitions regarding access to and movement within or over the site.

3. Prohibitions regarding:

- (a) the installation, modification, and/or removal of structures; and
- (b) the disposal of waste.

4. Prohibitions for the purpose of ensuring that activity in the site does not prejudice the purposes for which protection status has been accorded to areas or sites, in or near the site, under the Antarctic Treaty or other components of the Antarctic Treaty system which are in force.

E. COMMUNICATIONS INFORMATION

1. The name, address, telephone, telex and facsimile numbers of:

- (a) the organisation or organisations responsible for appointing national representative(s) to the Commission; and
- (b) the national organisation or organisations conducting CEMP studies at the site.

Notes:

1. **A code of conduct.** If it would help towards achieving the scientific objectives of the site, a code of conduct may be annexed to the management plan. Such a code should be written in hortatory rather than mandatory terms, and must be consistent with the prohibitions contained in Section D above.

2. Members of the Commission preparing draft management plans for submission in accordance with this Conservation Measure should bear in mind that the primary purpose of the management plan is to provide for the protection of CEMP studies at the site through the application of the prohibitions contained in Section D. To that end, the management plan is to be drafted in concise and unambiguous terms. Information which is intended to help scientists, or others, appreciate broader considerations regarding the site (e.g., historical and bibliographic information) should not be included in the management plan but may be annexed to it.

(ii)

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 1989 to the present. Events prior to October 1989 were reported to the XIVth and XVth Antarctic Treaty Consultative Meetings, (see Annexes D and B of the respective Final Reports).
2. On 28 February 1990, the Depositary Government indicated by Diplomatic Note to all Contracting Parties that nine notifications approving the recommended amendments to the Annex to the Convention agreed at the meeting convened in London in 1988 (set out in paragraphs 21, 31 and 36 of its Report), had been received. By the same time no objections to the amendments had been received. In accordance with Article 9 (2) of the Convention these amendments to the Annex became effective on 27 March 1990. Extracts of the relevant paragraphs of the 1988 Report are attached for information (Annex A to this report).
3. On 4 October 1990, an Instrument of Accession to CCAS was lodged with the Depositary Government by the Government of Canada. The date on which the provisions of the Convention came into force in respect to the Government of Canada was 3 November 1990.
4. On 11 February 1991, an Instrument of Accession to CCAS was lodged with the Depositary Government by the Government of Brazil. The date on which the provisions of the Convention came into force in respect of the Government of Brazil was 13 March 1991.
5. On 5 July 1991, the Depositary Government circulated, by telegram to all Contracting Parties, a draft letter replying to a request for information on the Convention from the Secretary-General of the United Nations Conference on the Environment and Development (UNCED). A copy of the letter sent to the Secretary-General of UNCED on 12 July 1991 is attached (Annex B to this report).
6. States which are signatories to CCAS or which have acceded to the Convention or which have been invited to so accede have been kept informed of developments involving the Convention by receiving copies of the relevant diplomatic correspondence.

ANNEX A

Relevant Extracts from the Report of the 1988 Meeting to Review the Operation of the Convention for the Conservation of Antarctic Seals.

Para 19 (a)

- (a) the existing requirement for information to be provided by SCAR by 31 October each year meant that the Contracting Parties would not be able to have the benefit of SCAR's advice until after a further sealing season had begun. Since this had implications for the proper operation of the Convention, it was considered that the following dates could, with advantage, be changed to overcome this problem:

Section 1: for 1 July to 30 June read 1 March to the last day in February.

Section 6 (a): for 31 October read 30 June and for 1 July to 30 June read 1 March to the last day in February;

Para 21

Representatives, pursuant to paragraph 19 (a) above, agreed to recommend for approval by their respective Governments, that the Annex be changed in the following way:

Section 1: for 1 July to 30 June read 1 March to the last day in February.

Section 6 (a): for 31 October read 30 June and for 1 July to 30 June read 1 March to the last day in February;

Consistency and Co-operation with Other Components of the Antarctic Treaty System (Agenda Item 6 (v))

Para 30

Representatives reviewed developments in the Antarctic Treaty system since the Convention came into force in 1978. They considered it desirable and appropriate that there should be co-operation between the Contracting Parties to separate instruments within the system. They agreed that such co-operation would best be expressed by the fullest possible exchange of information between the Contracting Parties to these instruments, relevant institutions of the Antarctic Treaty system, such as the Commission for the Conservation of Antarctic Marine Living Resources, and SCAR.

Para 31

Accordingly, they agreed on the text of the following amendment to the Annex (new paragraph 8) which they recommended to the Governments of Contracting Parties for their approval.

"8: Co-operation

The Contracting Parties to this Convention shall, as appropriate, cooperate and exchange information with the Contracting Parties to the other international instruments within the Antarctic Treaty system and their respective institutions."

Para 35

In the case of Weddell seals, it was agreed that locally concentrated stocks are highly vulnerable during the breeding season, warranting the extension of protection at that time to include the pups.

Para 36

Representatives, noting that they agreed on the desirability of extending the protection afforded to Weddell seals to include pups during the breeding season, agreed to recommend to Governments the deletion in section 2 of the Annex of the words "one year old or older".

ANNEX B

22 July 1991

Mr Maurice F Strong
Secretary-General
UN Conference on Environment and Development
160, route de Florissant
P.O.Box 80
CH-1231 Conches
SWITZERLAND

In reply to your letter to H E Mr Martin Morland of 5 June, the United Kingdom, acting in its capacity as Depository for the Convention for the Conservation of Antarctic Seals (CCAS), has pleasure in providing the following information about the Convention and the meeting held in 1988 to review its operation.

1. CCAS is concerned with the conservation of Antarctic seals. The Convention was adopted at a conference in London in 1972, following preliminary negotiations at earlier Antarctic Treaty Consultative Meetings. It entered into force in 1978. A list of Contracting Parties is attached.
2. The Convention was designed to augment the Antarctic Treaty's 1964 Agreed Measures for the Conservation of Antarctic Fauna and Flora. These Agreed Measures, like the Antarctic Treaty itself, are without prejudice to the rights or the exercise of the rights of any State under international law with regard to the high seas within the Antarctic Treaty Area. The Agreed Measures did not, therefore, provide for the conservation of seals on Antarctic pack ice far from land. Moreover, the conservation of Antarctic seals was seen as being a matter in which, in addition to Antarctic Treaty States, other States might have an interest. It was for these reasons that an international instrument, separate from the Antarctic Treaty, was negotiated.
3. CCAS was intended to regulate potential commercial sealing operations which, at the time it was negotiated, seemed a likely prospect (but see para 6 below). As such, it was the first international agreement to provide for the regulations of an industry before it developed.

4. CCAS sought to provide a framework for the protection of all seal species in Antarctic waters in advance of commercial operations in a manner which could be supplemented in the light of experience. It aimed at conserving stocks so that, should any harvesting be contemplated, there would be no significantly harmful effect on total seal stocks or on the ecological system in any particular locality. The Convention provides that until such time as a CCAS Commission might be established following the development of commercial sealing, the Scientific Committee on Antarctic Research (SCAR) would provide advice to the Parties to CCAS.

5. The Convention makes provision for the adoption of Annexed measures prescribing:
 - "(a) permissible catch;
 - (b) protected and unprotected species;
 - (c) open and closed seasons;
 - (d) open and closed areas, including the designation of reserves;
 - (e) the designation of special areas where there shall be no disturbance of seals;
 - (f) limits relating to sex, size, or age for each species;
 - (g) restrictions relating to time of day and duration, limitations of effort and methods of sealing;
 - (h) types and specifications of gear and apparatus and appliances which may be used;
 - (i) catch returns and other statistical and biological records;
 - (j) procedures for facilitating the review and assessment of scientific information;
 - (k) other regulatory measures including an effective system of inspection."

The Annex to the Convention sets out measures relating to (a)-(e), (g), (i) and (j) above.

6. In the period since the Convention was adopted there has been no commercial sealing in Antarctica, nor is any foreseen. No CCAS Commission has been established and the SCAR Group of Specialists on Seals continues to advise the Parties.

7. The operation of CCAS is subject to review. Such a review was held in London in 1988. The meeting accepted the conclusions of the SCAR Group of Specialists on Seals that:
 - the number of seals killed or captured under special permit (see Article 4 Convention) had been low and could not be considered to have had any significant adverse effect on any seal populations;
 - over the period 1964-85, 10,142 seals had been reported killed or captured, averaging 483 per year;
 - for the 10-year period 1964/65 to 1973/74, 6,949 seals had been taken, averaging 695 per year;
 - for the 11-year period 1974/75 to 1984/85, 3,193 seals had been taken, averaging 290 per year;
 - the difference in the take of seals between the two periods reflected the reduction in seals killed as food for sledge dog teams as they were replaced by mechanical transport; and that
 - the Group saw no cause for concern that these catches were having a significantly harmful effect on the local or the total stocks of the species concerned, nor on the ecological system in any particular locality.

8. As a consequence of the review meeting, three amendments to the Annex are now in force relating to exchange of information, co-operation and conservation of Weddell Seals; these are set out in paragraphs 21, 31 and 36 of the report of the meeting.

9. Copies of the reports of the 1972 Conference and the 1988 review meeting are enclosed.

10. The Parties to CCAS have been consulted about this reply to your letter.

Dr J A Heap
Polar Regions Section
South Atlantic and Antarctic Department

**CONTRACTING PARTIES TO THE CONVENTION FOR THE CONSERVATION
OF ANTARCTIC SEALS (CCAS) AS AT 22 JULY 1991**

Argentina

Australia

Belgium

Brazil

Canada

Chile

Germany

France

Japan

Norway

Poland

South Africa

Union of Soviet Socialist Republics

United Kingdom of Great Britain and Northern Ireland

United States of America

(iii)

**REPORT FROM THE SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH
(SCAR) TO THE XVIth ANTARCTIC TREATY CONSULTATIVE MEETING**

**A framework for Antarctic science into the XXIst Century:
SCAR perspectives on Antarctic research and management**

The Antarctic Treaty system has provided a successful framework for the promotion of international co-operation in Antarctic research as developed during the International Geophysical Year, 1957-58. Since that time, many changes have taken place in science and in other national and international interests in the Antarctic. It is now timely to review the requirements for future Antarctic research. The increasing appreciation around the world of the importance of the Antarctic in the global climate and environmental systems makes it imperative that strong support be given to Antarctic research as promoted by SCAR and other international science groups. This paper presents the views of SCAR on problems and issues that need to be addressed in order to facilitate Antarctic research into the XXIst Century,

1. Executive Summary

1.0 The current political regime for the Antarctic stemmed from international scientific co-operation in 1957-58, and although SCAR is not explicitly mentioned in the Antarctic Treaty it was encouraged by the Antarctic Treaty Consultative Parties (ATCPs) from the First Antarctic Treaty Consultative Meeting (ATCM) in 1961. For over thirty years since then SCAR has provided scientific advice to the Antarctic Treaty system (ATS) at virtually no cost to that system.

1.1 SCAR advice has been influential in the development of the Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964), in particular the Protected Areas system. SCAR was formally given a special role in the CCAS (1972). It also responded to requests for advice on possible environmental

impacts of mineral exploration in reports published in 1979 and 1985. In 1976 it formulated and then implemented a 15 year international programme - BIOMASS - in response to a request from the ATCPs for information on the study and conservation of marine living resources. This programme led to, and has been an important source of advice for CCAMLR (1980).

- 1.2 SCAR had no involvement in the formulation of CRAMRA (subsequently rejected) and has been involved only as an Observer in discussions on the Protocol on Environmental Protection (PEP) signed in 1991. SCAR is given observer status in the scientific committees of CCAMLR and the Protocol's Committee on Environmental Protection (CEP). The complimentary role of SCAR and the Scientific Committee of CCAMLR is now well-defined as a result of co-operative work, but its actual role in relation to the CEP has yet to be established.
- 1.3 A new factor emerged in the 1980s with the activities of environmentalist pressure groups, co-ordinated by ASOC, leading to potential conflicts between environmental protection and scientific activities. Many Antarctic scientists have been disconcerted to find their sustained efforts in environmental protection belittled or ignored in the media. The last ATCM in 1989 renewed the commitment to the support of scientific research, but the words have not yet been backed by action. Politicians need to take account of the views of the scientific community, expressed through SCAR, before making new laws.
- 1.4 Thus, SCAR is concerned at the possible diminution of its role in relation to the ATS and the effect this may have on freedom of scientific investigation and co-operation. Excessive regulation or direction could lead to unproductive use of scientific capacity and funds. It is ironic that just when the value of Antarctic research to understanding global problems has begun to be recognised by the ATCPs, the environmental impact of scientific activities in the Antarctic has begun to be questioned in some quarters.
- 1.5 SCAR has two primary objectives: to co-ordinate, promote co-operation and initiate new research; and to provide expert advice on scientific, environmental and conservation matters to the ATS. Both are more complex than in the past and limitations on human and financial resources makes it more difficult to achieve them.

1.6 The current specific concerns of SCAR are:

- inadequate funding, which may prevent SCAR giving advice on management, leading to a decline in influence;
- duplication of scientific effort in management;
- diversion of funds from primary science to monitoring;
- the disproportionate influence of environmental pressure groups;
- misconceptions about the nature of Earth science research in the Antarctic.

1.7 Antarctic scientists are generally concerned that governments may respond positively to public relations pressure campaigns of some environmental NGOs with quite different objectives to those of scientists.

1.8 Antarctic affairs are now entering a new phase, the full implications of which are as yet unclear. The next few years will be critical to the survival of the mutually beneficial relationship between SCAR and the ATCPs.

1.9 There are three international fora in which decisions are made about actions in the Antarctic - SCAR which is concerned with science, COMNAP, which is concerned with resources and support for science, and the ATCMs which are about Antarctic laws, the underlying framework for human activities. The urgent need is to develop in these three fora, clear ideas as to what their functions are and to ensure that they can work together in a complementary way.

1.10 If the ATCPs do not give reasonable weight to the views of SCAR and if SCAR is unable to attract the relatively substantial (but absolutely small) extra funds required it may be obliged to concentrate on primary science and withdraw from giving advice on applied or management problems. The ATCPs have not responded to SCAR requests for extra funding to enable it to carry out the applied science function. To help SCAR reach a decision it asks the ATCPs to make clear their intentions.

2. Historical background

2.0 The current political regime for the Antarctic stemmed from the activities of the non-governmental International Council of Scientific Unions (ICSU) in planning and implementing the International Geophysical Year (IGY) in 1957-58.

Antarctica was chosen for particular attention because of its influence on global weather, atmosphere and oceans and throughout the planning period, politics were firmly kept in the background, although elsewhere the "Cold War" held sway. So successful was the IGY that it was extended for a further year and the opportunity was taken to set up a permanent system to promote Antarctic science. ICSU established the Special Committee on Antarctic Research (SCAR) in 1958; the name was later changed to Scientific Committee on Antarctic Research in 1961.

- 2.1 This led indirectly to the signing of the Antarctic Treaty. The US Government took the initiative in May 1958 by proposing to the eleven other nations active in Antarctica that a treaty should be drawn up to *set aside the continent for peaceful purposes - especially scientific research*. A conference was set up in Washington in October 1959, and the Treaty entered into force on 23 June 1961, initially with twelve Antarctic Treaty Contracting Parties (ATCPs).
- 2.2 SCAR is not explicitly mentioned in the Treaty, but in the report of the First Antarctic Treaty Consultative Meeting (ATCM) (1961) SCAR was referred to in various Recommendations. Thus, Recommendation I-4 stated "(1) that the free exchange of information and views among the scientists participating in SCAR, and the Recommendations ... formulated by this body constitute a most valuable contribution to international scientific co-operation in Antarctica; (2) that ... SCAR should be encouraged to continue this advisory work which has so effectively facilitated international co-operation in scientific investigation." The high regard of the ATCPs for SCAR - a non-governmental organisation (NGO) - continued for many years and whenever they were in need of scientific advice concerning Antarctica, they came to SCAR. Formal Recommendations of the ATCMs convey these requests for advice and information to SCAR. Some 186 Recommendations have been accepted at the ATCMs, ranging over a wide range of topics, with particular emphasis on conservation and environmental protection; a large proportion required action by SCAR. This continues and has increased; at the XV ATCM in 1989 twelve requests for advice were addressed to SCAR.
- 2.3 Thus SCAR has consistently made positive responses to the ATCPs over the last thirty years. The many requests for advice have involved a great deal of work by SCAR scientists, the holding of meetings and workshops and the publishing of reports and documents, to all of which SCAR has committed considerable funds. This advice has contributed significantly to the success of the Antarctic Treaty

system (ATS), particularly in matters relating to the environment and conservation, including the initial formulation of the Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964). Over the years SCAR advice has been influential in the evolution of the Agreed Measures, particularly in the development of the Protected Area system, described in a comprehensive SCAR publication *Protected Areas in the Antarctic* (1985). Other relevant publications since 1980 include: *A Visitor's Introduction to the Antarctic and its Environment* (1980); *Man's Impact on the Antarctic Environment* (1985); *Antarctic Environmental Implications of Possible Mineral Exploration and Exploitation (AEIMEE)* (1986); *Waste Disposal in the Antarctic* (1989). (In 1988 SCAR established the interdisciplinary Group of Specialists on Environmental Affairs and Conservation (GOSEAC) to review and develop the then current arrangements for the environment and conservation).

- 2.4 In the 1960s and 1970s SCAR continued to be highly regarded by the Antarctic Treaty Consultative Parties (ATCPs). Thus, arrangements under the Antarctic Treaty could not give protection to seals in the sea or on floating ice, because states expressly reserved their rights to the high seas. From 1964 SCAR was active in considering the control of pelagic sealing and this initiative was recognised by ATCM Recommendation IV-22 (1966); at the same time the Consultative Parties were considering the form of an appropriate international instrument. In the event they opted for a free-standing instrument and at a special conference in 1972 a Convention for the Conservation of Antarctic Seals (CCAS) was concluded which came into force in 1978. This confirmed the special role of SCAR (a rare one for an NGO) by formally inviting it to provide independent scientific advice under an inter-governmental instrument.
- 2.5 However, the very high status accorded to SCAR at this time was not to be sustained, as several subsequent developments demonstrated. First, although the question of mineral resources is not referred to in the Antarctic Treaty, in 1975 Recommendation VIII-18 invited SCAR to "make an assessment on the basis of the available information of the possible impact on the environment of the Treaty Area and other ecosystems dependent on the Antarctic environment if mineral exploration and/or exploitation were to occur there." (The main reason why the minerals question came to the fore at this time was the quadrupling of the price of crude oil in 1973-74 by OPEC). SCAR set up a Group of Specialists (on the Environmental Impact Assessment of Mineral Resource Exploration and Exploitation in Antarctica (EAMREA)) which submitted a report to the IX

ATCM in 1977 (published by SCAR in 1979). For political reasons this report was not seriously considered by the ATCPs who set up an intergovernmental Group of Experts, which produced a parallel report. From this time SCAR's pre-eminent role in providing scientific and management advice to the Treaty system began to diminish.

- 2.6 SCAR had been concerned with Antarctic marine living resources and had been urged in ATCM Recommendation VIII-10 (1975) "to continue its scientific work on these matters and to consider convening, as soon as practicable, a meeting to discuss current work and report on programmes for the study and conservation of Antarctic marine living resources." SCAR's response was a comprehensive international research programme on Biological Investigations of Marine Antarctic Systems and Stocks (BIOMASS), formulated in 1976 and planned to span ten years, later extended to fifteen. It ended with a BIOMASS Colloquium in September 1991, to evaluate the achievements of the programme. It aimed to gain a deeper understanding of the structure and dynamic functioning of Antarctic marine ecosystems, essential for the wise management of the living resources of the Southern Ocean. The BIOMASS Programme also organised two international multi-ship experiments. It has led to an impressive number of publications, including many in scientific journals, in addition to the BIOMASS Scientific Series, BIOMASS Reports and BIOMASS Handbooks, as well as the creation and operation of the BIOMASS Data Centre, probably the first international relational database in biological oceanography.
- 2.7 It also led, in 1980, following the model provided by CCAS, to the negotiation of an international Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) which was concluded in 1980 and came into force in 1982. Its objective was the conservation (including rational use) of all Antarctic marine life, and it applies to waters south of the Antarctic Polar Front (Antarctic Convergence). It requires any harvesting to be conducted in accordance with stated conservation principles. A Scientific Committee was set up, (on which SCAR participation is limited merely to an invited Observer) and a Secretariat and Data Centre created, with substantial funding provided by governments.
- 2.8 The BIOMASS Programme has been an important source of advice for CCAMLR, which commissioned it to produce two key reports, on the *Biology and Status of Exploited Antarctic Fish Stocks* and on the *Biology and Ecology of the Antarctic Krill*, for which nominal payment was made. Together with other SCAR

groups advice has been given which helped in the formulation and implementation of the CCAMLR Ecosystem Monitoring Program (CEMP). In 1991 CCAMLR co-sponsored a SCAR workshop on Southern Elephant seals to investigate the causes of the observed decline in the Indian Ocean sector populations of this species. SCAR's role in relation to CCAMLR is a complementary one, unfunded by governments, co-ordinating basic scientific research which is essential for management purposes.

- 2.9 The next instrument to be negotiated within the ATS was the Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), which was adopted on 2 June 1988, but has not been ratified and was rejected by the XIth ATSCM in 1991. SCAR had no part in the formulation of this instrument and was assigned no role in its operation. A prohibition on mining in the Antarctic has now been agreed.
- 2.10 At the XIth ATSCM in 1990 and 1991 intergovernmental discussions on Comprehensive Measures for the Protection of the Antarctic Environment, led to the drafting of a Protocol to the Antarctic Treaty on Environmental Protection. This has not yet been adopted by the ATCPs¹. SCAR was represented at these ATSCMs by Observers.
- 2.11 New interests came into prominence in the 1980s and another group of NGOs, the Antarctic and Southern Ocean Coalition (ASOC) focussed their attention on the Antarctic. This group has been very successful in handling the media and tackling governments on environmental affairs. Its aim is to achieve "World Wilderness Park" status for Antarctica. It is important that this does not conflict with the needs of Antarctic science. Many Antarctic scientists have been disconcerted to find their long sustained efforts in environmental protection, summarised above, belittled or ignored in the media campaign on Antarctic conservation.
- 2.12 Not surprisingly SCAR is concerned at the possibility of a diminution of its role and influence in relation to the ATS and the effect this may have on "freedom of scientific investigation and co-operation toward that end" - a keystone of the Antarctic Treaty. A recent editorial (written by an experienced Antarctic diplomat with a scientific training) put this well: in democratic societies it is an established principle that the law needs to be acceptable to the governed The

1 Note: adopted and signed in Madrid on 4 October 1991

risk in the Antarctic situation is that the ATCPs may find themselves getting legislatively ahead of their real constituents in a land of science - the scientific community in Antarctica. Impossible, impracticable or unnecessary laws are undesirable. Politicians need to take account of the views of the scientific community, expressed through SCAR, before making new laws. (*Antarctic Science*, June 1991).

3. Appreciation of the value of international scientific co-operation

3.0 In the light of the historical summary above and the progressive replacement of SCAR as the primary adviser to the ATS by intergovernmental committees, it is ironic that the fundamental value of scientific research undertaken in the Antarctic is more widely recognised than ever before. A single example suffices, the discovery of the "ozone hole", a discovery "which justified every penny that has been spent on Antarctic research by all countries." Antarctic science has a "vital contribution to understanding global phenomena" and "It is therefore crucial that what scientific capacity is available should be used as productively as possible. This is not something that can be achieved by regulation or direction; but it is something which governments should seek to encourage by creating a climate of opinion which values Antarctic Science." (Handbook of the Antarctic Treaty System, 1990, p. 1501).

3.1 Conversely, however, it could be said that "regulation or direction" *can* lead to the unproductive use of scientific capacity and funds; and it is this which concerns SCAR - notwithstanding ATCM Recommendation XV-14 (1989) which made a declaration on scientific research in Antarctica. This recognised the unique features of the Antarctic that contributed to regulation of the "total Earth system". It also recognised, with appreciation, that the contribution that Antarctic science can make to these scientific questions is the subject of intensive work within SCAR and renewed the commitment to the pursuit of scientific research in the Antarctic. Recommendation XV-15 addressed the promotion of international scientific co-operation and the efficient use of scarce resources. There was agreement at the XVth ATCM on the importance of taking account of the work of SCAR in planning Antarctic activities.

4. SCAR Objectives

- 4.0 The SCAR strategy document agreed at XXI SCAR, Sao Paulo, 1990, draws attention to a clear-cut dichotomy of function. The SCAR function is "*to take primary responsibility, within the context of international science, for the co-ordination of national science programmes in Antarctica, for the promotion of co-operation among scientists on the international level, and for the initiation of new research projects;*" It is also "*to provide expert advice on a range of scientific, environmental and conservation matters within the Antarctic Treaty system;*" and "*to liaise and co-operate with other organisations on relevant Antarctic matters.*"
- 4.1 *The first function* is much more complex than it used to be, because there are many more SCAR members, but also because science is now more complex and sophisticated and is integrally linked with global change problems. ICSU has tasked SCAR with the role of co-ordinating global programmes in this part of the world. One might indeed question whether SCAR is performing this first function as well as it should (or would like to). It seems that on land or where fixed bases are necessary to research programmes, this is still true and SCAR is the predominant influence, but in the marine field SCAR needs to be working more closely with other international, multi-disciplinary programmes, such as JGOFS and WCRP. The SCAR Group of Specialists on Southern Ocean Ecology has devised an excellent programme proposal, but has limited implementation funds.
- 4.2 *The second function* is also more complex than it used to be, because of the growth and questioning role of the environmental pressure groups, the media interest stimulated by them, the development of tourism and the interest of the United Nations in Antarctica. Without supplementation of funds to convene meetings and workshops SCAR may have increasing difficulty in offering well founded advice on environmental and conservation matters.

5. Current concerns of SCAR

- 5.0 Specific concerns are essentially fivefold: first, the inadequate funding available to SCAR to cope with the increase in work related to its advisory role in relation to the ATS, which could lead to a diminution of the independent influence of SCAR; secondly the disturbing likelihood of duplication of scientific effort in relation to the management of Antarctica, which compounds the first problem;

thirdly undue diversion of funds from science to monitoring; fourthly, the disproportionate influence of environmental pressure groups; fifthly, misconceptions about the nature of Earth sciences research in the Antarctic.

5.1 *Concerning the first*, many of the problems facing SCAR stem from its totally inadequate funding (c. \$ 250,000 a year) which is all that is available to co-ordinate scientific research, to maintain a Secretariat, to publish reports, to provide advice on applied problems of the ATS. This is compounded by the second concern (see below). (This is a long-standing concern which SCAR has raised with the ATCPs before - and it received a response in 1983 when ATCM Recommendation XII-8 "Noted with appreciation the advice provided to the Antarctic Treaty Consultative Parties by SCAR in response to various requests" and recommended to governments "That they consider in the light of its expertise and past assistance any requests that might be made by their national committees for additional funding to meet the costs to SCAR of responding to requests for advice by the Antarctic Treaty Consultative Parties." This did not lead to increased funding for SCAR activities; what is needed is direct financial support to SCAR, such as is provided for example to CCAMLR and will be provided for CEP. More recently, the ATCPs have not as yet responded to SCAR's request, at the XIth ATSCM in 1990, that consideration should be given to providing a financial contribution to SCAR - to be used for meetings and workshops).

5.2 This is compounded by *the second concern*. Regarding SCAR's advisory role to the Treaty, the creation of the Environmental Protocol is likely to lay the greatest burden on SCAR manpower and finances. However, SCAR welcomes the provision that it will now have a right to be heard (Article 2 (40)) and that the Antarctic Treaty Consultative Meetings are obliged to "draw fully ... upon the advice of SCAR" (Article 10 (2)). This compares favourably with the situation existing until now, where SCAR has had no right to be heard and there was no obligation on ATCMs to take account of advice - even advice they had asked for - from SCAR. The danger for SCAR in these Protocol provisions is that SCAR may be politicised, for not all SCAR members are independent of political pressures from governments.

5.2.1 There are three guide-lines which SCAR can adopt. They are that:

- a SCAR observer is not a delegate but a representative and who, while generally aware of SCAR policy, can make up his or her own mind about

an issue and does not act under instructions and delegated authority from SCAR;

- one of SCAR's roles is reactive as the custodian of "freedom of scientific investigation" for which the Treaty provides; and
- SCAR, as an organisation, should in general provide advice only when asked specifically to do so and only when it can afford to do so.

5.2.2 SCAR intends to investigate additional sources of funding, but the outcome is difficult to predict. If and when the ATCMs have a Secretariat and, therefore, a budget (it will be possible under the third sub-paragraph above) for the SCAR observer to ask the ATCMs to pay for that advice, for there is an additional consideration - that free advice is often less valued by the recipient than that which has been paid for!

5.2.3 Regarding specific advice to the ATCMs, there is a further need to clarify the role and functions of the two groups of scientists involved - SCAR as an NGO and "meetings of experts". Recommendation XV-5 can be taken as a specific example. SCAR understands that the purpose of meetings of experts under the Treaty is to provide adequate time and to get the right mix of scientists, politicians and legal people together to thrash out "proposals" for action by an ATCM to which it reports. Recommendation XV-5 was not drafted clearly and posed problems for SCAR. It should have sought advice from SCAR as to the environmental parameters that should be measured on a routine basis in order to be able to establish the environmental impact of, for example, a scientific station in Antarctica. SCAR would have advised accordingly. It would probably have discussed and defined an objective for such monitoring studies - possibly to establish a reasonable measure of the "footprint" of stations (which might vary with the station's size) which could be used for predictive purposes. That advice could then have been passed to a governmental "meeting of experts" who could have considered, in the light of SCAR's advice, what legal obligations should be placed on Consultative Parties and would have made proposals about legislative action for consideration at an ATCM. The roles of SCAR experts and ATCM experts would be different. Because Recommendation XV-5 was not clearly framed, SCAR's advice will probably be less helpful to the XVIth ATCM than it might have been.

- 5.2.4 The monitoring issues is just one of many Recommendations from the XVth ATCM asking for action from SCAR. It seems clear that SCAR has to clarify the policy issues, bearing in mind its limited resources (human and financial), possibly in the direction of more selectivity in deciding whether it should respond to requests from the ATS.
- 5.3 *Thirdly*, presumably the CEP will assume responsibility for initiating monitoring programmes, and there is a danger that implementation of these will divert resources from basic science. Some initial research will be needed to establish the parameters to be tracked in monitoring programmes. If Antarctic scientists are not fully involved in the design of monitoring programmes, such programmes could set unrealistic and all embracing objectives; they could easily become internally self-sustaining rather than a means to an end - environmental protection.
- 5.4 *The fourth category* problems are self-evident. Although SCAR has demonstrated its commitment to environmental conservation over the years, Antarctic scientists are very concerned that steps may be taken, ostensibly to protect that environment, which seriously limit their ability to conduct basic research, actions which could have serious consequences, not just for Antarctica but for the world. Unnecessarily alarmist views promoted by environmentalist pressure groups, about the impact of scientific activities on the Antarctic environment, could lead to unnecessarily severe constraints on the planning and implementation of scientific research.
- 5.5 *Fifthly*, despite the prohibition of mining activities, Earth scientists are particularly concerned about constraints upon their work. It is inevitable that the activities of the Antarctic geological and geophysical community have been linked to mineral prospecting, for some of the techniques of Earth sciences are used by industry to prospect for hydrocarbons and metallic minerals; some people are claiming that all such research is a preparation for minerals exploration and should therefore be banned. Yet nothing could be further from the truth. In fact the Earth science research carried out in the Antarctic is addressed to basic science which is important to understand geological processes world-wide. Data are freely exchanged and published, the only concern being to safeguard intellectual priority.

5.5.1 Indeed it is likely that a single commercial appraisal of a particular area would almost certainly exceed the total cost of all the scientific geological and geophysical programmes currently being undertaken in Antarctica. Furthermore, the practical and economic problems of extraction of minerals in this remote and hostile environment are daunting. Even without the 50 year prohibition on mineral resource activities in Antarctica, established by the 1991 Antarctic Treaty Special Consultative Meeting in Madrid, mining in Antarctica would be many decades away. The thrust of current Earth Science programmes in Antarctica is unlikely to change that situation.

6. The way forward

6.0 Antarctic affairs are now entering a new phase, the full implications and characteristics of which are as yet unclear. This poses fundamental policy problems for SCAR, and the next few years will be critical to the survival of the relationship between SCAR and the ATCPs, which has up to now produced mutual benefits.

6.1 However, the income of SCAR in real terms is little different from what it was 20 years ago and a large part of the problem for the future is the totally inadequate funding available to SCAR (c. \$ 250,000 a year, contributed by National Committees and ICSU). At XXI SCAR in 1990 rigorously framed bids for funds to plan and co-ordinate scientific research totalled more than double the available funds. With such inadequate funding to exploit scientific opportunities, should SCAR be trying to do both primary research and advise on management at the risk of doing both inadequately?

6.2 Although successful environmental protection measures within Antarctica depend on a good appreciation of the underlying science, and Antarctic scientists are needed to evaluate proposals for protected areas, waste disposal and environmental impact assessment, Antarctic scientists are currently debating whether SCAR should in the future offer specialised "managerial" as well as "scientific" advice to the ATCPs. Few Antarctic scientists have become involved in the relatively specialised environmental management problems because national programmes have done little to support scientific studies which relate to the Antarctic environment and its ecosystems, except insofar as these contribute

to pure science. At the moment there are very few programmes which are directed to studying or monitoring changes in the environment.

- 6.3 In principle the role of scientists is to provide data and advice on the consequences of various actions; it is for administrators, or politicians to consider this advice and to act through the legal processes. The new factor is the role of environmentalist pressure groups, which have strong views about the environment and which attempt to persuade governments to support their objectives. It may sound arrogant, but is nevertheless the case, that scientific philosophy and method is to seek the truth and scientists do not have political skills. Also, most Antarctic scientists do not accept that there is a significant widespread environmental impact problem; they would claim that a minute fraction of the Antarctic environment is impacted by human activities originating in the region; the more serious problems are now recognised to be due to impacts on the Antarctic originating in the wider world.
- 6.4 Part of SCAR's former role, the more practical aspects, such as waste disposal and environmental impact assessment, has already been taken over by COMNAP. The new CEP will formally assume responsibility for environmental and conservation matters addressed by the Protocol.
- 6.5 Thus, the future involvement envisaged for SCAR falls very far short of the high profile involvement in an advisory capacity sought by SCAR on Antarctic scientific and management issues within its competence (SCAR Report No. 6, 1991, pp. 10/2). In the light of all this perhaps it would be sensible for SCAR to confine itself to offering expert advice on purely scientific matters - as it does in the parallel relationship to CCAMLR. Its input to environmental and conservation matters would then be confined to answering strictly scientific questions put by the CEP - a reactive rather than pro-active role, while acting upon the right (if it has in fact been conferred in Article 10.5 of the Protocol) to comment on decisions or recommendations by the Committee. However, it is undeniable that a likely consequence might be reduced influence on decisions that could adversely affect the prosecution of scientific research (e.g. unduly rigorous controls on research activities). The ATCPs themselves in their recommendations referred to above, most recently at the XVth ATCM, seem to acknowledge the undesirability of this.

7. The respective functions of SCAR, COMNAP and the AT'S

7.0 We have three international fora in which decisions can be made which, in one way or another, affect what is, or is not, done in Antarctica - SCAR, COMNAP and the ATCMs. The urgent need is to develop in these three fora clear ideas as to what their functions are and a clear idea as to how they can work together effectively in a complementary way.

7.1.1 ATCMs

Turning first to ATCMs, in SCAR's view, they should not need to take up Antarctic topics unless:

- there is an urgent need to come to an internationally binding agreement;
- the matter under consideration is of circum-Antarctic relevance;
- the matter under consideration does not fall into the proper remit of SCAR or COMNAP;
- there is a need to give political direction; or
- the matter arises out of implementation of legally binding obligations previously adopted.

7.1.2 This list can be distilled, for the sake of present argument, to the idea that ATCMs are about the governance of Antarctica by international agreement involving inter-governmental obligations - in one word, the law. This provides an umbrella for the prosecution of international Antarctic science.

7.3 SCAR

Next, as to SCAR. The question posed in this paper is whether SCAR should continue, as an act of positive policy, to seek an advisory role to the Treaty or whether it should concentrate its energies on its "primary responsibility ... for the co-ordination of national science programmes ... for the promotion of co-operation ... and for the initiation of research projects"? SCAR wants to continue to do both, while recognizing that the need for fulfilment of our "primary responsibility" has considerably increased and, that the arrangements for the provision of advice have changed. The snag is that these changes require a substantial increase of funding for SCAR, if it is to respond adequately to the needs of science in the Antarctic, to global change programmes extending beyond Antarctica and, to requests for advice from the ATCMs.

7.4 COMNAP

Turning to COMNAP, that organisation (which is federated to SCAR and incorporates the function of the former SCAR Working Group on Logistics) is about resource allocation and sharing costs and practical "know-how" between countries. Its principal task is the support of science which it achieves through the regular exchange of information on operational matters, seeking solutions to common operational problems, reviewing the major logistic requirements for international scientific programmes, and by providing co-ordinated responses to questions and requests for advice from various sources by the creation of sub-groups as necessary.

8. Conclusions

8.0 Finally, scientific research and its support, is almost the only activity in the Antarctic that is to be regulated and, however, the system is set up in the future, in the political and legal arrangements for Antarctica there must surely be some provision for scientific advice relatively independent of governments - particularly in view of the new perception of the importance of Antarctic science to understanding global problems. It would be wholly wrong for *the* international, interdisciplinary, scientific organisation to be given a secondary role in whatever new arrangements are implemented for the comprehensive protection of the Antarctic environment, since they will impact on scientific activities in the region and on little if anything else. There has been much talk about Antarctica as a "Land of Science" and scientists now look for appropriate action and support from governments to give the concept substance. SCAR therefore requests a considered response from the ATCPs on these matters.

(iv)

**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)	15 Recommendations adopted at Sixth Meeting (Tokyo 1970)
Approved	Approved	Approved	Approved	Approved	Approved
Argentina All	All	All	All	All	All
Australia All	All	All	All	All	All
Belgium All	All	All	All	All	All
Brazil(1983)+ All	All	All	All	All	All except 10
Chile All	All	All	All	All	All
China(1985)+ All	All	All	All	All	All except 10
Ecuador(1990)+					
Finland (1989)+					
France All	All	All	All	All	All
Germany (1981)+ All	All except 8	All except 1-11 and 13-19*	All except 1-11 and 13-19*	All except 5* 6 6	All except 9, 6, 10
India(1983)+ All	All	All except 8***	All except 18	All	All except 9 and 19
Italy(1987)+ All	All	All	All	All	All
Japan All	All	All	All	All	All
Korea, Rep. of (1989)+					
Netherlands (1990)+					
New Zealand All	All	All	All	All	All
Norway All	All	All	All	All	All
Peru (1989)+					
Poland(1977)+ All	All	All	All	All	All
South Africa All	All	All	All	All	All
Spain (1988)+ All	All	All	All	All	All
Sweden (1988)+					
U.S.S.R. All	All	All	All	All	All
U.K. All	All	All	All	All	All
Uruguay(1985)+ All	All	All	All	All	All
U.S.A. All	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

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

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)	3 Recommendations Adopted at Eleventh Meeting (Buenos Aires 1981)	8 Recommendations Adopted at Twelfth Meeting (Canberra 1983)
Approved	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 5	All	All	All	All
Chile	All	All	All	All	All
China(1985)+	All except 5	All	All	All	All
Ecuador(1990)+					
Finland (1989)+					
France	All	All	All	All	All
Germany (1981)+	All except 1, 2 & 5	All	All	All	All
India(1983)+	All	All	All except 1 & 9		
Italy(1987)+	All except 5	All	All except 1 & 9		
Japan	All	All	All	All	All
Korea, Rep. of (1989)+					
Netherlands (1990)+					
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 except 1 & 9	All except 1	
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

	16 Recommendations adopted at Thirteenth Meeting (Brussels 1985)	10 Recommendations adopted at Fourteenth Meeting (Rio de Janeiro 1987)	22 Recommendations adopted at Fifteenth Meeting (Paris 1989)	Approved
	Approved	Approved	Approved	Approved
Argentina	All	All	All	
Australia	All	All	All	
Belgium	All			
Brazil (1983)+	All	All		
Chile	All except 8 - 14			
China (1985)+	All	All		
Ecuador (1990)+				
Finland (1989)+				
France	All	All		
Germany (1981)+	All except 10 to 13	All	All except 3,4,8,10,11,22	
India (1983)+				
Italy (1987)+				
Japan	All	All		
Korea, Rep. (1989)+				
Netherlands (1990)+				
New Zealand	All	All	All	
Norway	All	All		
Peru (1989)+				
Poland (1977)+	All	All	All	
South Africa	All	All		
Spain (1988)+				
Sweden (1988)+				
U.S.S.R.	All	All		
U.K.	All			
Uruguay (1985)+	All	All		
U.S.A.	All	All		

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations of meetings from that year forward.

Recommendations of Antarctic Treaty Consultative Meetings
not yet in force

CONSULTATIVE MEETING	RECOMMENDATION NUMBER	COUNTRIES WHICH HAVE YET TO APPROVE TO BRING RECOMMENDATIONS INTO FORCE
XII (1983)	XII-1 - 15	India.
XIII (1985)	XIII-10,11,12 & 13	Germany
	XIII-1 - 16	India
XIV (1987)	XIV-1 - 10	Belgium, Chile, India, Italy United Kingdom
XV (1989)	XV-1 - 22	Belgium, Brazil, Chile, China, Finland, France, Germany,
	XV-3,4,8,10,11,22 (Germany)	India, Italy, Rep.of Korea, Japan, Norway, Peru, South Africa, Spain, Sweden, USSR, UK, USA, Uruguay.

(v)

**REPORT SUBMITTED BY THE CHAIRMAN OF THE
Xth ANTARCTIC TREATY SPECIAL CONSULTATIVE MEETING
IN ACCORDANCE WITH RECOMMENDATION XIII-2, PARAGRAPH 2 (a)**

The Xth Antarctic Treaty Special Consultative Meeting was held on November 19, 1990, in Viña del Mar, Chile. It was attended by representatives of all the Parties being Consultative Parties at that time namely Argentina, Australia, Belgium, Brazil, Chile, the People's Republic of China, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, New Zealand, Norway, Peru, Poland, 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.

The meeting considered in plenary session the notifications and informations received from the Governments of the Republic of Ecuador and the Kingdom of the Netherlands, concerning their activities in the Antarctic.

The Representatives of the Consultative Parties recognised that on the basis of scientific programmes being carried out, facilities that have been established, the commitments to independent scientific activities that have been made and their further intentions, Ecuador and the Netherlands have demonstrated the substantial nature of their interest in Antarctica, in accordance with Article IX, paragraph 2 of the Antarctic Treaty;

The Representatives of the Consultative Parties ascertained in accordance with Article IX of the Antarctic Treaty, on the basis of the information provided about scientific expeditions and the research carried out, that the activities of Ecuador and the Netherlands are in accordance with the principles and purposes of the Treaty;

The Representatives of the Consultative Parties recorded their acknowledgment that Ecuador and the Netherlands have fulfilled the requirements established in Article IX, paragraph 2 of the Antarctic Treaty and that in consequence, during such times as they continue, in accordance with Article IX, paragraph 2 of the Treaty, to demonstrate their interest in Antarctica, they are entitled to appoint Representatives to participate in the Consultative Meetings provided for in Article IX paragraph 1 of the Treaty.

They warmly welcomed Ecuador and the Netherlands as participants in such meetings.

(vi)

**REPORT SUBMITTED BY THE CHAIRMAN OF THE XIth ANTARCTIC TREATY
SPECIAL CONSULTATIVE MEETING**

(Viña del Mar)

Distinguished Representatives,

In my capacity as Chairman of the XIth Antarctic Treaty Special Consultative Meeting, I am called upon to submit to you the Provisional Report placing on record the proceedings of the meeting held in the Chilean city of Viña del Mar from 19 November to 6 December 1990.

I have little to add to the document itself, which was published and circulated in Spanish and English in early 1991, but that little is important.

We came to Viña del Mar deeply divided, but we left with hopes of coming to an arrangement that could be adopted by consensus.

Commentators claimed that those hopes were very faint and yet it subsequently proved possible to reach unanimous agreement.

As Chairman of that meeting, I should like to thank all those who showed proof of goodwill in their bid to ensure that the Antarctic spirit would triumph - those who thought that between a short-term moratorium on mining and an unconditional ban, it was possible to set up a review mechanism drawing its inspiration from Article XII of the Antarctic Treaty.

If I had to single out the names of two representatives personifying the goodwill displayed by one or other of the tendencies, I would cite those of Curtiss Bohlen, of the United States, and Jean-Pierre Puissochet, of France.

I have kept the hand-written drafts of the two of them. When we come to read between the lines of those drafts, with their connecting passages, crossings-out and amendments, we can see that the Protocol now pointing new ways to protect the continent of Antarctica had already taken shape in Viña del Mar in November and December 1990.

Thank you.

(vii)

**REPORT SUBMITTED BY THE CHAIRMAN OF THE XIth ANTARCTIC TREATY
SPECIAL CONSULTATIVE MEETING**

(Madrid)

Distinguished Representatives,

In my capacity as Chairman of the second session of the XIth Antarctic Treaty Special Consultative Meeting held in Madrid from 22 to 30 April, 17 to 22 June and 3 and 4 October 1990, it is a source of great satisfaction to me to report to this XVIth Consultative Meeting on the successful outcome of the work on the drafting of a legal instrument for the comprehensive protection of the Antarctic environment entrusted to us by the XVth Consultative Meeting. That session ended with the approval of a Final Act including the Protocol on Environmental Protection to the Antarctic Treaty. It also approved a Final Report, which I can refrain from reading out, since all the Representatives are familiar with it.

Thanks to the personal endeavours of Ambassador R. T. Andersen, Head of the Delegation of Norway, who was able to bring together and give shape to the ideas expressed by the different delegations, the work done at Viña del Mar gave rise to what was considered to be a valuable document, which was subsequently adopted as a working paper for the Madrid meeting in April. With appropriate amendments, this became a draft Protocol which the representatives regarded as providing a sufficient basis for submission to their Governments for approval. The consensus needed for what had started to go by the name of the Madrid Protocol was on the point of being reached in June, thereby coinciding with the 30th anniversary of the entry into force of the Antarctic Treaty itself. However, one delegation could not make its position known on the whole draft and it proved necessary to wait until 3 October before the document could be accepted by all.

The Protocol approved by all the Antarctic Treaty Parties present at the meetings was reproduced in the Final Act which those Parties signed on 4 October. The Protocol was opened for signature on the same day and was thereupon signed by 23 out of the 26 current Consultative Parties and 7 out of the 14 Non-Consultative Parties. It remains open for signature in Washington until 3 October 1992 and it would be desirable if those

Parties which were unable to sign on 4 October, presumably because they still had outstanding domestic procedures to complete, could do so at the earliest opportunity.

I also wish to underscore the agreement adopted by the XIth Meeting to the effect that, as long as the Madrid Protocol has not come into force, the current restrictions on activities connected with Antarctic mineral resources should continue, while the Antarctic Treaty Contracting Parties should implement Annexes I to IV in accordance with their own legal systems.

In conclusion, I should like to thank all the delegations for the efforts they made to achieve this splendid result, and especially those having started out from positions widely differing in one direction or the other. The Madrid Protocol will undoubtedly represent a historical landmark in environmental protection, since comprehensive protection for an entire continent and its associated and dependent ecosystems has been provided for the first time, giving proof of the efficient working of the Antarctic system and of people's sound common sense.

Thank you.

(viii)

**REPORT TO THE XVIth ANTARCTIC TREATY CONSULTATIVE MEETING ON
THE MEETING HELD PURSUANT TO RECOMMENDATION XV-2**

Recommendation XV-2 on "Comprehensive measures for the protection of the Antarctic environment and dependent and associated ecosystems" envisaged 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".

Pursuant to this mandate the meeting was held on Thursday 29 November 1990 in Viña del Mar, Chile, and was attended by representatives of the 26 Antarctic Treaty Consultative Parties and 10 other Contracting Parties to the Antarctic Treaty. Professor Francisco Orrego Vicuña, Representative of Chile, was elected Chairman.

In accordance with the terms of Recommendation XV-2 the meeting heard all the proposals and views on the issue of liability that were expressed in the course of these deliberations. The following delegations made statements on this occasion: Argentina, Australia, Austria, Belgium, Chile, the People's Republic of China, Denmark, France, Germany, Greece, India, Italy, The Netherlands, Norway, Sweden, South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland and the United States of America.

The Meeting agreed that on the basis of all proposals and views expressed on the subject, the Antarctic Treaty Consultative Parties may consider further the issue of liability at the appropriate time.

(ix)

**REPORT OF THE COUNCIL OF MANAGERS OF NATIONAL ANTARCTIC
PROGRAMS
TO THE XVIth ANTARCTIC TREATY CONSULTATIVE MEETING**

1. Introduction

- 1.1 For more than 30 years the Antarctic Treaty has served as a salient example of international co-operation in keeping the seventh continent free of strife and in dedication to scientific research for the benefit of all mankind.

- 1.2 Continuation of this exemplary record and the vitality of the current Treaty agenda depend on the faithful implementation of the many thoughtful Recommendations that have been adopted and have evolved over the 30 years. In addition to scientific issues, which have been ably handled by SCAR, the Treaty is faced with a growing number of operational issues, e.g. environmental protection under vastly changed perceptions, commercial uses of the Antarctic (i.e. tourism), and an expanding number of national programmes that are required to put the Treaty agreements into practice. There is an increasing need to co-ordinate and make effective the logistic support for the expanding scientific programmes being planned for the next decade. Furthermore, there is a certain level of urgency that bears on the national programme operators to implement the Treaty Recommendations. It stems from the political pressures on the Treaty, the heightened levels of public attention, and from the expanded scope and complexity of the topics and measures adopted. The operators must not only act, but must do so in a manner consistent with uniform interpretation and prompt co-operation in the sharing of expertise and technology. Lastly, the Treaty needs timely information on the progress in implementation by the national Antarctic programmes in order to evaluate and to maintain a dynamic agenda.

- 1.3. In recognition of these developments, the Managers of National Antarctic Programs have formed a Council (COMNAP) affiliated with SCAR, and also a COMNAP subgroup, the Standing Committee on Antarctic Logistics and Operations (SCALOP), to expedite the sharing of information and to deal collectively and directly with all technical implementation and research support issues that arise.

1.4 The COMNAP has met annually since 1988 and has addressed a number of topics that, in particular, lend themselves to the expeditious and harmonious implementation of recent ATCM Recommendations.

2. **The COMNAP/SCALOP Process**

2.1 COMNAP (including its subgroup SCALOP) was established in Hobart in 1988 after a series of informal meetings held in 1987. COMNAP meets once per year. In each alternate year it meets at the same time and in the same location as the Delegates' meeting of SCAR.

2.2 The objectives of the Council are:

- To review, on a regular basis, operational matters and exchange information.
- To examine, discuss and seek possible solutions to common operational problems.
- To provide a forum for discussion in order to frame better, and in a timely, efficient and harmonious manner:
 - (i) national responses to common issues directed to National Antarctic Operators, in particular requests from and Recommendations of the ATCM.
 - (ii) appropriate input to SCAR responses to questions involving science and operations/logistics.
- To review, with appropriate SCAR Working Groups and Groups of Specialists, projected programmes requiring major international collaboration on operations/logistics and to provide appropriate advice to the SCAR Executive.
- To respond to requests by the ATCM and SCAR for information, advice and comment.
- To create subgroups as necessary, of which one will be a Standing Committee on Antarctic Logistics and Operations (SCALOP) and which will replace the SCAR Working Group on Logistics upon its termination.

2.3 The work of COMNAP is undertaken through:

- i) its formal plenary meetings;
- ii) specifically organised symposia on timely and relevant topics (e.g. Antarctic Logistics Symposia held at Sao Paulo, Brazil in 1990, and to be held at Bariloche, Argentina in 1992). These have included such items as waste disposal techniques, alternative energy sources, shipping, telecommunications, air operations, etc;
- iii) workshops (e.g. Antarctic Environmental Impact Assessment Workshop, Bologna 1991); and
- iv) a number of subgroups assigned to important agenda items (e.g. waste management, air safety, marine pollution, alternative energy, environmental assessments, siting of stations, and reporting procedures). There have also been a number of regional meetings of Managers of National Antarctic Programs. For example, the members and participants from seven Latin-American countries met in Buenos Aires in 1990 and in Montevideo in 1991. Reports and recommendations are received by COMNAP for discussion, acceptance and subsequent implementation by the national Antarctic operators.

3. **Support of Scientific Activity**

National operations have as their primary role in the Antarctic the logistic support of scientific activities. The nature and tempo of science support has changed fundamentally in recent years, as science itself has developed. This change is characterised by the application of increasingly sophisticated technology, by the emergence of co-ordinated programmes of research across a range of scientific disciplines and by a rising concern for and integration with studies of global phenomena. The next few years will be important in testing the ability of COMNAP to co-ordinate and implement successfully the logistic support (in a safe, efficient and cost-effective way) for major international scientific initiatives. Through ICSU, plans are now well advanced for large scale international programmes, several of which contain significant Antarctic components which are being developed further by SCAR. There are the World Climate Research Program (WCRP), Joint Global Ocean Flux Study (JGOFS), and the International Geosphere-Biosphere Program (IGBP). Others, entirely Antarctic-oriented, and initiatives by SCAR are Antarctic Lithosphere Studies (ANTALITH), Ecology of the Antarctic Sea Ice Zone (EASIZ), Biology of Terrestrial Antarctic Systems (BIOTAS), etc.

If this considerable range of international programmes is to be supported, in addition to a host of national research projects, it will be essential to co-ordinate limited logistic resources, in order to avoid overcommitment, by prioritisation and phasing of activities. COMNAP and SCALOP have established a regular dialogue in which the logistic needs of the Antarctic science community are shared and reviewed.

4. Antarctic Environmental Assessment

In September 1989, at its first annual meeting in Cambridge, UK, the COMNAP discussed the role and the responsibilities of national programme managers for the implementation of the various Antarctic Treaty Recommendations related to the protection of the Antarctic environment in respect of scientific and logistic activities. A subgroup was tasked to prepare a Workshop with the aim of establishing practical guidelines for the environmental assessment process in Antarctica.

- 4.1 The subgroup was to study all the different aspects which had to be reflected in the guidelines. The guidelines should be compatible with different national regulations and with the Treaty Recommendations, and could be adopted by the managers of national Antarctic programmes in their implementation of respective national activities in Antarctica.
- 4.2 The Workshop was held in Bologna, Italy from 17th to 19th June 1991 and was attended by national managers of 21 countries together with more than 50 environmental, legal, scientific, and logistics experts. The workshop produced the final text of the guidelines and two recommendations to COMNAP. The first recommended the "Practical Guidelines" be used in the initiation and subsequent preparation of Antarctic environmental assessments (EA) by national Antarctic programmes and the second recommended that a regular forum for the discussion and development of Antarctic environmental matters be established within COMNAP.
- 4.3 At the meeting on June 20, 1991 in Bologna, COMNAP formally adopted the "Practical Guidelines for Antarctic Environmental Assessment" and established an Antarctic Environmental Assessment subgroup. The organisation and contents of the Practical Guidelines document include:

- General considerations
- Description of the proposed activity
- Analysis of expected impacts
- Mitigation measures
- Alternatives
- Monitoring of impacts
- Evaluation
- Timetable for the Environment Assessment Process
- Audit arrangements

The full document is appended to this report. (Appendix 1.)

- 4.4 The goal of the Practical Guidelines is to provide the Managers of National Antarctic Programmes with an explicit and concise mechanism for the implementation of environmental assessment procedures; provision has been made for its continual review. ATCM recommendations XIV-2 and XV-1 have called for such procedures. The Guidelines were also made consistent with the measures given in the Madrid XIth ATSCM April 30th Draft "Protocol on Environmental Protection to the Antarctic Treaty". The guidelines are needed to disclose and to evaluate potential environmental impacts that may be associated with Antarctic scientific activities and the logistic operations that support them. An additional purpose is to assure that the development of such mechanisms is co-ordinated fully among the national Antarctic programmes so as to be comparable, effective and justifiable. It is hoped that these Guidelines could also serve as an aid to non-governmental organisations proposing activities in Antarctica.

The preparation of the Practical Guidelines has been long and complex, and has involved practically all national programmes. The COMNAP offers these Guidelines to the ATCM for possible adoption as expressed in its recommendation XV-1 at the Paris ATCM. Adoption will strengthen their political and practical value within the group of countries party to the Antarctic Treaty.

5. Air Safety in Antarctica

- 5.1 In response to the terms of ATCM Recommendations XIV-9 and XV-20, The COMNAP has given priority attention to safety of aviation operations in

Antarctica. Fortunately, members of the Council, and its Standing Committee on Antarctic Logistics and Operations, had participated in the ATCM Meeting of Experts in 1989. The ten proposals subsequently adopted in ATCM Recommendation XV-20 became the basis for the assignment by COMNAP to SCALOP for implementation through collective action.

- 5.2 Significant progress during the period July 1990 to August 1991 is summarised as follows:
- 5.2.1 SCALOP acquired a library of ICAO Annexes and related publications and subscribed to the ICAO Journal to assure that measures for air safety in Antarctica are implemented on the basis of ICAO criteria.
- 5.2.2 The direct collection and distribution of advance notices of planned air operations for the 1990/1991 operating season (using the Annex to XV-20) has been implemented. The same procedure is being used for the 1991/92 season.
- 5.2.3 National programme managers have, where applicable, identified their primary and secondary air information stations together with their INMARSAT telephone numbers. They have designated points of contact to be used as addressees for emergency location messages relating to air operations in Antarctica generated by the COSPAS/SARSAT system. These data have been distributed and will be updated annually as necessary.
- 5.2.4 The use of the TIBA (Traffic Information Broadcasts by Aircraft) procedure has been implemented in Antarctica using the common frequency of 129.7 Mhz, which was confirmed as acceptable to all national programmes concerned. The implementing procedures are in accordance with ICAO Annex 11, taking into account the conditions in Antarctica. (See Appendix 2). In this regard the Visitors Guide to the Antarctic, produced by COMNAP, includes the notification: "If you are operating an aircraft, a Traffic Information Broadcast by Aircraft (TIBA) frequency of 129.7 Mhz has been established for use in the Antarctic Treaty area. (TIBA is described in ICAO Annex 11.)"
- 5.2.5 The format for an aeronautical information handbook for Antarctica has been developed and adopted using the guidance contained in Recommendation XV-20 and in ICAO Annex 15, taking into account the conditions in Antarctica. The handbook title is The Antarctic Flight Information Manual (AFIM). The first

edition of the AFIM has been assembled in a uniform style of word processing and column format. As of the end of August 1991, eleven of the fourteen AFIM segments from national programmes with significant air operations are included. The first edition of the AFIM is being distributed for use in the 1991/92 season.

- 5.3 The continuing work by SCALOP in this area concentrates on further expansion of the AFIM and the development of a single annual notification of planned operations and corrections to AFIM data. The adoption of a basic flight plan format for transmission in the case of aircraft flights within the Antarctic that involve the facilities of more than one national programme is being studied. The first draft of the Antarctic Flight Notification has been prepared and distributed. Consideration is also being given to other areas involving greater co-ordination, such as search and rescue and the use of Notices to Airmen.

6. Waste Management

- 6.1 One of the most important and obvious forms of environmental impact due to the human presence in Antarctica is the generation of different kinds of waste.

The issue of waste disposal has been addressed directly by the Consultative Parties since 1975 when the first Code of Conduct was annexed to ATCM Recommendation VIII-11. By 1984 it was recognised that a critical review of the Code of Conduct was needed, and in 1989, in response to ATCM Recommendation XIII-4, a SCAR panel of experts, with the substantial involvement of national operating agencies, produced a definitive report on waste disposal including a new proposed comprehensive code of conduct. Subsequently, ATCM Recommendation XV-3 "Human impact on the Antarctic environment: Waste Disposal" was adopted. The final content of the new code as presented by XV-3 was strengthened through the use of mandatory rather than suggestive language. It also benefited from the careful review of the SCAR proposal from an operational point of view by the newly formed Standing Committee on Antarctic Logistics and Operations of COMNAP during their meeting in October 1989. At that meeting a subgroup of SCALOP was formed with the task of developing standardised formats for annual waste management plans and reports.

- 6.2 ATCM Recommendation XV-3 advises, among others, that in Antarctica: wastes produced or disposed of be kept to a minimum, waste produced be

classified in a standard way, plans for waste management and an inventory of location of past activities be prepared, annually updated and included in the Annual Exchange of Information under Article III and VII of the Antarctic Treaty, a waste management official be designated, members of the expeditions be trained, and that some harmful substances be banned and many others be removed from the Treaty area or carefully handled.

- 6.3 Following the conclusions reached at the 1989 meeting, and in conformity with the terms of ATCM Recommendation XV-3, the SCALOP subgroup prepared a draft for the annual "Waste Management Report." This was discussed at the 1990 COMNAP/SCALOP meeting in Sao Paulo and circulated among the Antarctic operators in September 1990 for their use to cover the period 1 October 1989 through 30 September 1990.
- 6.4 Seventeen national programmes have completed The Waste Management Report format, and this collection has been distributed to each COMNAP and SCALOP member, and thence to national programme waste management officials. As a result, these officials are gaining new and useful insights into the scope of the overall issue of waste management and the different practices at various Antarctic stations and by vessels. The collection of data in types and quantities of waste produced will be of particular value to the operators as they continue to examine the most cost-effective disposal methods and technologies.
- 6.5 The format and procedure for The Waste Management Report were further discussed and adjusted during the third SCALOP meeting held in Bologna, 20-22 June, 1991. They are to be used again in 1991 to collect information on waste management at Antarctic Stations, field camps and vessels for the period of 1 October 1990 - 30 September 1991. SCALOP members and national programme waste management officials continue to review this procedure and the design of the report format as they plan for their June 1992 meeting. A copy of the current format for the Waste Management Report is at Appendix 3.

7. Marine Pollution

- 7.1. Topics relating to marine pollution, and in particular oil spill prevention and response, have been addressed by COMNAP and SCALOP at each of their annual meetings since 1988. Comprehensive discussion papers were prepared for and considered at the 1990 meeting. The results of ATCMs III (1964), IX (1977),

X (1979), XI (1981), and XV (1989) were reviewed from the standpoint of implementing the various measures and recommendations. The review also included a description of the other international organisations, such as the IMO and the IHO, and the various international conventions that are pertinent. At the 1990 meeting in Sao Paulo COMNAP requested SCALOP to study this topic and to develop a "course of action" to guide national operators in the implementation of measures to prevent oil spills and the development of plans for contingency response.

- 7.2. A subgroup on Oil Spill Prevention and Response was established by SCALOP in 1990. It met in Washington, D.C. in May 1991 and developed a course of action for consideration at the COMNAP/SCALOP meetings in Bologna during June 1991.

Particular emphasis was placed on developing measures to prevent or minimise the risk of oil spills. The subgroup developed procedures/guidelines on the following topics:

- Oil spill contingency planning
- Fuel oil transfer at stations and bases; and
- Design of fuel oil storage facilities for stations and bases

- 7.3 In addition, the subgroup developed a series of recommendations on oil spill prevention and response which were considered and adopted at the 1991 COMNAP/SCALOP meetings in Bologna. The recommendations include the:

- (i) Development of Contingency Plans, at least to draft stage, for stations/bases by 31 December 1992 and for Antarctic vessels by 31 December 1995;
- (ii) Establishment of Regional Planning Committees which are to provide reports on the development of regional plans to the 1993 COMNAP/SCALOP meetings (A Regional Planning Committee in the form of a COMNAP subgroup has been established for the 25 de Mayo/King George Island area.);
- (iii) Implementation of SCALOP procedures for the transfer of fuel oil at stations and bases;
- (iv) Implementation of guidelines for the design of fuel oil storage facilities by the end of the decade;
- (v) Adoption of minimum standards of ice navigation experience for Masters and Chief Officers of Antarctic vessels;

- (vi) Use of light non-persistent fuels in Antarctica wherever practicable; and
- (vii) Identification of priorities for the preparation of hydrographic charts in conjunction with national authorities and the International Hydrographic Organisation.

7.4 In addition, with regard to the proposed Meeting of Experts as noted in Recommendation XV-4, it was recommended that:

- (i) The matters of polar vessel classification for new construction and the setting of minimum standards for vessels to be used in the Antarctic be referred by the ATCM to the International Maritime Organisation for consideration; and
- (ii) The question of a liability regime to apply in the event of a pollution incident be considered by the ATCM in the context of the Annex on Marine Pollution to the Protocol to the Antarctic Treaty on Environmental Protection; while (iii) The topics of Antarctic oil spill contingency planning and response equipment should continue to be handled directly by COMNAP/SCALOP.

8. Tourism

8.1 The COMNAP undertook a project to design a concise "Visitors' Guide to the Antarctic." The result is patterned on the safety card found in each airline passenger seat. It is informative yet simple, and its contents can be grasped quickly. The card, shown at Appendix 4, has been translated into several languages. It is designed to be placed in every cabin of every tourist ship bound for Antarctica, and at every Antarctic Scientific Station. Quantities were distributed before the start of the 1990-91 Austral Summer Season to such tour ship companies as Society Expeditions, Salen Lindblad Cruising, Travel Dynamics, and Ocean Cruise Lines.

9. Additional COMNAP/SCALOP Agenda

9.1 The Use of Alternative Energy in Antarctica

9.1.1 All of Antarctica's manned stations are powered by diesel generators. More than 40 research stations have to be annually supplied by vessel with several hundred thousand liters of diesel fuel. The unloading in the Antarctic from ship to shore, as well as the storage, is achieved by using barrels, rubber bladders or steel tanks. Besides the enormous transportation costs, the transfer to the stations and

storage of the fuel bear considerable environmental risks, as recent fuel spill incidents have demonstrated. Therefore, some nations have introduced the use of alternative energy sources into Antarctica with the aim of reducing the risk of spills and also the emissions from generators.

9.1.2 COMNAP has taken up through SCALOP the task to promote the introduction of alternative energy thereby mainly concentrating on the use of wind and solar power at permanent research stations and field camps. Antarctica is the "home of the blizzard" and the wind energy potential is higher than elsewhere. Similarly, the long daylight during the Austral summer makes it feasible to exploit the photovoltaic potential when most research activity occurs.

9.1.3 At its symposia on Antarctic logistics and operations SCALOP has commenced to collect information on the experience in the use of alternative energy. At its annual meeting in June 1991 in Bologna, SCALOP was tasked to create a subgroup with the goal:

- To evaluate the potential of alternative sources of energy in Antarctica
- To stimulate research for appropriate technologies
- To collect and distribute knowledge of technologies and applications and
- To foster the introduction of alternative energy use in Antarctica.

9.2 Siting of Stations

9.2.1 At their meetings in July 1990 and in June 1991 the members of COMNAP discussed the various aspects of the issue of siting of new stations in Antarctica. The basis of these discussions included considerations involving science, logistics and the environment as described in the reports of the XIIIth, XIVth and XVth ATCMs.

9.2.2 The terms of ATCM Recommendation XV-17 were recalled at Bologna and a COMNAP subgroup met in separate session. The group, chaired by the representative from Chile, included members from Argentina, Brazil, China, Netherlands, Norway and USSR.

9.2.3 After reviewing the work of the subgroup, the members of COMNAP summarised the situation as follows:

- While there are factors, such as mutual support in logistics, that would tend toward the location of new stations near existing ones, the preponderance of experience and consideration for efficiency in science and for environmental protection require that new stations be dispersed.
- An important and logical step in the planning for a new station is the completion of an environmental assessment. Following the Practical Guidelines that COMNAP has developed, this environmental assessment process would begin with the conduct of, at least, an Initial Environmental Evaluation (IEE). If the IEE discloses information that suggests to the decision maker that the proposed activity is likely to have more than a minor or transitory impact on the environment then a Comprehensive Environmental Evaluation should be conducted.
- As stressed in ATCM Recommendation XV-17, the keys are consultation, information sharing, and co-ordination. The COMNAP/SCALOP process of meetings, symposia, and communications provides the natural and expeditious forum for meeting this need.

9.3 Meteorology, Telecommunications, and Hydrometeorological Services to Marine Navigation in Antarctica

Individually, the various national programme managers have been aware of, and often involved in, the long and complex background of these meteorology and telecommunications issues within the Antarctic Treaty system. At their meetings in 1990 and 1991 members of COMNAP discussed these topics particularly with respect to ATCM Recommendation XV-18. COMNAP had already established direct liaison with the WMO Executive Council Working Group on Antarctic Meteorology (ECWGAM), and in 1990 the ECWGAM chairman met with a joint session of COMNAP and SCALOP. COMNAP has also been given copies of the report documents on Antarctic meteorology from the XI WMO Congress, the XLIII WMO Executive Council, and the fifth session of the WMO ECWGAM. Following the 1991 meeting the status of COMNAP discussion of these topics is:

- To continue active dialogue between COMNAP and ECWGAM;
- To reinforce the WMO position on improving the basic synoptic network in Antarctica as it pertains to considerations on the siting of new stations;

- To note the SCALOP initiative in reviewing the purpose, design and contents of the SCARCOM Manual and to encourage the anticipated revision by SCALOP of the SCARCOM in 1992; and
- To note that, at this time, there is no specific requirement for further joint or individual action with respect to the network of observing stations or the further development of analysis and forecast centres.

9.4 **Reporting Procedures**

A subgroup of SCALOP was formed and met during the June 1991 meeting to consider the various reports and advance exchanges of operational information now in use by COMNAP. As a result the subgroup will design a consolidated COMNAP report: The Advance Exchange of Information on Antarctic Activities. Standard annexes will include air operations (revised format), waste management, and ship operations. Distribution is to be by 1 September annually. The longer term aim of the subgroup is to review the ATCM annual Exchange of Information with a view to recommending the removal of operational and logistic information for subsequent inclusion in the COMNAP Advance Exchange.

10. **Conclusions and Prospects**

In the three years since its establishment, the Council of Managers of National Antarctic Programmes has developed as a valuable forum for direct and effective communications among the national operators. That forum has served primarily to foster improvements and co-ordination in logistic support activities and to assist the implementation of appropriate Recommendations of the ATCM, collectively striving for methods that are efficient, comparable and responsive. Furthermore, by harnessing the decision makers of the various national Antarctic programmes the Council is able to act with speed and authority, and to undertake the kinds of collective strategic study and planning necessary for the provision of sound advice to the ATCM.

The COMNAP and SCALOP agendas have expanded, subgroups composed of responsible officials have been created to move forward with continuous review in matters of concern in the areas of environmental assessment, air safety, waste management, marine pollution/contingency response, and the siting of stations. New issues are being brought forward for advance consideration such as the use

of alternative energy. Periodic symposia and workshops address timely and relevant topics especially related to new technology

COMNAP has become rapidly an essential additional element in the Antarctic Treaty system. Its future aims are to provide co-ordination of logistics in support of science activities, to tackle questions engaging Treaty governments, to offer considered advice and practical solutions, and to undertake realistic implementation of ATCM Recommendations swiftly and effectively. The combined membership of COMNAP represents considerable knowledge and experience in the management of Antarctic activities. The close association with the scientific responsibilities of SCAR is viewed by COMNAP as creating a unique combination in support of the work of the Antarctic Treaty and the furtherance of its principles.

To this end COMNAP seeks a high profile in a full advisory capacity to the ATCM on Antarctic logistic, operational and environmental matters within its competence.

List of Appendixes

1. Practical Guidelines for Antarctic Environmental Assessment
2. TIBA Procedures
3. Waste Management Report Format
4. Visitor's Guide to the Antarctic

Appendix 1

Council of
Managers of National Antarctic Programs

THE ANTARCTIC ENVIRONMENTAL ASSESSMENT PROCESS: PRACTICAL GUIDELINES

(Bologna, Italy June 20, 1991)

CONTENTS

1. INTRODUCTION
2. THE ENVIRONMENTAL ASSESSMENT PROCESS
 - 2.1 General considerations
 - 2.2 Description of the proposed activity
 - 2.3 Description of the environment in its initial reference state
 - 2.4 Analysis of expected impacts
 - 2.5 Mitigation measures
 - 2.6 Alternatives
 - 2.7 Monitoring of impacts
 - 2.8 Evaluation
 - 2.9 Timetable for the Environmental Assessment Process
 - 2.10 Audit Arrangements

APPENDIXES

- A. Practical Definitions and Examples
- B. Treaty Recommendations
- XII-4 Man's Impact on the Antarctic Environment
- XIII-4 Man's Impact on the Antarctic Environment: Codes of Conduct for Antarctic Expeditions and Station Activities
- XIV-2 Man's Impact on the Arctic Environment: Environmental Impact Assessment
- XV-1 Comprehensive Measures for the Protection of the Antarctic Environment and Dependent and Associated Ecosystems

(XIth Antarctic Treaty Special Consultative Meeting, Madrid)

PRACTICAL GUIDELINES

1. INTRODUCTION

1.1 The goal of this document is to provide the Managers of National Antarctic Programmes with an explicit and concise mechanism for the implementation of environmental assessment procedures; provision should be made for its continual review. Antarctic Treaty Consultative Meeting (ATCM) Recommendations XIV-2 and XV-1 have called for such procedures. The procedures are needed to disclose and to evaluate potential environmental impacts that may be associated with Antarctic scientific activities and the logistic operations that support that science. An additional purpose of these guidelines is to assure that the development of such mechanisms and associated procedures is fully coordinated among the national Antarctic programmes so as to be comparable, effective and justifiable. Also, it is hoped that these guidelines could serve as an aid to non-governmental organisations proposing activities in Antarctica.

1.2 ATCM Recommendations that embody the principles underlying these guidelines are:

- o XII-3, and XII-4 (Man's Impact on the Antarctic Environment);
- o XIII-4 (Man's Impact on the Antarctic Environment: Codes of Conduct for Antarctic Expeditions and Station Activities);
- o XIV-2 (Man's Impact on the Antarctic Environment: Environmental Impact Assessment); and
- o XV-1 (Comprehensive Measures for the Protection of the Antarctic Environment and Dependent and Associated Ecosystems).
- o (XI Antarctic Treaty Special Consultative Meeting, Madrid).

- 1.3 These Recommendations and statements encourage national Antarctic programmes to work in a coordinated fashion to develop environmental assessment procedures and mechanisms that:
- o are consistent with national laws and decisionmaking processes;
 - o embody a measure of comparability across programmes as well as activities to be undertaken;
 - o are implemented early in the various planning processes leading to decisions about research activities and the logistic activities supporting the research;
 - o consider impacts that may arise in the physical and biological components of the Antarctic environment, including its dependent and associated ecosystems
 - o allow subsequent validation of the effectiveness of environmental protection strategies by developing comparable baselines for subsequent environmental assessments.

2. THE ENVIRONMENTAL ASSESSMENT PROCESS

2.1 General considerations.

The environmental assessment guidelines that follow are meant to provide insights into the types of information that should be gathered for, and analyzed in, environmental assessments (see Appendix A for definition) to support environmental decisionmaking. The guidelines are intended to introduce a measure of comparability in the environmental assessment process used by national operators. The guidelines are meant to encourage flexibility and creativity in the preparation of such environmental documents as Initial Environmental Evaluations (IEEs) and Comprehensive Environmental Evaluations (CEEs) as defined in ATCM XIV-2 and shown in Appendix A of this document. They are not meant to constrain the format of environmental documents prepared by national programmes. Such flexibility and creativity is necessary given the inherent differences, in terms of type and scale, that are evident among Antarctic activities and Antarctic environments.

The use of clear and accurate diagrams, maps, and other illustrative materials is encouraged. The collection and documentation of information from the earliest stages of the planning process (including means for information storage and retrieval), the qualification of personnel performing environment -related studies and measurements, and analytical methods should be the object of quality control and quality assurance programmes.

Use of these guidelines marks one point where the importance of judgment and experience in the environmental assessment process becomes apparent. Such factors as timing, information needs and available resource (e.g., personnel, funds) must be considered in implementing these procedures as they may influence the type and amount of effort needed to bring an assessment document to a point where it is adequate for decisionmaking. These guidelines are meant to encourage interaction that leads to beneficial project modifications.

It is not possible to quantify all aspects of the environmental assessment process (e.g. aesthetic, historical and human values). Therefore, subjective evaluation will be a valid component of the overall process.

Constraints on completeness will vary with projects. Recognition of this will be valuable in evaluation procedures.

Resources required for the preparation of an environmental assessment should be considered during the planning of any project and the costs involved accepted as a valid part of that project.

Where activities are planned jointly by more than one member of COMNAP, those involved shall nominate one of their number to coordinate the environmental assessment process.

2.2 Description of the proposed activity.

Each proposed activity shall be described in such a way that an evaluation of its impact upon the environment can be performed.

The description should include an explanation of

- i. the purpose of and the need for the proposed activity
- ii. the principal characteristics of the proposed activity and features of the activity that might cause impact on the environment.
- iii. the relation of the proposed activity to relevant previous activities.

It is important to give such details as

- description of the activity's location and geographic area (to include indication of access routes and any maps)
- construction requirements (e.g., types of materials, technologies)
- transportation requirements (e.g., types and numbers of vehicles)
- size of any installation, including area, weight, volume, or other appropriate measures
- construction phase inputs (e.g., energy, transportation and personnel) and outputs (e.g., emissions, wastes)
- operational phase inputs (e.g., energy, transportation and personnel) and outputs (e.g., emissions, wastes)
- the timing of the activity (including range of calendar dates for installation time, and overall duration and periods (austral seasons) of operation of the activity)
- Disposition of wastes that are generated.

Decommissioning of activity

Consideration should be given at the time of planning to disposition of the subject activity or facility when it has fulfilled its purpose.

- 2.3 Description of the existing environment (e.g., the initial reference state, or the baseline environment or conditions).

A description of the environment in which the activity is to be performed should describe the state before the beginning of the activity. Maps, charts, photographs and other visual media should be used.

This description should include

- the physical characteristics (e.g., topography, bathymetry, geology, geomorphology, soils, hydrology, meteorology, and ice conditions)
- the biota (e.g. inventories of plant and animal species, populations and communities and other important features such as presence of breeding grounds). Furthermore describe any dependent and related populations (e.g., bird nesting area related to feeding area)

- existing environmental processes (e.g., sea ice cycles, ecosystem dynamics, phytoplankton production and decomposition). Important temporal and spatial characteristics should be described.

It is important to ensure that descriptions reflect the geographical extent of the activity under consideration (i.e., for an island, ice-free area or a lake give a general description as well as a more detailed site-specific description).

2.4 Analysis of expected impacts.

The expected nature of the impacts as well as their extent, duration, intensity and probability -- resulting from the proposed activity described in 2.2 on the environment described in 2.3 -- should be described.

The analysis of the environmental impact should be performed using state-of-the-art methodologies and making recourse to appropriate expertise, experience, empirical evidence, results from previous studies and monitoring. The analysis should also cover direct effects, indirect effects, and cumulative effects. (See Appendix A for definitions of these effects).

2.5. Mitigation measures.

Appropriate measures should be considered whenever possible to mitigate the effects of environmental impacts (e.g. adjusting the timing of a proposed activity to take into account sensitive periods of affected biological populations or ecological processes). These measures may apply either to the action itself to reduce the impact, or to the consequences of the impacts to minimize the environmental harm. The effectiveness of these measures may be verified through an appropriate monitoring programme, specified in the document.

2.6 Alternatives.

Reasonable alternatives to a proposed activity should be examined in concert with the analysis of impacts of the proposed activity to enable a decisionmaker to compare the environmental consequences of all alternatives being considered, including the proposed activity.

The respective consequences of the alternatives, both for the environment and for scientific activities, should be considered during the evaluation. Examples of

alternatives include the use of different locations or sites for the activity, use of different technologies, use of pre-existing facilities.

The alternative of not proceeding with the proposed activity (i.e., the no-action alternative) should be included in any analysis of environmental impacts to provide appropriate context for understanding the impacts of the proposed activity. For example, natural changes in biota or climate that have been verified through empirical investigation or generally-accepted principles should be described.

2.7. Monitoring of impacts.

Appropriate monitoring activities should be designed so as to be capable of fulfilling the following decisionmaking needs:

- provide baseline data against which actual impact may be assessed over time and in space to verify the assessment and identify unforeseen effects
- assist in evaluating the effectiveness of any mitigating measures.

Monitoring should be planned in relation to the duration and intensity of the expected impacts of the activity. For example, a short-term phase of monitoring may be required during the mobilization or actual construction work for a new facility. Long-term monitoring may be required during the operational lifetime of the facility and during the natural restoration time.

Monitoring should be scientifically justifiable, and include quality control and quality assurance of measurements.

2.8. Evaluation.

The evaluation should include both the consideration and comparison of impacts on the different environmental components affected and on the science programme.

The assessment should include an evaluation of all relevant information contained or referenced therein. Value judgements should be explicitly disclosed in the assessment.

The specific benefits accruing from proposed activity should be set out specifying their relevance to Antarctic research.

The acceptability of significant negative impacts on the natural environment has to be evaluated against the benefits of a different nature, such as the direct scientific goals or science support activities.

The following suggestions may be useful:

- i. Construct a matrix or table setting out advantages and impacts (disadvantages) of various elements of the proposed activity drawing upon the descriptions in earlier sections of the assessment.
- ii. For CEEs, managers should consider arrangements to assess the accuracy of the CEE predictions after the activity is concluded.
- iii. A brief non-technical summary of the issues identified and the conclusions reached is of value to all readers of an environmental assessment.

2.9. Timetable for the Environmental Assessment Process.

The environmental assessment process should be initiated at the earliest planning stage of an activity to enable adequate information gathering and baseline evaluations including necessary field studies). The environmental assessment should be completed before the final decision to start the activity is taken.

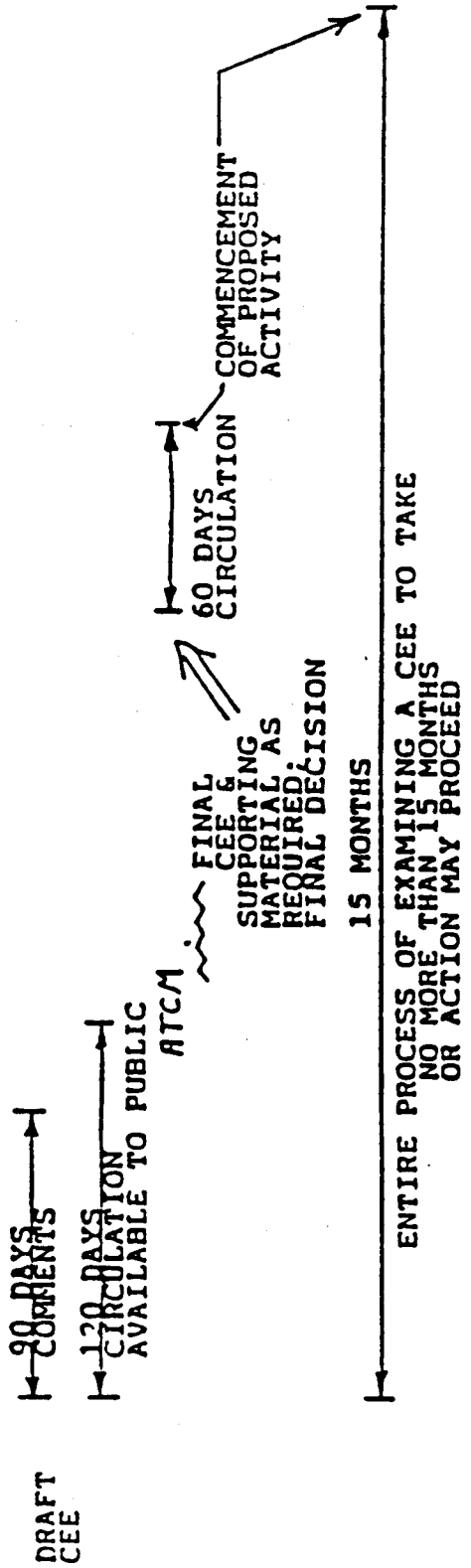
Any IEE should be sent, at an early stage, to any national programme potentially affected by the activity. Both IEEs and CEEs should be sent to the Executive Secretary of COMNAP for circulation as necessary.

The timetable for CEEs is shown at figure 1.

2.10 Audit Arrangements.

Managers should consider the value of establishing audit arrangements to support their environmental assessment procedures.

Figure 1 - TIMING OF CEES BASED ON 29 APRIL 1991 DRAFT PROTOCOL TO THE ANTARCTIC TREATY ON ENVIRONMENTAL PROTECTION [TO BE REVISED AS NEEDED DEPENDING ON THE OUTCOME OF PROTOCOL NEGOTIATIONS]



APPENDIX A

Practical Definitions and examples (for the purpose of this document):

Environmental Assessment.

A process for gathering, analysing and interpreting information on proposed activities and on environmental resources and qualities that allows determination of the impacts of those activities on those resources and qualities. It is a part of the overall activity planning process that helps decisionmakers to understand, prevent or mitigate the environmental consequences of their decisions. It is a process that relies on application of formal procedures to available information and is a process that often must depend upon judgment and experience when certain information is unavailable. The entire process is strengthened when use of such judgement and experience is acknowledged explicitly in the assessment.

Impact.

Any change, effect, deviation or consequence whether short or long-term that accrues from the development, initiation, conduct, operation, or maintenance of an activity.

Direct Effect.

Any first order effect, impact or consequence that may be associated with an activity. An example follows:

- o acute toxicity effects (mortality) in marine birds; or in intertidal limpets; or in pelagic krill caused by exposure to toxic constituents of petroleum products spilt at sea.

Indirect Effect.

Any second order effect, impact or consequence that may be causally associated with an activity. An example follows:

- o particulate emissions from combustion leading to melting of ice or snow that subsequently causes loss of ice or snow alga habitat.

Cumulative Impact.

Effects, impacts, or consequences that may come from similar or varied sources but, that are additive, antagonistic or synergistic in their effect, impact or consequence.

- o a significant increase in the number of vehicles in an ecological sensitive area.

Environment.

The combination of physical media (i.e. air, land, and water), the biota (i.e., living organisms), and the physical, chemical, biological and ecological processes that are evidenced as ecological systems (i.e., ecosystems). This definition includes those environments that are relatively undisturbed as well as those that have experienced prior natural or anthropogenic disturbances. Environments may be characterized on local, regional or continental scales; and they may contain individual landscape elements and ecosystems or combinations of landscape elements and ecosystems.

Mitigation.

The use of practice, procedure or technology to minimize or to prevent impacts associated with proposed activities.

Monitoring.

The purposeful measurement of the qualities or quantities of physical media, biota, or biological and ecological processes to characterize an environment or any of its physical, chemical or biological components over time and space in their natural or impacted states. To be effective, the goals of monitoring studies must be stated and understood explicitly; and, there must be careful planning to assure that experimental designs, sampling and statistical techniques adequately support data interpretations. Also, there is the need to provide adequate mechanisms for quality control and quality assurance of analytical techniques and equipment used in monitoring studies.

Initial Environmental Evaluation (IEE).

A decision support tool that attempts to describe clearly a proposed activity, describe an environment that may be impacted, and to describe impacts that might occur if the activity were undertaken. Also, the IEE attempts to disclose any alternatives to the proposed activity, other places where the activity could be sited, and why the preferred activity and location has been chosen. Finally, the IEE allows this information to be analysed in light of available empirical information (i.e., extant scientific or monitoring data, expert or relevant knowledge) so as to predict whether perceived impacts are, in fact, likely to occur. The IEE is undertaken ideally at the outset of the process of

planning a proposed activity; it may be undertaken, however, whenever the decisionmaker has the need for information with a "moderate level of resolution".

Should the analysis conducted within the IEE suggest no potential for significant impact, then the proposed activity may be undertaken without strict need for more comprehensive and exhaustive analysis. Should the analysis suggest a potential for significant impact then a Comprehensive Environmental Evaluation must be undertaken.

Comprehensive Environmental Evaluation (CEE).

The CEE is also a decision support tool. Overall, it describes and analyses the same types of information or judgment as does an IEE; the level of effort, in terms of information gathering, use of expert opinion, and analysis is, however, more comprehensive and exhaustive. The CEE is expected to provide the decisionmaker with a "higher level of resolution" with respect to potential impacts. Notwithstanding this higher level of resolution, the decisionmaker may choose at any time to conduct a CEE.

Initial Environmental Reference State.

The character, overall, of the site of a proposed activity as evidenced by such information as is available from scientific or monitoring studies, physical geographic descriptions, or knowledge about the biota and the environmental processes existing at the site. The site so characterized may be in a relatively undisturbed state or it may have been subjected to prior impacts (both natural and anthropogenic).

APPENDIX B
(not reproduced)

Treaty Recommendations

- XII-3 Man's Impact on the Antarctic Environment**
- XII-4 Man's Impact on the Antarctic Environment**
- XIII-4 Man's Impact on the Antarctic Environment: Codes of Conduct for Antarctic Expeditions and Station Activities)**
- XIV-2 Man's Impact on the Antarctic Environment: Environmental Impact Assessment**
- XV-1 Comprehensive Measures for the Protection of the Antarctic Environment and Dependent and Associated Ecosystems**

(XIth Antarctic Treaty Special Consultative Meeting, Madrid).

Appendix 2

Council of Managers of National Antarctic Programs

STANDING COMMITTEE ON ANTARCTIC LOGISTICS AND OPERATIONS

28 August 1990

SCALOP Notice No. 17

Subject: Establishment of TIBA Procedure

The use of Traffic Information Broadcasts by Aircraft (TIBA) in the Antarctic is specified in paragraph 5 of Antarctic Treaty Consultative Meeting Recommendation XV-20. At the meetings of COMNAP and SCALOP in 1989 the action to select a VHF frequency was initiated and the result was subsequently announced by SCALOP Notice No. 10 of 26 February 1990. At the July 1990 SCALOP meeting the acceptability of 129.7 mhz was confirmed. The purpose of this notice is to establish the use of TIBA in the Antarctic Treaty area.

The concept and procedures for the use of TIBA in the Antarctic are based on ICAO Annex 11 and on ATCM Rec. XV-20. The objective in the Antarctic is that national programme operators be mutually aware of current air operations. Primary and Secondary Air Information Stations are identified to facilitate the exchange of such information. Traffic information broadcasts by aircraft (TIBA) are to be used outside the traffic information coverage (VHF radio range) of primary and secondary stations, and are intended to permit reports of an advisory nature to be transmitted on a designated frequency for the information of pilots of other aircraft in the vicinity.

The following details and procedures are established for use by national programme operators, and will be reviewed annually by SCALOP. Members are requested to provide comments and suggestions to the SCALOP chairman, copy to the secretary and convenor of the air operations sub-group.

1. The TIBA frequency to be used in the Antarctic Treaty area is 129.7 mhz VHF.
2. Pilots should set a listening watch commencing 10 minutes before entering the Treaty area, or as soon as appropriate after take off within the area.
3. A broadcast should be made:
 - a. 10 minutes before entering the area,
 - b. as soon as appropriate after take off in the area,
 - c. at 20 minute intervals while enroute,
 - d. at the time of a change in flight level, and
 - e. at any time considered necessary by the pilot.
4. The form of the broadcast should be:

ALL STATIONS

(call sign)

FLIGHT LEVEL (number)

(direction) TRUE or GRID

(route) or DIRECT (position) TO (position)

POSITION (latitude and longitude) AT (time)

ESTIMATING (next reporting point) AT (time)

(call sign)

FLIGHT LEVEL (number)

OUT

5. It is not necessary that broadcasts be acknowledged except where:
 - a. the potential for dangerous proximity or collision is perceived,or
 - b. The potential for mutual support, communications relay, or contingency back-up is perceived.

Distribution: SCALOP members

Copy to: COMNAP members

A. N. Fowler
Executive Secretary

Appendix 3

STANDING COMMITTEE ON ANTARCTIC LOGISTICS AND OPERATIONS

26 September 1990

SCALOP Notice No. 20

Subject: Waste Management Plans and Information Exchange

The purpose of this Notice is to announce and circulate the adoption by SCALOP of a format and procedures for the annual exchange of plans and information on waste management in Antarctica. This is the result of the work of the Waste Management Sub-Group chaired by Roberto Cervellati and has been approved by the SCALOP chairman, Heinz Kohlen. These steps are taken toward implementation of ATCM Recommendation XV-3.

The enclosure has sixteen pages. The first page explains the organisation and use of the report format. Pages 2 through 7 provide the format to be used, and pages 8 through 16 [not reproduced] provide an example to illustrate its use. It is understood that modifications or additions to the format may be necessary to suit the needs and circumstances of each individual national programme.

With reference to paragraph 4 of ATCM Rec XV-3, it is recognised that the use of this format will not be part of the formal Treaty exchange for the period October 1990 through September 1991. The current use of this procedure will, however, result in:

- an early international exchange,
- a test of the usefulness of the format,
- initiation of standard waste classification,
- a basis for further discussion at the June 1991 COMNAP/SCALOP meetings,
- and a significant step toward implementation of ATCM XV-3.

ACTION 5-90 SCALOP members are to complete the report of waste management plans and information using the enclosed format for the period 1 October 1990 to 30 September 1991. The report should reach the SCALOP secretary by 15 November 1990 to be duplicated. A complete set will then be circulated to each SCALOP and COMNAP member by 1 December 1990.

A. N. Fowler
Executive Secretary

Enclosure

Distribution: SCALOP members

Copy to: COMNAP members

National programme points-of-contact for environmental affairs

Explanatory notes for the Exchange of Information on Waste Disposal

General notes

1. The Exchange Information should preferably be completed in the English language.
2. Waste is a material that is no longer usable or for which there is no intention to use.
3. Parts 1-5 cover Antarctic waste management activities and an inventory of past activities. A copy of Part 6 must be completed for each fixed site or field camp.

Detailed notes

4. **Part 1 - General** : The official named should be the person who has responsibility for waste management activities and will be the first point of contact for any enquiries.
5. **Part 2 - Training of Expedition Members** : Tick the appropriate boxes in questions 1, 2 and 3. Many Operators will need to tick several "Yes" boxes to fully answer question 1.
6. **Part 3 - Waste Reduction Programs** : Question 3 seeks information on ways by which an Operator is actively trying to reduce the amount of waste generated by their Antarctic operations. A new initiative should only be mentioned in its first year of operation.
7. **Part 4 - Fuel Consumption Estimate** : The figures given for fuel consumption are estimates only but should be based on the previous year's actual consumption with adjustments for known alterations in activities.
8. **Part 5 - Inventory of Past Activities** : Indicate if the inventory information is not fully complete because information has not yet been compiled.
9. Definitions of terms used in this table are :

Past activity - an area only becomes a "past activity" when it is not part of current or planned future operations. If an area is not a past activity but is an unoccupied building, hut or cache it should be mentioned under Item XI ("Description of unoccupied refuges", see ATCM Recommendation III-2) of the Treaty Exchange information. If you are unsure whether the site is part of future operations list it as a past activity.

Type of activity - examples include abandoned station or field camp sites, abandoned fuel caches, traverses, crashed aircraft, landfill sites, work sites, etc.

Level of activity - show what level of activity occurred at the site (the average number of persons if the site was a field camp) to indicate the human impact on that location.

Remnants - indicate date last visited, remaining facilities, debris or contaminants (eg radio-isotopes which may still be detectable) of any kind. Details of fuel caches should show type of container and fuel eg 50 x full 200 litre steel drums of petrol, 5 x empty 200 litre steel petrol drums.

10. **Part 6 - Individual Waste Management Summary** : One table should be completed for each vessel, fixed site, and for field sites in general (ie only one table for all field camps regardless of number) used by an Operator. Tick the appropriate boxes and add explanatory comments if necessary (see note 12). If more than one disposal option is ticked for one waste please show the approximate percentage of waste disposed of by each option in the relevant columns or in the "Comments" column.

Wastes are categorised on the basis of the nature of waste rather than by disposal options. An Operator may choose not to dispose of some combustible wastes (group 3) by burning because they do not have the proper equipment as required by the Treaty Recommendation XV-3.

11. A "fixed site" is any facility which has occupied or is intended to occupy, either intermittently or continuously the same location for more than two years; "field sites in general" comprise all other temporary (eg tent based) facilities; a "vessel" is a ship used in Antarctic activities other than small boats that are part of a fixed site or of vessels.
12. Remarks in the "Comments" column of the table should include :
 - a) whether incinerator emissions are monitored and how;
 - b) whether incinerator emissions are filtered (for particles) or "scrubbed" (for chemicals) and how; and
 - c) whether wastes are separated as part of their disposal.
13. Information on the quantities of wastes is encouraged. Although optional these estimates, if provided, may be based on the previous year's levels adjusted for alterations in activities.

The format and headings for presenting the Exchange Information on Waste Management are attached together with a completed example. The format is provisional and will be reviewed in 1991.

WASTES MANAGEMENT REPORT FOR PERIOD
1 OCTOBER 19..... TO 30 SEPTEMBER 19.....

PART 1 GENERAL

Country :

Waste management official :

Job title :

Postal address :

.....

.....

Telephone number :

Facsimile number :

Telex number :

Electronic mail number :

PART 2 TRAINING OF EXPEDITION MEMBERS

1)	Is training given to expedition members on waste management ? :	Yes	Nb
	prior to leaving for Antarctica	<input type="checkbox"/>	<input type="checkbox"/>
	while in Antarctica	<input type="checkbox"/>	<input type="checkbox"/>
	written material available	<input type="checkbox"/>	<input type="checkbox"/>

2)	Are expeditions advised of any PVC products being provided ?	Yes	Nb
		<input type="checkbox"/>	<input type="checkbox"/>

3)	Are expeditions advised that pesticides, polychlorinated biphenyls (PCBs), non-sterile soil or polystyrene beads, chips or similar forms of packaging shall not be sent to the Antarctic ?	Yes	Nb
		<input type="checkbox"/>	<input type="checkbox"/>

PART 3 WASTE REDUCTION PROGRAMS

1) Programs planned during the reporting year to clean up waste disposal and abandoned work sites :

.....
.....
.....

2) Arrangements for analysing or monitoring the environmental effects of Antarctic wastes and waste management systems :

.....
.....
.....

3) New waste reduction initiatives planned for introduction in the reporting year :

.....
.....
.....

PART 6 - INDIVIDUAL WASTE MANAGEMENT SUMMARY

ANNEX Page 1 of 3

Name of Fixed site/Field Camps in general/Vessel Position (Lat, Long) Location Category - Coastal ice free
 Inland ice free
 Coastal ice sheet
 Inland ice sheet
 Ice shell
 Vessel

(For field camps give total number of sites) Number of days occupied
 (For vessels, give number of days in Antarctic Treaty area)

Average daily population - Summer
 Winter

GROUP 1 - SEWAGE & DOMESTIC LIQUIDS

TYPE	DISPOSAL METHODS							Quantity (Optional)	Comments	
	Removed from Treaty area	Removed to station	Sea or sea ice	Ice pit	Maceration	FBC	Incineration (describe type)			Other
Sewage									L	
Grey water									L	
Sewage treatment (eg FBC) residue									L	

GROUP 2 - OTHER LIQUID CHEMICALS & WASTES (INCLUDING FUELS & LUBRICANTS)

TYPE	DISPOSAL METHODS		Quantity (Optional)	Comments
	Removed from Treaty area	Removed to station		
Photographic chemicals			L	
Other liquid chemicals			L	
Fuels			L	
Lubricants			L	
Heavy metals and/or harmful persistent compounds			L	
Other liquid wastes (please list)			L	

• Quantities : L = Litres, CM = Cubic Metres, Kgs = Kilograms, No. = Number

GROUP 3 - COMBUSTIBLE WASTES

TYPE	DISPOSAL METHODS							Quantity *	Comments
	Removed from Treaty area	Landfill	Removed to station	Sea or sea ice	Open burn	Basic Incinerator	High temp Incinerator		
Paper products								OM	
Untreated wood								OM	
Treated wood								OM	
Food scraps								OM	
PVC								OM	
Polyurethane & polystyrene foams								OM	
Other plastics								OM	
Rubber								OM	
Cultures of micro-organisms								Kgs	
Other (please list)									

Note - show in "Comments" column whether combustion emissions are controlled or monitored and provide details separately.

GROUP 4 - OTHER SOLID WASTES

TYPE	DISPOSAL METHODS					Quantity *	Comments
	Removed from Treaty area	Landfill	Removed to station	Sea or sea ice	ice pit		
Glass							
Aluminium							OM
Other metals							OM
Batteries							OM
Non-liquid chemicals							Kgs
Fuel drums (empty)							Kgs
Incinerator residue							No.
Other solid wastes (detail)							OM

* Quantities : L = Litres, CM = Cubic Metres, Kgs = Kilograms, No. = Number

GROUP 5 - RADIOACTIVE WASTES

TYPE (Please list isotopes)	DISPOSAL METHODS		Quantity (Optional)	Comments
	Removed from Treaty area	Other		
			L	
			L	
			L	
			L	
			L	
			L	
			L	

* Quantities : L - Litres, CM - Cubic Metres, Kgs - Kilograms, No. - Number

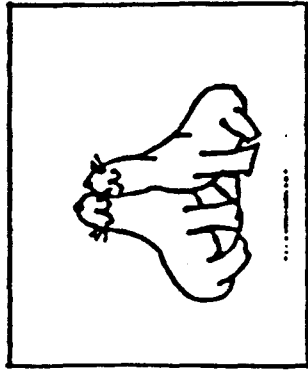
Visits to Scientific Stations In Antarctica

Stations in Antarctica are established for scientific research and are managed by a national scientific organization in each country. Visitors should be aware that their visit may be disruptive to science.

- A prior request for a visit, including anticipated day of visit and number of persons should be made prior to the beginning of the operating season. Such a request enhances the possibilities for a positive reply.
- Visitors should confirm their arrival directly to the station manager 24-72 hours before arrival. Permission to visit the station could be denied.
- The use of the station facilities is subject to invitation or prior approval from the station manager. Treaty rules permit station managers to deny visits or to determine the manner in which they are conducted.
- The visitors must stay together as a group and follow the instructions given by the guide. There must be no disruption of scientific programs.
- Private expeditions must be self-sufficient and are encouraged to carry adequate insurance coverage against the risk of incurring financial charges or material losses in the Antarctic. If emergency assistance is required, an agency involved in rescue may reserve the right to seek, in accordance with international and its domestic law, recovery of all direct and indirect costs of any such emergency search and rescue.
- Measures adopted within the Antarctic Treaty System are in force, and require compliance by member states and their citizens. See Section 2.2, Handbook of the Antarctic Treaty System, Part 2, "Expeditions and Visitors"; Sixth Edition, 4/89.
- Do not touch or steal from any depot, hut, or refuge. Peoples' lives might be jeopardized.
- Do not approach any wildlife. Much of it is in its breeding cycle in the tourist season. You might cause animals to abandon their young. Also, some animals can be a direct physical threat.
- If you have a marine band radio, remember that marine channel 16 is for primary contact only.
- If you are operating an aircraft, a Traffic Information Broadcast by Aircraft (TIBA) frequency of 129.7 MHZ has been established in the Antarctic Treaty Area. (TIBA is described in ICAO Annex 11.)

VISITORS' GUIDE TO THE ANTARCTIC

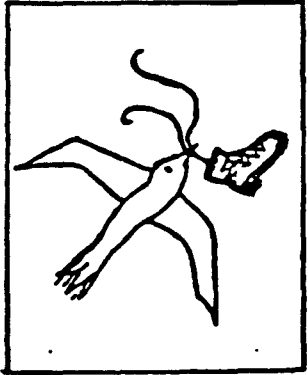
CARE FOR THE ENVIRONMENT



The Antarctic environment can easily be damaged. Please respect it.

- Plants are rare, fragile and slow growing. Avoid walking on moss and lichens. It takes years for these to recover.
- Do not collect organic matter such as lichens and mosses.
- If birds or seals react to your presence, you are too close. Keep your distance!
- Allow fossils and rocks to remain undisturbed.
- Keep to established tracks or trails. Avoid walking on undisturbed ground.
- Be sensitive in the way you take photographs. Do not disturb plants or animals.

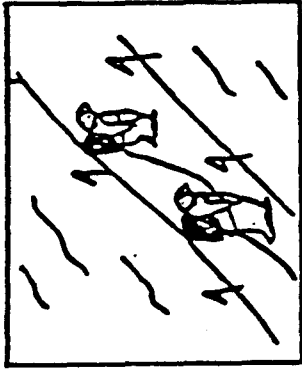
LITTER AND HUMAN IMPACT



In Antarctica it can take decades for human trash or artifacts to break down.

- Take all your litter with you.
- Do not throw litter overboard from ships.
- The Antarctic Treaty's Code of Conduct on Waste Management provides solid guidance on minimizing adverse effects of human presence.
- Avoid trampling of sites.
- Please respect historic sites. They are protected by the Antarctic Treaty.
- Emergency depots and refuges must not be disturbed.

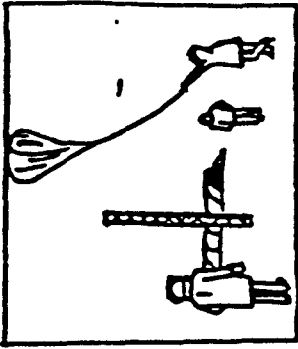
SAFETY



Antarctica is a very hazardous place.

- Be alert!
- Plan your activities with safety in mind at all times.
- Be prepared to survive in the cold.
- Be self-sufficient in your plans and the equipment you carry.
- Do not expect a rescue service.
- Learn about Antarctic hazards
- Always stay with your group.

SCIENCE STATIONS AND PROGRAMS



Research in Antarctica is making a special contribution to international understanding of the globe.

- Check with the station managers in the area you are visiting before you visit Antarctica. They can inform you of their activities.
- Stations are home for antarctic personnel. Please respect their property and privacy.
- Do not disturb sites where scientific research is going on.
- Check on the research activities that are underway in the area you are visiting.
- Do not automatically expect support from research stations. They are not set up as visitor hostels.

COUNCIL OF MANAGERS OF NATIONAL ANTARCTIC PROGRAMS

OFFICERS

CHAIRMAN	MARIO ZUCHELLI (Italy)
VICE-CHAIRMAN (PAST CHAIRMAN 1988-91)	DAVID DREWRY (UK)
VICE-CHAIRMAN (CHAIRMAN ELECT 1994)	ANDERS KARLQVIST (Sweden)
CHAIRMAN (STANDING COMMITTEE ON ANTARCTIC LOGISTICS AND OPERATIONS)	HEINZ KOHNEN (FRG)
EXECUTIVE SECRETARY	AL FOWLER

Secretariat: c/o American Geophysical Union
2000 Florida Avenue, NW
Washington, DC 20009, USA
Telephone: 010-1-202-939-3218
Telefax: 010-1-202-328-0566
Electronic mail from OMNET: [de3aip]ANF

MEMBERS

MNAP (M) - SCALOP (S)

ARGENTINA	(M)	Brig. Gen. Jorge Leal	NETHERLANDS	(M)	Dr Jan H. Stel
	(M)	Dr Carlos A. Rinaldi			
	(S)	Mr Andres J. Bruno	NEW ZEALAND	(S)	Mr David Geddes
AUSTRALIA	(M)	Mr Rex Moncur	NORWAY	(M)	Dr Nils Are Oritsland
	(S)	Mr Jack Sayers		(S)	Dr Olav Orheim
BRAZIL	(M)	Capt. Antonio J. Teixeira	PERU	(M)	Amb. Fortunato I Cayo
	(S)	Capt. Daniel C. Monteiro			
CANADA	(S)	Mr Dennis Stossel	POLAND	(M)	Prof. K. Birkenmajer
				(S)	Dr S. M. Zalewski
CHILE	(M)	Amb. Oscar Pinochet de la Barra	REPUBLIC OF	(M)	Dr Byong-Kwon Park
	(S)	Mr Sergio Lizasoain	KOREA	(S)	Dr Dong-Yup Kim
CHINA	(M)	Mr Guo Kun	SOUTH	(M)	Mr Dirk van Schalkwyk
	(S)	Mr Gao Qinquan	AFRICA	(S)	Mr Bernard Gaum
ECUADOR	(M)	Capt. Jose A. Moran	SPAIN	(M)	Dra. Josefina Piulachs
FINLAND	(M)	Dr Pentti Malkki		(S)	Mr Elias Meana
	(S)	Mrs. Riitta Mansukoski	SWEDEN	(M)	Prof. Anders Karlqvist
FRANCE	(M)	Mr Bernard de Gouttes		(S)	Dr Olle Melander
GERMANY	(M)	Prof. Dr Gotthilf Hempel	USSR	(M)	Dr A. N. Tchilingarov
	(S)	Dr Heinz Kohnen		(M)	Dr Valery V. Lukin
INDIA	(M)	Prof. V. Gaur		(S)	Dr Valery Klovov
	(S)	Mr H. P. Rajan	UK	(M)	Dr David J. Drewry
ITALY	(M)	Dr Mario Zucchelli		(S)	Mr John Hall
	(S)	Dr Franco Orlandini	USA	(M)	Dr Peter E. Wilkniss
JAPAN	(M)	Mr Ichita Itabashi		(S)	Mr Erick Chiang
	(M)	Dr Takao Hoshiai	URUGUAY	(M)	Gen Mario Aguerrondo
	(S)	Dr Sadao Kawaguchi		(S)	Mr Delco Almada

ANNEX C

**REPORTS IN RELATION TO
ARTICLE III (2) OF THE ANTARCTIC TREATY**

(i)
**REPORT SUBMITTED BY THE
WORLD METEOROLOGICAL ORGANISATION (WMO)**

Mr Chairman,

1. Since the XVth ATCM WMO activities in the field of Antarctic meteorology were as follows:

- The fifth session of the WMO Executive Council Working Group on Antarctic Meteorology met in Geneva in December 1990 (this body meets only every 4 years).
- Discussion of its report took place at WMO eleventh Congress and WMO Executive Council in May 1991.
- A specialised meeting reported on Antarctic telecommunications in December 1989 and a further meeting will be held in October 1991 (i.e. later this month).

2. The reports of these meetings cover matters of meteorological, networks telecommunications, special observing programmes, research and the provision of meteorological services particularly for marine navigation and aviation. These items will be covered in items 12 (a), 15, 16 and 18 of the agenda of the present Meeting.

3. Mr Chairman, WMO has circulated 2 information papers (XVI ATCM/INFO 31 and INFO 48) relevant to items 15 and 16 which may assist the Meeting in its consideration of these items.

Thank you, Mr Chairman.

(ii)

**REPORT OF THE ANTARCTIC AND SOUTHERN OCEAN COALITION (ASOC)
TO THE XVIth ANTARCTIC TREATY CONSULTATIVE MEETING**

The Antarctic and Southern Ocean Coalition (ASOC) is pleased to participate in this ATCM, especially now that almost all items on the agenda relate, directly or indirectly, to environmental protection, and to the science that underpins protection of both the Antarctic and the global environment.

ASOC wishes first to congratulate the governments for having agreed on the new Protocol on Environmental Protection to the Antarctic Treaty. Our more than 200 member organisations in 45 countries believe that the Treaty Parties' commitment to "the comprehensive protection of the Antarctic environment and its dependent and associated ecosystems" is the beginning of a new period in the evolution of the Antarctic Treaty.

ASOC endorses the designation of Antarctica as a "natural reserve, devoted to peace and science" and looks forward to working closely with the Treaty governments and other observers to implement it. The signing of the Protocol is, however, just the first step. It is important that the agreement is rapidly ratified by all Consultative Parties. Equally important, the Protocol has to be translated into legally enforceable regulations in each country and implemented in the actual practices of each country.

In the period prior to entry into force, ASOC hopes that all Parties will apply the Protocol's provisions. The Environmental Committee should be brought into operation this year, at least on an informal but practical basis. There are a number of ways this could be accomplished. Likewise, the EIA process can be used by all Parties, and the Annexes on waste disposal, prevention of marine pollution, and conservation of fauna and flora put into practice as though they were legally binding.

Pursuant to Article III (2) of the Antarctic Treaty, ASOC and its member organisations will be presenting a number of information papers and comments on various agenda items. Among these are items 6 (report of the XIth Special Consultative Meeting), 7 (b) (public availability of documents), 7 (c) (examination of Recommendations), 7 (d) (exchange of information), 9 (environmental monitoring), 10 (human impact on the

Antarctic environment), 11 (protected areas), 12 (promotion of international scientific co-operation), 13 (international scientific and logistic co-operation), and 14 (tourism).

In the context of the new Protocol, ASOC has prepared a paper on its implementation, and the filling of the remaining gaps in a comprehensive system. One of the main gaps relates to liability provisions, and ASOC has also prepared a paper on this subject.

Utilizing the Antarctic experiences of one of our member groups, Greenpeace International, ASOC will be presenting a detailed report of several Antarctic bases inspected in the 1990-91 season. ASOC will also circulate on behalf of Greenpeace a draft IEE on the forthcoming removal of its World Park Base.

ASOC will continue to monitor closely the progress towards comprehensive environmental protection made by the Treaty Parties, and hopes that the most encouraging momentum achieved in the past eleven months will be sustained.

ANNEX D

**DRAFT LISTS OF RECOMMENDATIONS
(PARAGRAPH 49 OF THE FINAL REPORT, PART I)**

**Draft list of Recommendations which may be spent
(proposed by China and Uruguay)**

I-XI	Telecommunications
I-XV	Second Consultative Meeting
II-III	Telecommunications
II-V	Symposium on logistic problems
II-VIII	International Year of the Quiet Sun (64-65)
II-X	Third Consultative Meeting
III-III	Logistics
III-IV	Next Meeting
III-V	Telecommunications
IV-25	Meeting on logistics
IV-26	Telecommunications
IV-28	Next Meeting
V-1	Commemorative Stamps Issue
V-8	Examination of Draft Convention for the Regulation of Antarctic Pelagic Sealing
V-9	Sixth Consultative Meeting
VI-8	Permits for entry to SPA
VI-15	Seventh Consultative Meeting
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-22	Antarctic Treaty thirtieth anniversary commemorative stamp issue

Draft List of Recommendations
(proposed by Belgium)

Relations between the Madrid Protocol and Recommendations
adopted by
Antarctic Treaty Consultative Meetings

Information Note

Note: This "prima facie" schedule of relations between the Protocol on Environmental Protection to the Antarctic Treaty and the Antarctic Treaty Recommendations is based on the Recommendations as given in the "Handbook of the Antarctic Treaty System," seventh edition, October 1990.

I. Institutional Aspects and Operation of the System

Note: As the Protocol constitutes an additional agreement to the Antarctic Treaty of 1959 using the same decisionmaking body (the Consultative Meeting), Recommendations relating to the operation of the Antarctic Treaty system are also applicable to the Protocol for logical reasons. Due to questions of interpretation arising from that fact and to the lack of time available a selection of relating Recommendations is not proposed.

1.1. Operation of the Antarctic Treaty system

1.1.1. Consultative Meetings

I-XIV	Administrative Arrangements for Consultative Meetings	P 1102
I-XVI	Preparations for Consultative Meetings	P 1102
XIII-15	Matters relating to the appointment of Observers at Consultative Meetings	P 1108

1.1.2. Meeting of Experts

III-VI	Questions concerning Meetings of Specialists	P 1110
IV-24	Meeting of Experts	P 1110

1.2. Operation of the Antarctic Treaty System: Information

1.2.1. General overview of the operation of the System P 1201

XII-6	Operation of the Antarctic Treaty System	P 1201
XIII-1	Operation of the Antarctic Treaty System: Information	P 1202
XIII-2	Operation of the Antarctic Treaty System: Overview	P 1203

1.2.2. Organisations

Note: The role of (international or non-governmental) organisations is mentioned in Article 11 (4) of the Protocol (Committee for Environmental Protection), in Article 12 (2) (Functions of the Committee) and in Article 15 (3).

I-IV	SCAR	P 1208
I-V	International Organisations	P 1209
V-3	Southern Ocean	P 1209
XII-8	SCAR assistance to Consultative Parties	P 1209

1.2.3. Documents of Consultative Meetings

XIV-1	Operation of the Antarctic Treaty system: Public availability of the documents of Consultative Meetings	P 1212
-------	--	--------

1.3. Inspections under Article VII of the Antarctic Treaty

Note: Article 14 of the Protocol refers to inspections carried out in conformity with Article VII of the Antarctic Treaty and taking place in areas open to inspections according to Article VII (3).

1.4. Exchange of information : Implementation of Articles III (1) and VII (5) of the Treaty

Note: Reference is made to Article VII (5) of the Antarctic Treaty (Notification) and to Articles 3 (4), 8 (2), 15 (1 a) and 14 (3) of the Protocol.

The Protocol provides for new obligations concerning exchange of information:

e.g. - cp. Article 17 (annual report) including notifications in accordance with Article 13 (3) (compliance) and contingency plans (Art. 15);

- cp. Article 14 (4) relating to reports of inspections;

- cp. Article 6 (2) (co-operation).

On this subject consulting the exhaustive study "Antarctic treaty information exchange and reporting requirements" submitted by Australia (XVI ATCM/INFO 30) is of advantage.

VIII - 6	Annual exchange of information	P 1402
XIII - 3	Exchange of information in accordance with the Antarctic treaty: annual exchanges	P 1404

Exchange of information probably of interest for the protection of the environment:

VI - 12	Scientific research rockets	P 1405
I - XIII	Exchange of information on nuclear equipment and techniques	P 1407

Exchange of scientific or technical information (cp. Art. 6 (2) of the Protocol)

I - I	Scientific programmes	P 1407
I - III	Scientific data	P 1407
II - I	Scientific data	P 1407
I - VII	Logistic problems	P 1407

1.5 Facilitation of international scientific co-operation (cp. Art 6 of the Protocol)

XV - 14	Promotion of international scientific co-operation	P 1501
XV - 15	Promotion of International scientific co-operation	P 1502

VII - 8	Co-operation in transport	P 1526
VIII - 7	Co-operation in transport	P 1527
IX - 4	Co-operation in transport	P 1527
I-II	Exchange of scientific personnel	P 1535
II-VII	Shipment of scientific materials	P 1535

1.5.1 Assistance in emergency (cp. Art. 15 of the Protocol)

I-X	Assistance in Emergency	P 1532
-----	-------------------------	--------

1.5.2 Scientific data (cp. Art 6 (2) Protocol)

XIII - 5	Man's Impact on the Antarctic Environment: additional collective arrangements	P.1532
XV - 16	Facilitation of scientific research: comparability and accessibility of Antarctic scientific data	P 1533

1.6 Activities of States that are not Consultative Parties

XIII - 8	Activities of States that are not Consultative Parties.	P 1701
----------	--	--------

Status of Antarctic Treaty Recommendations (Art. 10 of the Protocol)

II-IX	Consultative Meeting Recommendations	P E1
III - 7	Acceptance of approved Recommendations	P E1

II. Substantive Law

A. The Antarctic Protected Area System

Note: The Antarctic Protected Area System is envisaged in the Protocol implicitly in Article 10 (1 a) (General policy) and expressly in Article 12 (1 g) (Functions of the Committee).

In this sense the document presented by the United Kingdom ("Area Protection and Management in the Antarctic", XVI ATCM/WP 1) envisages the adoption of an annex covering all kinds of protected zones which have been established by Recommendations: Specially Protected Areas, Sites of Special Scientific Interest, Historic Sites and Monuments, Specially Reserved Areas, Multiple-use Planning Areas.

Specially Protected Areas

XIII - 5	Man's Impact on the Antarctic Environment: additional collective arrangements	P 3101
III-VIII	Agreed Measures for the conservation of Antarctic Fauna and Flora (Art. VIII)	P 3201
XIII - 13	Specially Protected Areas	P 3219
XV - 8	Amendment to Art. VIII of the Agreed Measures	P 3220
XV - 9	Development of improved descriptions and management plans for Specially Protected Areas.	P 3221

Sites of Special Scientific Interest

VII - 3	Sites of special scientific interest	P 3301
V III - 3	Sites of special scientific interest	
VIII - 4	Sites of special scientific interest Interim guidelines	P 3302
X - 5	Sites of special scientific interest Interim guidelines	P 3308
X - 6	Sites of Special scientific interest	P 3309
XII - 5	Sites of special scientific interest	P 3309
XIII - 7	Sites of special scientific interest Interim guidelines: Extension of designation.	P 3310
XIII - 8	Sites of special scientific interest. Interim guidelines: Additional sites	P 3311
XIII - 9	Sites of special scientific interest. Interim guidelines:	P 3325

XIV - 4	Sites of special scientific interest. Interim guidelines: Extension of designation	P 3326
XIV - 5	Sites of special scientific interest. Interim guidelines: additional sites	P 3327
XIV - 6	Marine sites of special scientific interest.	P 3337
XV - 6	New sites of special scientific interest	P 3337
XV - 7	Re-designation of specially protected area No.11	P 3341

Historic Sites and Monuments

I - XI	Historic sites	P 3401
V - 4	Historic monuments	P 3401
VI - 14	Historic monuments	P 3401
VII - 9	Historic monuments	P 3401
XIV - 8	Historic sites and monuments	P 3406
XV - 12	New Historic sites and monuments	P 3407
XV - 13	Historic sites and monuments (Amendment to descriptions of HM53)	P 3407

Specially Reserved Areas

XV 10	Establishment of specially reserved Areas	P 3501
-------	---	--------

Multiple-use Planning Areas

XV - 11	Establishment of Multiple-use Planning Areas	P 3601
---------	---	--------

B. The Antarctic Environment

2.1 The Antarctic Environment

2.1.1 General provisions

VI - 4:	Man's Impact on the Antarctic Environment	P 2101
---------	--	--------

VII - 1:	Man's Impact on the Antarctic Environment	P 2101
VIII - 13	The Antarctic Environment	P 2101
IX - 5	Man's impact on the Antarctic Environment	P 2102

2.1.2 Environmental impact assessment

XII - 3	Man's Impact on the Antarctic Environment	P 2108
XIV - 2	Man's Impact on the Antarctic Environment: E.I.A.	P 2109

2.1.3 Siting of stations

XIII - 6	Siting of staitons	P 2111
XV - 17	Siting of stations	P 2112

2.2 Environmental conduct

VIII - 11	Man's impact on the Antarctic Environment	P 2201
-----------	---	--------

2.2.1 Waste disposal

XII - 4	Code of conduct for Antarctic Expeditions and station activities	P 2203
XIII - 4	Code of conduct for Antarctic Expeditions and station activities: waste disposal	P 2203
XV - 3	Code of conduct for Antarctic Expeditions and station activities: waste disposal	P 2204

2.2.2 Marine pollution

XV - 4	Prevention: control and reduce to marine pollution	P 2207
--------	--	--------

2.2.3 Oil contamination

IX - 6	Oil contamination of the Antarctic Marine Environment	P 2210
X - 7	Oil contamination of the Antarctic Marine Environment	P 2210

2.2.4 Disposal of nuclear waste

VIII - 12	Disposal of nuclear waste	P 2212
-----------	---------------------------	--------

2.2.5 Use of radio-isotopes

VI - 5	The use of radio-isotopes in the Antarctic	P 2212
VI - 6	Co-ordination of Antarctic Scientific Investigations involving the use of radio-isotopes	P 2212

2.2.6 Scientific Drilling in the Antarctic Treaty Area

XIV - 3	Safeguards for scientific drilling	P 2213
---------	------------------------------------	--------

2.3 Environmental monitoring

XV - 5	Environmental monitoring in Antarctica	P 2301
--------	--	--------

2.4 Conservation of fauna and flora

I - VIII	Conservation of Antarctic fauna and flora	P 2402
II - II	Conservation of Antarctic fauna and flora	P 2403
III - VIII	Agreed measures	P 2403
III-IX	Interim Guidelines	P 2407
III - 10	Interest of SCAR	
IV - 18	Co-operation in implementing Art.VI	
IV - 19	Implementation of Art XII 1d)	
IV - 20	Interim guidelines	

VI - 9	Data	
VI - 2	Review of specially protected areas	P 2409
XIII - 14	Specially protected areas: Interim guidelines	P 2410

2.5 New Islands

VI - 11	New Islands	P 2501
---------	-------------	--------

2.6 Tourism and Non-Governmental Activities

IV - 27	Effects of Antarctic tourism	P 2601
VI - 7	Effects of tourists and non-governmental expeditions to the Antarctic Treaty Area	P 2601
VII - 4	Effects of tourists and non-governmental expeditions to the Antarctic Treaty Area	P 2602
VIII - 9	Effects of tourists and non-governmental expeditions to the Antarctic Treaty Area	P 2602
X - 8	effects of tourists and non-governmental expeditions to the Antarctic Treaty Area	P 2605

2.7 Uses of Antarctic Ice

XV - 21	Use of Antarctic ice	P 2701
---------	----------------------	--------

C. Diverse

XI - 3	Air Disaster on Mount Erebus	P 2606
X - 4	Man's Impact on the Environment: Collection of geological specimens	P 1535

ANNEX E

**LIST OF INSPECTIONS
CARRIED OUT SINCE THE XVth ATCM
(PARAGRAPH 57 OF THE FINAL REPORT, PART I)**

List of Inspection Reports
submitted since the XVth ATCM

Inspecting Country	Date of Insp.	Date of Rep.	Stations inspected	Report available at:
1. GERMANY/FRANCE	4-10 Dec 1989	Apr 1991	Juan Carlos I (Spa) Com. Ferraz (Bra) King Sejong (R.Kor) Esperanza (Arg) O'Higgins (Chile) Artigas (Uru) Faraday (UK) Palmer (USA)	Alfred-Wegener-Institut (AWI) Columbusstrasse Postfach 12 01 61 D- 2850 Bremerhaven/Germany Territoire des Terres Aus. et Antarctiques Françaises-TAAF 34, Rue des Renaudes 75 017 Paris France
2. NEW ZEALAND/ UNITED KINGDOM	Dec/Jan 89/90		(Arg) (Bra) (Chile) (China) (Pol) (R.Kor) (USA) (Uru) (USSR)	Legal Directorate Ministry of External Relations and Trade Private Bag Wellington New Zealand or: Polar Regions Section, South Atlantic and Antarctic Department Foreign and Commonwealth Off. London SW1 A 2AH, UK
3. NEW ZEALAND	Dec/Jan 89/90		(UK)	see No. 2

4. BRAZIL	2-4 Jan 1990	June 1990	King Sejong (R.Kor) Gen. Artigas (Uru) Jubany (Arg) Great Wall (China)	Division of Marine, Antarctic and Outer Space Affairs DMAE Ministério das Relações Ext. Sala 305 - Anexo I Esplanada dos Ministérios 70.170 Brasília, DF Brazil
5. NORWAY	12-22 Feb 90		Halley Base (UK) Sanae Base (RSA) G.v.Neumayer (Ger)	Royal Ministry of Foreign Affairs Polar Section POB 8114 Dep 0032 Oslo 1 Norway
6. CHILE	03 Jan - 25 Feb 90		(SU) (Uru) (China) (Arg) (Spa) (Pol) (Bra) (Ecu)	Instituto Antártico Chileno Luis Thayer Ojeda 814 Santiago CHILE
7. CHINA	10-17 Dec 90		Bellingshausen (SU) Marsh Base (Chile) Artigas (Uru) Arctowski (Pol) Com. Ferraz (Bra) King Sejong (R.Kor) Jubany (Arg)	Department of Treaty and Law Ministry of Foreign Affairs Beijing, 100 701 China, the People's Rep. of Chinese Antarctic Administr. No. 1 Fuxingmenwai Av. Beijing, 100 800 China, the People's Rep. of

8. CHILE	29 Jan - 20 Feb 1991		Maldonado Base (Ecu) Deception R. (Pol) Deception R. (NL) Seal Island R. (USA)	see No. 6
9. AUSTRALIA	6 Feb 1991	Aug 1991	Zhong Shan (China)	Antarctic Division Department of the Arts, Sport the Environment, Tourism and Territories Channel Highway Kingston, Tasmania 7050 Australia

ANNEX F

ANTARCTIC PROTECTED AREA SYSTEM

(i)

**Revised map of Site of Special Scientific Interest No. 17,
Clark Peninsula, Budd Coast, Wilkes Land
(paragraph 76 of the Final Report, Part I)**

(ii)

**Management Plan for proposed Specially Reserved Area
on North Side of Dufek Massive
(paragraph 83 of the Final Report, Part I)**

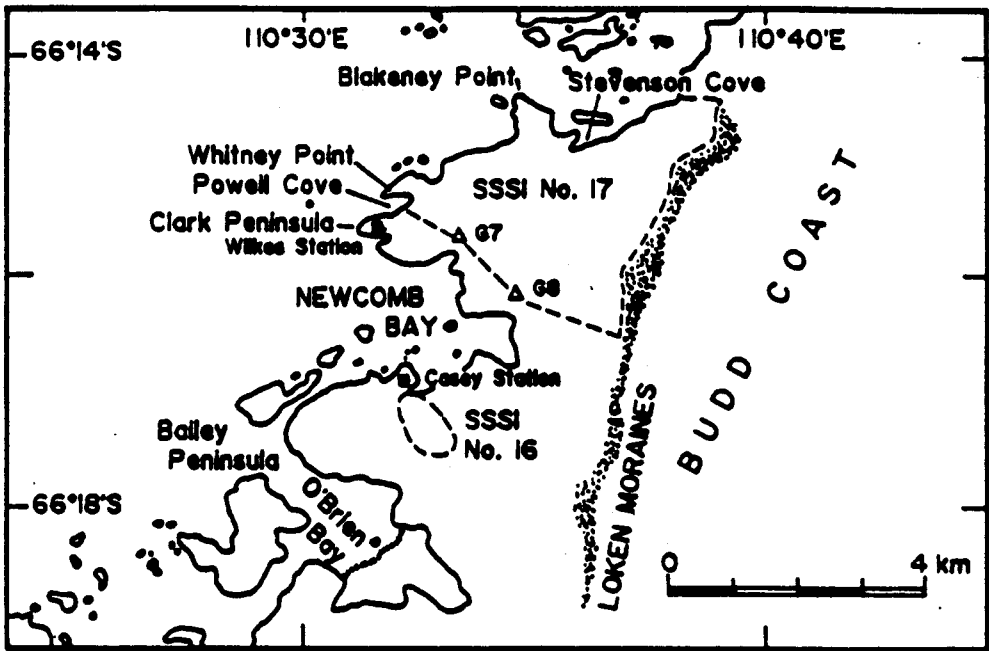
(iii)

**Management Plan for proposed Multiple-use Planning Area
in Southwest Anvers Island and vicinity
(paragraph 83 of the Final Report, Part I)**

(i)

Revised Map of Site of Special Scientific Interest

SSSI No. 17, CLARK PENINSULA, BUDD COAST, WILKES LAND



(ii)
Management Plan for proposed
SPECIALLY RESERVED AREA
NORTH SIDE OF DUFEK MASSIF ¹

1. Geographical Location

The Dufek Massif is situated at the north end of the Pensacola Mountains near the southern boundary of the Filchner Ice Shelf, centered about 82°30'S, 52°W.

2. Management Plan

(i) *Description of site*

All that area north of the mountain crest from 82°36'S, 53°33'W (Brown Nunataks) on the west to 82°26'S, 50°36'W (Cox Nunatak) on the east, to a line from Cox Nunatak, to a point on the snow surface 1 km north of the north edge of Forlidas Ridge to Brown Nunataks. The length is 48 km and the width is about 10 km. The boundaries are demarcated as shown on the attached map. SPA No. 23, Forlidas Pond and Davis Valley Ponds, is located within the site.

Topography: Elevations range from about 500 metres in the Davis Valley to about 2,000 metres in the highest peaks. The northern part of the proposed Area consists of ice, the southern part of rock, ice, and soil.

Geology and Soils: The rock outcrops in the Area consist of the lowest exposed part of the layered mafic Dufek intrusion, which is of Jurassic age. The dry valleys contain rock outcrops, small alpine glaciers, moraines and strongly developed patterned ground. Weathering of rock debris in the dry valleys has locally caused minor development of soil.

Meteorology: The Area is protected from the strong south winds flowing off the inland Antarctic ice sheet. The mean annual temperature is -30°C as measured on the ice sheet at the northern edge of the Area.

¹ see paragraph 83 of the Final Report of the XVIth ATCM, Part I

Biological Features: The only known biological features are the sparse lichens on rocks and the algae in ponds. Snow petrels were sighted over Davis Valley, and tracks of larger birds have been reported.

(ii) Rationale for designation

The Area contains outstanding geological, glaciological, geomorphological, aesthetic, scenic, and wilderness values. It is presently in a pristine condition, and it is important to preserve it in this condition while allowing multiple uses so as to permit access to scientists and others, while protecting these values. The Area is of significant geological interest, being the lowest section of the second largest layered mafic intrusion (the Dufek Intrusion) in the world. This intrusion is also exposed in the Forrestal Range and south of the SRA. The Area has a very benign climate for such a southerly location. The dry valleys preserve an unusual glacial and glacio fluvial record from Miocene to present time.

(iii) Permitted activities that would not jeopardise the values to be protected

The Dufek Massif dams the interior ice sheet allowing the existence of several spectacular dry valleys such as Davis Valley and blue ice areas in the north. Access is permitted freely to ice-covered areas by tracked or wheeled vehicles, by fixed wing aircraft and helicopters, and by pedestrians or skiers. Access to ice free valleys, including the dry valleys, is permitted by helicopters and by pedestrians. Erection and use of tents and temporary shelters is permitted provided that they are removed after their intended use.

(iv) Prohibited activities that could adversely affect the values to be protected

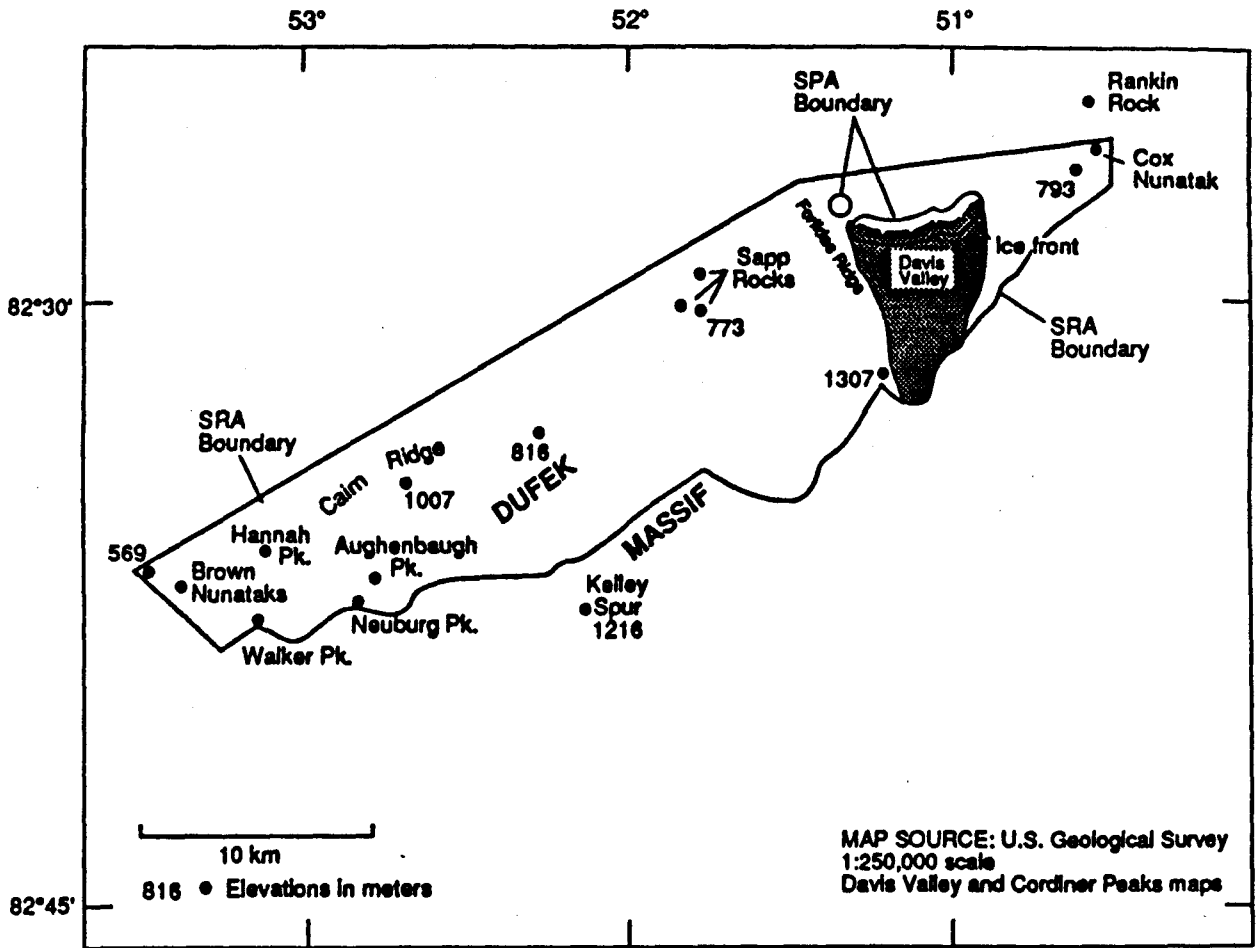
Permanent structures such as buildings and permanent stations are not to be established within the boundaries of the Area. Large shelters that may in effect become permanent fixtures when partly buried are also prohibited. (There are locations outside but adjacent to the boundaries where permanent structures could be erected without jeopardizing the values being protected.) Aircraft and vehicle fuel storage facilities within the Area are prohibited. Operation of tracked vehicles or wheeled vehicles is prohibited in the dry valley areas. Formed aircraft landing facilities (including formed helicopter pads) are prohibited in the dry valley areas. Marking of natural features is prohibited. Use of smoke

canisters should be avoided whenever possible. All wastes, including human wastes, must be removed from the Area. Entry into SPA No. 23, within the Area, is by permit only.

(v) Steps to minimise impacts of authorised access

Equipment used for scientific research or other activities should be removed when the activity is completed. Major modifications to soil and rock should be avoided within the Area. Minor modifications made during the course of scientific research or other activities should be restored to the original condition as near as possible after the activity is completed.

SRA North Side of Duffek Massif



(iii)
Management Plan of proposed
MULTIPLE-USE PLANNING AREA,
SOUTHWEST ANVERS ISLAND AND VICINITY¹

Management Plan

1. *Site Description*

The Southwest Anvers Island Multiple-use Planning Area encompasses approximately 1,535 square kilometres (Figure 1). This rectangular area lies between latitudes 64°41'30"S and 65°S and longitudes 63°40'W and 64°35'W. Palmer Station (64°46'S, 64°03'W) is located on Gamage Point on the southwest side of Anvers Island. Immediately adjacent to the station is Arthur Harbor and Biscoe Bay to the southeast, Hero Inlet and Bonaparte Point to the south, and the Marr Ice Piedmont sloping upward north and east from Gamage Point and covering Anvers Island. Torgersen Island, at the mouth of Arthur Harbor and about one kilometre from Gamage Point, is the closest island to the station. Within a 5.5 kilometre radius of Palmer Station are two exposed, prominent points on Anvers Island (Norsel Point and Bonaparte Point) and groups of islands that extend to the edge of the Bismarck Strait to the southeast (Figure 2). These islands have a diverse topography which extends into the intertidal and subtidal zones surrounding and linking the islands. Other island groups in the area are Dream Island (9 kilometres northwest), the Joubin Islands (17 kilometres west), and the Wauwermans Islands (15 kilometres southeast) near the southern end of Gerlache Strait and Neumayer Channel (Figures 1 and 2). The area includes Specially Protected Area No. 17 (Litchfield Island) and Site of Special Scientific Interest No. 20 (Biscoe Point).

Palmer Station serves as the base for scientific research and associated logistic operations conducted in the western Antarctic Peninsula and Palmer Archipelago by the United States Antarctic Program (USAP) and collaborators from a number of other Antarctic Treaty Parties. The present station was established in 1968 and consists of two main buildings and several ancillary structures, including

1 see paragraph 83 of the Final Report of the XVth ATCM, Part I

an aquarium, small boat house, workshops, and storage facilities. A modern laboratory facility is located in the station. Two large fuel tanks store the station's fuel supply. The station has approximately 44 berthing spaces and is operated year-round. It receives scientific and logistic support from ships operated or chartered by the USAP. Such ships, which visit the station approximately 15 times per year, can be accommodated at the dock located at the station. Travel within three kilometres of the station is accomplished using inflatable, small boats. Survival caches are maintained on a number of the small islands in the area.

There are three particularly important marine features in the Palmer Station Area:

- 1) Shallow shelves. These extend from Anvers Island and the adjacent island groups to depths of 90 to 140 metres.
- 2) Bismarck Strait. Located south of Palmer Station and north of the Wauwermans Islands, this strait is 360 to 550 metres deep. It is on a generally east-west axis and connects the southern end of Gerlache Strait and Neumayer Channel to a deep basin south of Palmer Station (Figure 1).
- 3) "Palmer Basin" (unofficial but common nomenclature). Palmer Basin is the only deep basin in the area and is located 22 kilometres southwest of Palmer Station. It is bordered by the Joubin Islands to the north, the Wauwermans Islands to the east, and is surrounded by shelves shallower than 165 metres. It has a maximum depth of 1280 metres. There is a 460 metre deep channel connecting the west side of Palmer Basin to the open ocean. The Bismarck Strait enters the basin from the north and connects it to Gerlache Strait.

2. Rationale for Area Designation

The SW Anvers Island Area, because of its diverse environmental features and scientific history, is and will become increasingly important in terms of long-term studies of the natural variability in Antarctic ecosystems, the impact of humans on Antarctic communities, and the possible effect of global change on the Antarctic environment and on the physiology and behaviour of its plants and

animals. A review of scientific research in the Area is presented in the background paper, "The Ecological and Scientific Basis for Multiple-Use Management of Human Activities in the Palmer Station Area".

The diverse and easily accessible assemblages of marine and terrestrial flora and fauna in the SW Anvers Island area make the area particularly valuable for science. Since the early 1960s, ecological features of this area and its accessibility have attracted scientists studying a variety of topics, including long-term monitoring of seal and bird populations, surveys of plants and animals in both the terrestrial and sub-tidal marine environments, investigations of the physiology and biochemistry of birds, seals, terrestrial invertebrates, and zooplankton, and the behaviour and ecology of planktonic marine species. These investigator-initiated studies will continue in the future. The United States Antarctic Program's commitment to continued ecosystem research in the Antarctic Peninsula has been formalised through the designation in 1990 of the area around Palmer Station as a Long Term Ecological Research (LTER) site.

Because of its accessibility and biological diversity and the presence of Palmer Station, the SW Anvers Island Area also holds a special attraction to tourists. Between 1984-85 and 1990-91, the number of tour ship visits each season at Palmer Station increased from 4 visits (340 visitors) to 12 visits (1300 visitors). This has interfered with station operations, and while recognizing the commercial and educational value of tourism, the United States has had to limit the number of tourists visiting Palmer Station.

The purposes of this management plan are to minimise mutual interference of ongoing and future scientific, logistic, tourist, and other activities in the Area, to avoid adverse cumulative environmental impacts, and to safeguard the ecological, scientific, and other values of the Area. The Plan takes into account the life histories and ecological and geographic relationships among the various species and communities in the Area.

3. Possible Impacts of Planned Human Activities

The important ecological features and/or research and other activities being carried out in the Area could be affected adversely by:

1. Ongoing and future research

- a. collection or disturbance of soil, rocks, flora and fauna in or near established study areas;
- b. over sampling and/or collection of tagged animals of known history; and
- c. interference with breeding or other vital processes.

2. Ship Operations

- a. destruction/disturbance of benthic communities from anchoring;
- b. pollution of marine areas by pumping of bilges and dumping of waste;
- c. disturbance of feeding/breeding whales, seals, and birds by ship-generated noise;
- d. accidents such as oil spills;
- e. pollution from stacks, volatile chemicals; and
- f. commercial fishing.

3. Aircraft (Helicopter) Operations

- a. disturbance of wildlife and interference with vital processes (e.g., incubation of eggs) caused by noise from overflights and landings; and
- b. destruction of vegetation and/or wildlife habitat caused by landings.

4. Small Boat Operations

- a. disturbance of nesting/breeding/feeding/resting birds and seals;
- b. marine pollution from fuel/lubricant leaks; and
- c. air pollution.

5. Station and Field Camp Operations

- a. marine and soil pollution from sewage disposal, dumping of wastes, fuel leaks, warm water effluents;
- b. air pollution from burning of fuels and combustible waste, and from evaporation of volatile liquids;

- c. disturbance of vegetation and wildlife and interference with vital processes during resupply, recreation, and normal station and field camp operations; and
 - d. destruction or disturbance of vegetation and wildlife habitat by construction of additional stations and field camps.
6. Tourists and Other Visitors
- a. interference with laboratory and field studies;
 - b. collection of souvenirs or disturbance of soil, rocks eggs, flora and fauna, particularly in and near established study areas;
 - c. interference with vital processes such as reproduction and feeding; and
 - d. discard of personal trash (littering marine and terrestrial areas) while visiting.

The Background Paper, "The Ecological and Scientific Basis for Multiple-Use Management of Human Activities in the Palmer Station Area", lists and indicates the special features of, the research that has been conducted in, and the threats to areas and sites of particular ecological or scientific value in, the SW Anvers Island MPA. To minimise the potential for cumulative environmental impact and mutual interference, the United States plans to regulate the activities of its nationals, and requests that other Antarctic Treaty Parties regulate activities of their nationals in the identified areas according to the general and site-specific provisions noted below.

4. Measures to Avoid or Minimise Interference and Cumulative Impact

4.1 Ongoing and Future Research

Research conducted within the SW Anvers Island MPA should be designed and carried out to minimise environmental impacts and impacts on ongoing and possible future research. Research in Specially Protected Areas (SPA), Sites of Special Scientific Interest (SSSI), and other sites herein described (see below) within the area must be authorised by a written permit issued by the appropriate national authority in accordance with Articles II and VIII of the Agreed Measures for the Conservation of Antarctic Fauna and Flora and any measures adopted by the Antarctic Treaty Parties.

Research on Litchfield Island (SPA Number 17) is prohibited except for compelling scientific purposes which cannot be met elsewhere, and which will not jeopardise the natural ecology of the Island. Research on Biscoe Point (SSSI Number 20) shall be limited to that specified in, and shall be carried out in accordance with, the approved management plan for the site.

Although they have not been designated as SPAs or SSSIs, the following areas and sites within the SW Anvers Island MPA have special ecological and/or scientific values--

- | | |
|------------------|------------------------|
| Breaker Island | Laggard Island |
| Cape Monaco | Limitrophe Island |
| Christine Island | Norsel Point |
| Cormorant Island | Palmer Basin |
| Dream Island | Short Cut Island |
| Elephant Rocks | Short Cut Point |
| Hermit Island | Stepping Stones Island |
| Humble Island | Torgersen Island |
| Joubin Islands | |

Research in these areas shall be carried out with particular care to avoid or minimise trampling of vegetation and disturbance of wildlife. The appropriate national authority shall maintain a record of research carried out at these sites, as well as at the aforementioned SPAs and SSSIs, and shall provide reports of these activities as described below.

Persons entering the SW Anvers Island MPA to conduct research (or other activities) are requested to contact the National Science Foundation Representative or designee on site at Palmer Station before beginning the research to notify him/her as to what, where, and when research will be done; and learn whether there is other research being conducted in the Area which may affect or be affected by the planned research (or other activities). The National Science Foundation Representative or designee shall maintain a record of such notifications and, when contacted, shall advise researchers or others working in the Area.

4.2 Disturbance and Taking of Wildlife

Contracting Parties shall do everything necessary to insure that their nationals conducting or supporting research in, or visiting, the SW Anvers Island MPA comply with the provisions of the Agreed Measures for the Conservation of Antarctic Fauna and Flora and such other measures as may be adopted by the Antarctic Treaty Parties for the conservation of Antarctic flora and fauna. Except for compelling scientific reasons, taking birds is prohibited in the following sites within the Area:

Bonaparte Point	Joubin Islands
Christine Island	Kristie Cove
Cormorant Island	Laggard Island
Diana's Island	Limitrophe Island
Dream Island	Norsel Point
Elephant Rocks	Shortcut Island
Hermit Island	Shortcut Point
Humble Island	Stepping Stones Island

In addition, the aforementioned islands shall not be visited during the critical seabird breeding season from October 1 to March 1, except in connection with scientific activities, survival cache replacement, or emergencies.

Researchers shall not take (e.g., disturb or collect) birds or mammals that have been marked and/or that are being studied by other investigators. Persons authorised to take birds and mammals shall be required to carry a copy of the permit authorizing the collections and shall present the permit, upon request, to any representative of a Contracting Party seeking to insure that collections are being conducted in accordance with relevant measures adopted by the Antarctic Treaty Parties. Any possible violations of this provision shall be reported to the appropriate national contact point, who in turn should report to the next Antarctic Treaty Consultative Meeting.

4.3 Ship Operations (General)

Ship operations in the vicinity of Palmer Station can be hazardous and lead to accidents which can result in substantial environmental damage, and possibly to the loss of human life. Also, routine operations may disturb birds and mammals

feeding or breeding in and migrating through the area, and introduce contaminants (e.g., fuel and lubricating fluids) which may affect phytoplankton, zooplankton, fish, birds, and mammals, and compromise the scientific value of the area. In addition, anchoring of vessels may damage or destroy benthic communities, including sites which have been established to study and monitor such communities.

To minimise the risk of accidents and environmental damage from routine operations, ships operating in or transiting through the SW Anvers Island MPA shall:

- a. exercise maximum caution in light of incomplete charting and incomplete knowledge of hazards to navigation;
- b. avoid transiting or anchoring in areas where hazards to navigation are known or thought to be present; and
- c. refrain from pumping of bilges, discharging of sewage, and dumping of waste within the MPA.

4.4 Aircraft (Helicopter) Operations

Helicopter and other aircraft shall be operated to avoid or minimise, to the maximum extent practicable consistent with safety considerations, impacts on flora, fauna, and research and related support activities in the SW Anvers Island MPA. In particular:

- a. except in emergencies, aircraft transporting scientists and visitors to Palmer Station shall notify the National Science Foundation Representative or designee as far in advance as possible of expected arrival time, and shall land at preferred landing sites; and
- b. except in emergencies or in connection with authorised research, no aircraft shall land in or fly at altitudes of less than 600 metres over or around land areas when and where birds or seals are or may be present.

There are no maintained landing sites for fixed wing aircraft.

4.5 Small Boat Operations

Small boat operations shall be carried out so as to avoid or minimise, to the maximum extent practicable consistent with safety considerations, pollution of the marine environment and disturbance of birds and mammals. In particular--

- a. fuel tanks and motors shall be maintained and operated to minimise fuel and lubricant leaks;
- b. all waste products (trash) shall be returned to the parent ship or station for appropriate disposal; and
- c. except for emergencies, or in connection with research, monitoring or survival cache replacement consistent with this management plan, small boats shall avoid and not be operated from October 1 to March 1 within 100 metres of

Christine Island	Kristie Cove
Cormorant Island	Laggard Island
Diana's Island	Limitrophe Island
Dream Island	Litchfield Island
Elephant Rocks	Short Cut Island
Hermit Island	Short Cut Point
Humble Island	Stepping Stones Island

4.6 Station and Field Camp Operations

Station and field camp operations shall be planned and carried out so as to avoid or minimise impact to the environment, and shall comply with the Code of Conduct and such other waste disposal, marine pollution, and other environmental impact abatement measures as may be adopted by the Antarctic Treaty Parties.

4.7 Tourists and Other Visitors

Persons or tour companies wishing to make arrangements to visit Palmer Station shall contact the U.S. National Science Foundation's Division of Polar Programs at least six months in advance of the planned visit to determine whether, when, and under what circumstances the Station may be able to accommodate the requested visit.

In addition, the national authority in the country of origin shall insure that tourists and other visitors are fully aware of, and comply with, the relevant provisions of this Management Plan and other relevant measures that have been adopted by the Antarctic Treaty Parties. In particular, private expeditions and tour operators, their staff, and tourists shall be informed of and, except in emergencies, shall be required to comply with provisions of the Antarctic Treaty prohibiting:

- a. the killing, wounding, capturing, or molesting of any native mammal or bird;
- b. introduction of non-indigenous species;
- c. dumping of waste; and
- d. entry into designated protected areas.

To avoid impacting sensitive environments and ongoing research, members of private and tourist expeditions shall not be permitted to go ashore at the following sites--

Cape Monaco	Joubin Islands
Christine Island	Laggard Island
Cormorant Island	Limitrophe Island
Dream Island	Norsel Point
Elephant Rocks	Short Cut Island
Hermit Island	Short Cut Point
Humble Island	Stepping Stones Island

Members of private and tourist expeditions shall be directed to Torgersen Island. This island, with an Adélie penguin rookery of approximately 7,500 pairs, has been the site of both scientific research and tourist visits during the past decade. The size and topography of the island allow the opportunity to observe wildlife, while minimizing disturbance and habitat degradation/destruction. Prior to visiting the island, the expedition leader shall contact the National Science Foundation Representative or designee at Palmer Station to ensure that interference with ongoing scientific activities is avoided.

Tourists and other visitors also shall be made aware that walking on vegetation can cause irreparable damage and that discarded litter (e.g., polystyrene cups and cigarettes) may be eaten by and harm wildlife. Walking on vegetation shall

be avoided to the maximum extent possible, and the discarding of trash (littering) shall be prohibited.

5. Reporting

Parties planning to conduct, support, or authorise research or other activities in the SW Anvers Island MPA shall advise other interested Contracting Parties as far in advance as possible of activities it plans to conduct, support, or authorise in the Area during the forthcoming austral field season, and shall provide to the Parties copies of all permits issued to authorise: (i) the taking of native mammals or birds; and/or (ii) the conduct of research in designated protected areas.

Parties conducting, supporting, or issuing permits to authorise research or other activities in the SW Anvers Island MPA shall maintain a record of such activities, and in the annual exchange of information under the Antarctic Treaty shall provide summary descriptions of the activities conducted in the MPA in the preceding year. In addition, at the conclusion of each summer field season, Parties shall notify other Parties of (a) any activities carried out by its nationals or those of another Contracting Party in contravention of the provisions of this management plan or other relevant authorities; and (b) steps taken to enforce the provisions of this Management Plan.

6. Review

The Management Plan for the SW Anvers Island MPA will be reviewed periodically and updated as required. Proposed revisions will be provided to the Scientific Committee on Antarctic Research (SCAR) and other relevant components of the Antarctic Treaty system for comment, and shall be submitted to the Antarctic Treaty Consultative Parties for adoption in accordance with established practice.

MPA Anvers Island and vicinity

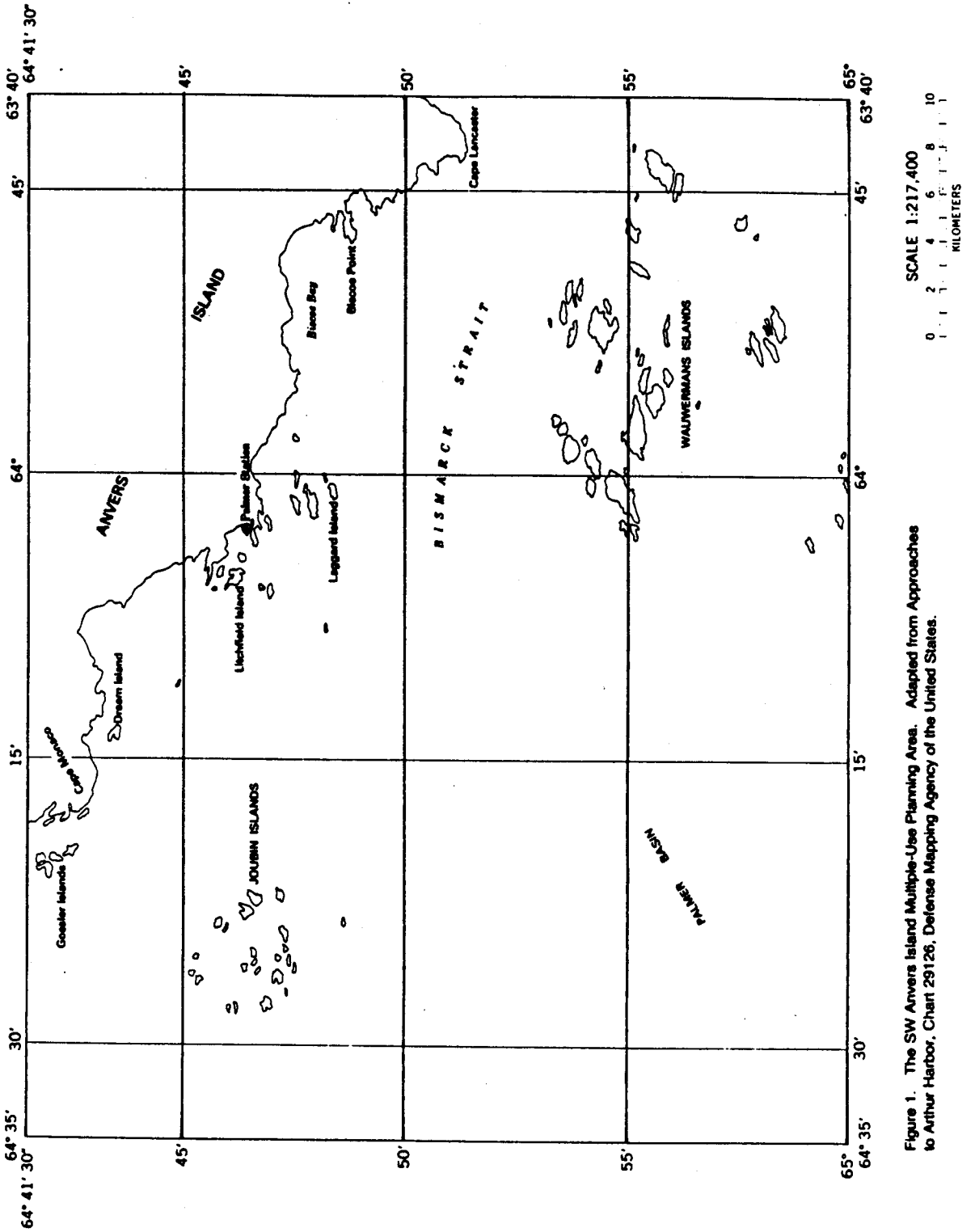


Figure 1. The SW Anvers Island Multiple-Use Planning Area. Adapted from Approaches to Arthur Harbor, Chart 29126, Defense Mapping Agency of the United States.

MPA Anvers Island and vicinity

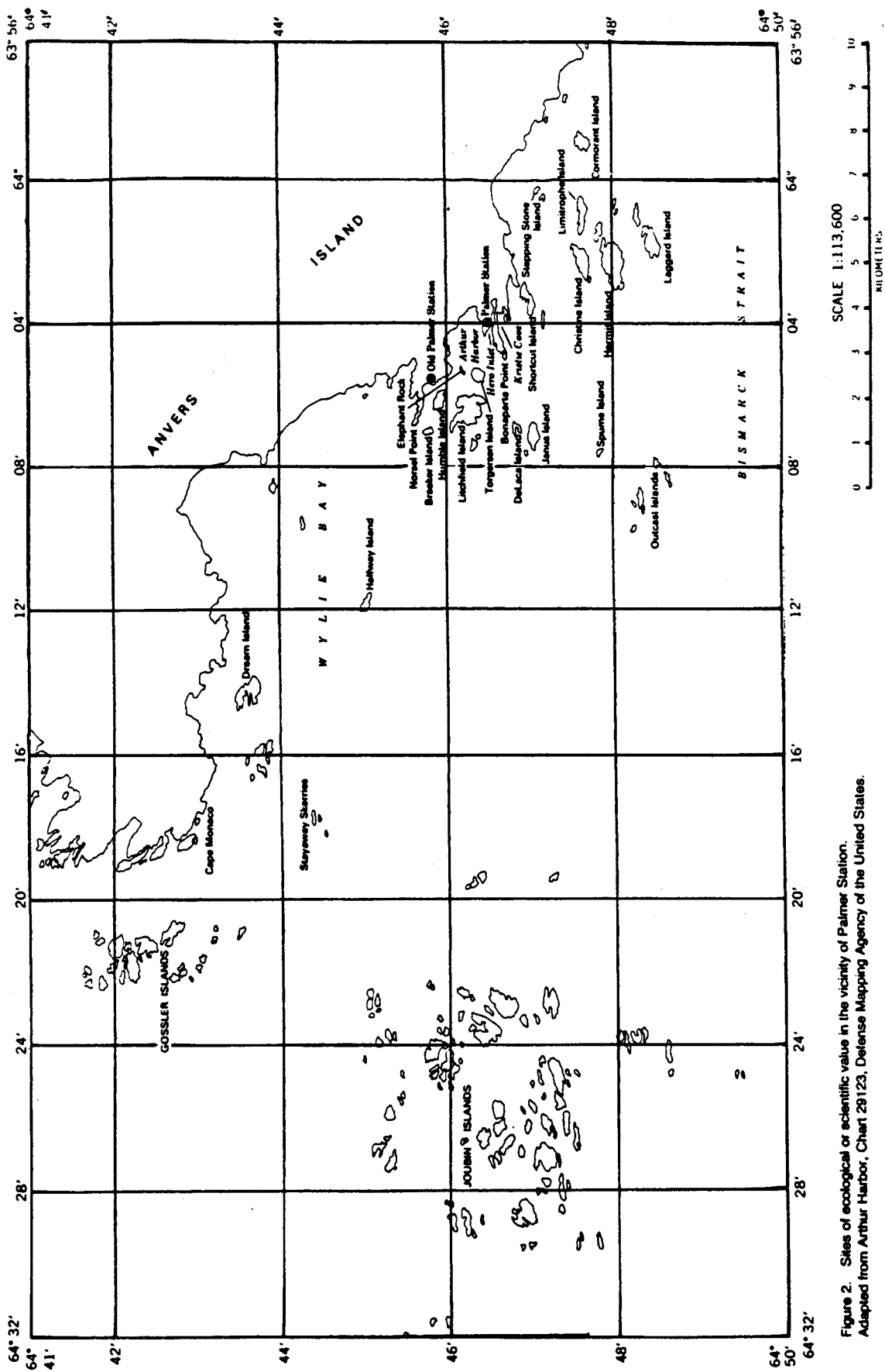


Figure 2. Sites of ecological or scientific value in the vicinity of Palmer Station. Adapted from Arthur Harbor, Chart 29123, Defense Mapping Agency of the United States.

ANNEX G

**PRELIMINARY AGENDA OF THE
XVIIth ANTARCTIC TREATY CONSULTATIVE MEETING
(PARAGRAPH 141 A OF THE FINAL REPORT, PART I)**

**PROPOSAL FOR A PROVISIONAL AGENDA
OF THE XVIIth ANTARCTIC TREATY CONSULTATIVE MEETING**

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
 - a) under Recommendation XIII - 2:
 - i) the Chairman of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
 - ii) the Head of the Delegation of the United Kingdom in his capacity as representative of the Depository Government of the Convention for the Conservation of Antarctic Seals (CCAS)
 - iii) the President of the Scientific Committee on Antarctic Research (SCAR)
 - iv) the Head of the Delegation of the United States of America in his capacity as representative of the Depository Government of the Antarctic Treaty
 - v) the Convenor of the informal group of Treaty Parties in the United Nations
 - vi) the Council of Managers of National Antarctic Programs (COMNAP)
 - b) in relation to Article III (2) of the Antarctic Treaty
6. Protocol on Environmental Protection to the Antarctic Treaty
 - a) Implementation
 - b) Committee for Environmental Protection
 - c) Liability Annex
7. Operation of the Antarctic Treaty system:
 - a) Organisational aspects

- b) Public availability of documents
 - c) Examination of recommendations
 - d) Exchange of information
 - e) Amendment to ATCM rules of procedure
8. Inspections under the Antarctic Treaty
 9. Environmental monitoring
 10. Implementation of environmental impact assessment procedures
 11. The Antarctic Protected Area system
 12. International Antarctic scientific and logistic co-operation
 13. Tourism and non-governmental activities in the Antarctic Treaty area
 14. Antarctic meteorology and telecommunications
 15. Marine hydrometeorological services to navigation in the Southern Ocean
 16. Co-operation in hydrographic surveying and charting of Antarctic waters
 17. Air safety in Antarctica
 18. Preparation of the XVIIIth Consultative Meeting
 - a) Date and place of the XVIIIth Consultative Meeting
 - b) Invitations of international and non-governmental organisations
 - c) Preparation of the Agenda of the XVIIIth Consultative Meeting
 19. Any other business
 20. Adoption of the Report
 21. Closing of the Meeting

ANNEX H

TEXT OF MESSAGE TO ANTARCTIC STATIONS

**MESSAGE FROM THE XVIth CONSULTATIVE
MEETING TO STATIONS IN ANTARCTICA**

Representatives of the Parties to the Antarctic Treaty have just completed two weeks of discussions at the Sixteenth Consultative Meeting, held in Bonn and hosted by the Government of Germany. This was the first time that the Consultative Meeting took place in Germany since the Antarctic Treaty came into force in 1961.

Since the last Consultative Meeting, held in Paris in October 1989, there have been considerable developments in the Antarctic Treaty system which will have important effects on what is done, and how it is done, in Antarctica.

At four meetings held in Vina del Mar, Chile and Madrid between November 1990 and October 1991, the Consultative Parties negotiated a Protocol on Environmental Protection to the Antarctic Treaty. The Madrid Protocol to the Washington Treaty, resulting from these negotiations and adopted in Madrid on 4 October 1991, in the 30th anniversary year of the entry into force of the Antarctic Treaty, marks an important turning point.

The Protocol designates Antarctica as a natural reserve devoted to peace and science. It provides for the establishment of a Committee for Environmental Protection which will provide advice on environmental matters to Antarctic Treaty Consultative Meetings. The Protocol has four Annexes covering waste disposal and management, conservation of wildlife, prevention of marine pollution and the application of environmental impact assessment procedures to activities which are planned in Antarctica. At this Meeting in Bonn a fifth Annex on area protection and management was adopted.

The agenda of consultations at this Meeting has included matters as diverse as the regulation of tourism and the possible future establishment of a Secretariat to the Antarctic Treaty. Running through all these consultations has been a clear recognition of the great importance of the part your valuable work plays in the study of phenomena of global significance.

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 co-operation that has been the hallmark of the Antarctic Treaty system.

As the Antarctic winter draws to a close, all delegations participating in the Sixteenth 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 I

NATIONAL CONTACT POINTS

NATIONAL CONTACT POINTS

(For purposes described in Recommendation XIII-1)

I. Consultative Parties

ARGENTINA

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ministerio de Relaciones Exteriores y Culto
Dirección de Malvinas, Atlántico Sur y Antártida
Reconquista 1088
Buenos Aires - Argentina

Telephone: 311-1801

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Instituto Antártico Argentino
Cerrito 1088
(1010) Buenos Aires - Argentina

Telefax: 00541-8122039

AUSTRALIA

For purposes set out in paragraphs 3 and 5 of Recommendation XIII-1:

Director
Australian Antarctic Division
Channel Highway
KINGSTON, Tasmania 7050
Australia

BELGIUM

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Services des Affaires Générales (P17)
Direction générale de la Politique
Ministère des Affaires étrangères, du Commerce
extérieur et de la Coopération au Développement
2, rue Quatre Bras
1000 Bruxelles
Belgium

Telephone: 02/516.81.11
Telex: 21376

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Programmation de la Politique scientifique
Services du Premier Ministre
rue de la Science, 8
1040 Bruxelles
Belgium

Telephone: 02/230.41.00
Telex: 24501

BRAZIL

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Division of Marine, Antarctic and Outer Space Affairs (DMAE)
Ministério das Relações Exteriores
Sala 305 - Anexo I
Esplanada dos Ministérios
70.170 Brasília, DF
Brazil

Telephone: (061) 211.62.82
(061) 211.63.67
Telex: 611311 MNRE BR

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Secretariat for the Interministerial Commission for
Marine Resources (SECIRM)
Ministério da Marinha
Esplanada dos Ministérios
70.055 Brasília, DF
Brazil

Telephone: (061) 226-8647
Telex 611392 NMAR BR

CHILE

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Director de Política Especial
Ministerio de Relaciones Exteriores
Morande 442 Piso 2°
Santiago

Telephone: 6980301
6982501

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Instituto Antártico Chileno (INACH)
Address: Luis Thayer Ojeda N° 814
Providencia
Santiago
Chile

Telephone: 231.01.05 (Director)
231.81.77 (Vice-Director)
Telex: 346261 INACH CK
Telefax: 56-02-232.04.40

CHINA, PEOPLE'S REPUBLIC OF

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Mr Guo Kun
Director,
Chinese Antarctic Administration
No. 1 Fuxingmenwai Ave
Beijing, China 100860

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Prof. Dong Zhaoqian
Director,
Polar Research Institute of China
451 Shang Chuan Rd,
Pudong, Shanghai, China 200129

ECUADOR

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ministerio de Relaciones Exteriores
Diez de Agosto y Carrion
QUITO, ECUADOR

Telefax: 00-593-2-504933
Telex: 03082-2142 MIRREE-ED

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Programa Antártico Ecuatoriano
P.O.Box 5940
GUAYAQUIL - ECUADOR

Telefax: 00-593-4-442151
Telex: 03084-3672 ED

FINLAND

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ministry of Foreign Affairs
Political Department
P.O.Box 176
SF-00161 Helsinki - Finland

Telephone: 358-0-134151
Telefax: 358-0-629840
Telex: 1000306

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Ministry of Trade and Industry
P.O.Box 230
SF-00171 Helsinki - Finland

Telephone: 358-0-1603700
Telefax: 358-0-1603705

FRANCE

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Territoire des Terres Australes et Antarctiques Françaises (T.A.A.F.)
34, Rue des Renaudes
75017 Paris

Telephone: 47.66.93.23

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Ministère des Affaires Etrangères
Direction des Affaires Juridiques
37 Quai d'Orsay
75007 Paris

Telephone: 47.53.53.53 - ext. 4386/5331

GERMANY

Alfred-Wegener-Institut für Polar- und Meeresforschung (AWI)
Columbusstraße
Postfach 12 01 61
2850 Bremerhaven
Federal Republic of Germany

Telephone: 0471/4831-0
Telex: 23 86 95 polar d
Telefax: 0471/4831-149

INDIA

For purposes set out in paragraphs 3 and 5 of Recommendation XIII-1:

Professor Vinod K. Gaur
Secretary to the Government of India
Department of Ocean Development
Lodhi Road,
New Delhi, India

ITALY

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ministerio degli Affari Esteri
Direzione Generale Relazioni Culturali (DGRC) - UFF VLI
Cons. Gerardo Carante
Piazzale Farnesina 1
00100 Roma, Italia

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

ENEA - Progetto Antartide
Via Anguillarese 301
Osteria Nuova
Roma, Italia
Ing. M. Zucchelli

Telephone: 0039/6/30484939
Telefax: 0039/6/30484893

JAPAN

Scientific Affairs Division
United Nations Bureau
Ministry of Foreign Affairs
2-2-1, KASUMIGASEKI, Chiyoda-ku,
TOKYO, JAPAN
Director S. IWATANI

Telephone: 03.580.33.11
Telefax: 03.591.49.14

KOREA, REPUBLIC OF

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Director
International Legal Affairs Division
Ministry of Foreign Affairs
7 Sejong-ro, Chongro-ku
Seoul 110, Korea

Telephone: (02) 720-4045, 737-3150
Telefax: (02) 720-2686

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Head, Polar Research Center
Korea Ocean Research and Development Institute
Amsan P.O.Box 29, Seoul 425-600, Korea

Telephone: (02) 863-4770
Telefax: (0345) 82-6698
Telex: KORDI K27675

NETHERLANDS

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ministry of Foreign Affairs
Council of Europe and
Scientific Co-operation Department
2500 EB The Hague, The Netherlands

Telephone: 31-70-3484971
Telefax: 31-70-3484412

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Stichting Onderzoek der Zee
Laan van Nieuw-Oost-Indie 131
2593 BM Den Haag, The Netherlands

Telephone: 31-70-3440780
Telefax: 31-70-3832173

NEW ZEALAND

The Ministry of External Relations and Trade
Private Bag
Wellington I
New Zealand

Telephone: (04) 47 28 877
Cable: NZ 3441 external
Telefax: (04) 47 39 522

NORWAY

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Royal Ministry of Foreign Affairs
Polar Section
Post Office Box 8114 Dep
0032 Oslo 1, Norway

Telephone: (47) (2) 34 33 61
Telex: 71 004
Telefax: (47) (2) 34 95 80/81

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Norwegian Polar Research Institute
Post Office Box 158
1330 Oslo Lufthavn, Norway

Telephone: (47) (2) 12 36 50
Telex: 74 745
Telefax: (47) (2) 12 36 50
Telefax: (47) (2) 12 38 54
(outside office hours)

PERU

Comisión Nacional de Asuntos Antárticos
Ministerio de Relaciones Exteriores
Palacio Torre Tagle (Ucayali No 361)
LIMA (1), PERU

POLAND

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Ambassador Janusz Mickiewicz
Director of the Legal and Treaty Department
Ministry of Foreign Affairs
Al. 1 Armii WP 23
Warszawa, Poland

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Professor Krzysztof Birkenmajer
Chairman, Committee on Polar Research
Polish Academy of Sciences
Palac Kultury i Nauki 2110
00-901 Warszawa, Poland

SOUTH AFRICA

- For purposes set out in paragraphs 3 and 5 of Recommendation XIII-1:

Director-General: Department of Environment Affairs
Subdirector: Antarctic and Islands
PRIVATE BAG X447
Pretoria, Republic of South Africa

Telephone: 012-3103560
Telefax: 012-3222682

SPAIN

Comisión Nacional del Programa Antártico Español
Dirección General de Cooperación Técnica Internacional
Ministerio de Asuntos Exteriores
c/José Abascal - 41
28003 - Madrid (ESPAÑA)

Telephone: (91) 441.93.33 or 441.90.44
Telefax: (91) 442.76.57
Telex: 42237

SWEDEN

For purposes set out in paragraphs 3 and 5 of Recommendation XIII-1:

Prof. Anders Karlquist
Swedish Polar Research Secretariat
Box 50005
S-10405 Stockholm
Sweden

UNION OF SOVIET SOCIALIST REPUBLICS

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

USSR Ministry of Foreign Affairs
International Law Department
Moscow, Smolenskaya-Sennaya Place 32/34

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

USSR Arctic and Antarctic Research Institute
St.Petersburg
Beringa St. 38

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

1. For purposes set out in paragraph 3 of Recommendation XIII-1 and other matters related to the operation of the Antarctic Treaty system:

Head of Polar Regions Section,
South Atlantic and Antarctic Department,
Foreign and Commonwealth Office,
London, SW1A 2AH, UK.

2. For purposes set out in paragraph 5 (a) and (b) of Recommendation XIII-1 insofar as they relate to British scientific research in the Antarctic:

Director,
British Antarctic Survey,
High Cross,
Madingley Road
Cambridge CB3 0ET, UK.

3. For purposes set out in paragraph 5 (b) of Recommendation XIII-1 excepting those related to British scientific research in the Antarctic:

The Librarian,
Scott Polar Research Institute,
Lensfield Road,
Cambridge CB2 1ER, UK.

UNITED STATES OF AMERICA

Director,
Office of Oceans Affairs
OES/OA, Room 5801
Department of State Washington D.C. 20520 78/8

Telephone: (202) 647 32 62
Telefax: (202) 647 11 06

URUGUAY

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Dirección de Asuntos Limitrofes, Maritimos y
Fronterizos
Ministerio de Relaciones Exteriores
Colonia 1206 - 2o. P.
11000 Montevideo - Uruguay

Telephones: (02) 92 04 00
(02) 92 10 10 (Ext.35)
Telefax: (02) 92 13 07
Telex: DIPCIA UY 22074 or 26682

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Instituto Antártico Uruguayo
Buenos Aires 350
11000 Montevideo - Uruguay

Telephones: (02) 95 42 05
(02) 95 69 24
(02) 95 54 48
Telex: IAU UY 23125

II. NON-CONSULTATIVE PARTIES

BULGARIA

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Treaties and Legal Department
Ministry of Foreign Affairs
2, Al. Zhendov str.
Sofia 1113

Telephone: 71 44 843
Telex: 22 529; 22 530

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Commission on Antarctic Research
Sofia University "St. Climent Ohridsky"
15, Ruski boul.
Sofia 1000

Telephone: 85 81 ext. 257
Telex: 23 296 SUKO R BG

CANADA

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

External Affairs and International Trade Canada
Legal Operations Division (JLO)
125 Sussex Drive
Ottawa, Ontario K1A 0G2

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Indian and Northern Affairs Canada
Circumpolar and Scientific Affairs
Directorate
Les Terrasses de la Chaudière
10 Wellington Street
Hull, Quebec K1A 0H4

CZECHOSLOVAKIA

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Czechoslovak Antarctic Programme
Obbrok 17
471 41 Dubá
Czechoslovakia

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Czechoslovak Academy of Science
Foreign Relations Department
Národní 3
111 42 Prague 1

Telephone: 235 80 65
Telefax: 42-/0/2 - 265 671

DENMARK

Head of Section
Mr JOHN KIAERULF
Secretariat for Law of the Sea Questions
Danish Ministry of Foreign Affairs
Asiatisk Plads 2
DK 1448 Copenhagen K

GREECE

1. For purposes set out in paragraph 3 of Recommendation XIII-1:

Dr Emmanuel Gounaris
President of the
Greek National Committee for the Polar Zones,
Ministry of Foreign Affairs
A 7 Direction, Academias 3
Athens 10671, Greece

Telephone: 3612325
Telefax: 3609716
Telex: 216593

2. For purposes set out in paragraph 5 of Recommendation XIII-1:

Dr Christos Anagnostou
National Center for Marine Research
Agios Kosmas
Athens, Greece

Telephone: 9738591

ANNEX J

LIST OF PARTICIPANTS

I. Consultative Parties

Argentina

Representative

**Mr Juan Eduardo FLEMING,
Minister Plenipotentiary
Argentine Embassy
Bonn**

Delegates

**Ms Mónica PERLO REVIRIEGO,
Counsellor
Argentine Embassy
Bonn**

**Mr Jorge A. MASTROPIETRO,
Secretary of Embassy
Division for Malvinas, South Atlantic and the Antarctic**

**General(R) Jorge E. LEAL,
National Director of Antarctica**

**Dr Carlos A. RINALDI,
Director
Argentine Antarctic Institute**

**Dr Angel Ernesto MOLINARI,
National Directorate for the Antarctic**

Australia

Representative

**Mr Hugh WYNDHAM,
Assistant Secretary, Environment and Antarctic Branch
Department of Foreign Affairs and Trade**

Delegates

**Mr Rex MONCUR,
Director
Australian Antarctic Division**

**Mr Andrew JACKSON,
Policy Manager
Australian Antarctic Division**

**Ms Jean PAGE,
Antarctic Section
Department of Foreign Affairs and Trade**

**Ms Lyn GOLDSWORTHY,
Representative
Australian Non-Governmental
Environmental Organisations**

Ms Poppy MACLEAN,
Second Secretary
Australian Embassy
Bonn

Belgium

Representative

Mr Philippe GAUTIER,
Conseiller-adjoint, service affaires générales
Ministère des Affaires étrangères

Delegates

Mr Paul VANHEESSEN,
First Secretary
Embassy of Belgium
Bonn

Mr Christian MEERSCHMANN,
Attaché
Embassy of Belgium
Bonn

Brazil

Representative

Mr Henrique R. VALLE,
Ambassador, Head of Department for Environment
Ministry of External Relations

Delegates

Mr Antônio José GUERREIRO,
Counsellor
Ministry of External Relations at Embassy of Brasil
Paris

Captain Antônio José TEIXEIRA,
Under-Secretary
Interministerial Commission for the Resources of the Sea

Captain Daniel Cesar MONTEIRO,
Undersecretary for the Brazilian Antarctic Programme
Ministry of Marine

Prof. Antônio Carlos da ROCHA CAMPOS,
Co-ordinator, Brazilian Antarctic Programme
University of Sao Paulo

Mr Antonio LUZ,
Second Secretary
Brazilian Embassy
Bonn

Mr Pedro LEITE- PINTO,
Advisor
Brazilian Embassy
Bonn

Chile

Representative

Mr Oscar PINOCHET DE LA BARRA,
Ambassador
Director de la Academia Diplomatica de Chile

Delegates

Mr Jorge BERGUÑO,
Ambassador, Director for Special Political Affairs
Ministry of Foreign Affairs

Ms Maria Luisa CARVALLO,
Legal Advisor
Chilean Antarctic Institute

Prof. José VALENCIA,
Advisor
Chilean Antarctic Institute

Ms María Teresa INFANTE,
Advisor
Director, Institute for International Studies
University of Chile

Mr Armin ANDEREYA,
Second Secretary
Embassy of Chile
Bonn

Mr Carlos de TORO,
Advisor
Ministry of National Defense

Ms María Eugenia ZAÑARTU,
Advisor
Committee for the Preservation of Flora and Fauna
(NGO)

China, People's Republic of

Representative

Mr SUN LIN,
Director, Treaty and Law Department
Ministry of Foreign Affairs

Delegates

Mr GUO KUN,
Director, National Antarctic Office
Research Administration

Mr DONG ZHAOQIAN,
Director
Polar Institute
Shanghai

Ms SONG LI,
Head of Division, Treaty and Law Department
Ministry of Foreign Affairs

Mr GAO FENG,
Deputy Head of Division, Treaty and Law Department
Ministry of Foreign Affairs

Ecuador

Representative

Mr Miguel ESPINOSA,
Ambassador
Embassy of Ecuador
Bonn

Delegates

Mr César MONTAÑO,
Second Secretary
Embassy of Ecuador
Bonn

Mr Diego STACEY,
Counsellor
Embassy of Ecuador
Bonn

Finland

Representative

Mr Arto TANNER,
Ambassador
Ministry of Foreign Affairs

Delegates

Ms Riitta MANSUKOSKI,
Scientist
Ministry of Trade and Industry

Ms Marit HUHTA,
Counsellor
Ministry of Foreign Affairs

Mr Ismo KOLEHMAINEN,
Second Secretary
Finnish Embassy
Bonn

Ms Outi HOLOPAINEN,
Attaché
Finnish Embassy
Bonn

France

Representative

Mr Georges DUQUIN,
Sous-Directeur, Direction des Affaires Juridiques
Ministère des Affaires Etrangères

Delegates

Mr Bernard de GOUTTES,
Administrateur supérieur des terres australes et
antarctiques françaises

Mr Charley CAUSERET,
Conseiller, Direction des Affaires Juridiques
Ministère des Affaires Etrangères

Mr Alain MEGRET,
Directeur adjoint de la Protection de la Nature
Ministère de l'Environnement

Mr Michel ENGLER,
Conseiller spécial
Adm. supérieur des terres australes et ant. françaises

Ms Véronique SARANO,
Advisor
Fondation Cousteau

Germany

Representative

Mr Dietrich GRANOW,
Ambassador, Head of Delegation
Federal Foreign Office

Delegates

Federal Foreign Office

Dr Antonius EITEL,
Director
Federal Foreign Office

Dr Wolfgang HOFFMANN,
Minister Counsellor
Federal Foreign Office

Dr Johannes WESTERHOFF,
Counsellor
Federal Foreign Office

Mr Ralf BRETH,
Counsellor
Federal Foreign Office

Dr Michael-Joh. FERNAU,
First Secretary
Federal Foreign Office

Mr Hans-Christian Frhr.v.REIBNITZ,
Second Secretary
Federal Foreign Office

Mr Jürgen BORSCH,
Second Secretary
Federal Foreign Office

Mr Michael FABRI-WEILAND,
Third Secretary
Federal Foreign Office

Mr Christian BRAUN,
Assistant
Federal Foreign Office

Federal Ministry of Justice

Mrs Irene MAIER,
Director
Federal Ministry of Justice

Dr Jürgen JEKEWITZ,
Ministerial Counsellor
Federal Ministry of Justice

Mr Karl-Heinz OEHLER,
Counsellor
Federal Ministry of Justice

Mr Hans-Jörg BEHRENS,
Third Secretary
Federal Ministry of Justice

Federal Ministry of Finance

Mr Jürgen WENDEROTH,
Second Secretary
Federal Ministry of Finance

Federal Ministry of Economics

Mr Joachim KOCH,
Ministerial Counsellor
Federal Ministry of Economics

Mr Dieter STIEPEL,
Ministerial Counsellor
Federal Ministry of Economics

Mr Dieter WURDAK,
Second Secretary
Federal Ministry of Economics

Federal Ministry of Food, Agriculture and Forestry

Federal Ministry of Transport
Dr Ortwin GOTTSMANN,
Ministerial Counsellor
Federal Ministry of Food, Agriculture and Forestry

Federal Ministry of Transport

Mr Henning MENZEL,
Counsellor
Federal Ministry of Transport

**Federal Ministry for Environment, Nature Conservation
and Nuclear Safety**

Mr Dietrich KUPFER,
Ministerial Counsellor
Fed. Ministry for Environment, Nature Cons. and Nuclear
Safety

Ms Jutta RÜHL,
Counsellor
Fed. Ministry for Environment, Nature Cons. and Nuclear
Safety

Dr Martina PALM-RISSE,
Second Secretary
Fed. Ministry for Environment, Nature Cons. and Nuclear
Safety

Federal Ministry of Research and Technology

Dr Jörg-Hermann GÖSELE,
Ministerial Counsellor
Federal Ministry of Research and Technology

Dr Klaus-Günther JACOBS,
Second Secretary
Federal Ministry of Research and Technology

Mr Gerhard NÖSSER,
Second Secretary
Federal Ministry of Research and Technology

Advisors

Prof. Rüdiger WOLFRUM,
Director
Institute for International Law, University of Kiel

Dr Heinz KOHNEN,
Advisor
Alfred-Wegener-Institute for Polar and Marine Research

Dr Joachim PLÖTZ,
Advisor
Alfred-Wegener-Institute for Polar and Marine Research

Dr Franz TESSENSOHN,
Head of Polar Section
Federal Geophysical and Resources Agency

Prof. Niels-Peter RÜHL,
Advisor
Federal Maritime and Hydrographic Agency

Dr Gerhard KOSLOWSKI,
Counsellor
Federal Maritime and Hydrographic Agency

Dr Jörn SIEVERS,
Scientific Director
IFAG

Ms Jutta NACHTIGÄLLER,
Advisor
German Overseas Institute

Mr Hans Werner SCHENKE,
Advisor
for Hydrography and Nautical Charting

India

Representative

Mr V.K. GAUR,
Secretary to the Government

Delegates

Mr Deepak MISRA,
First Secretary
Embassy of India
Bonn

Mr Shyam Datt SHARMA,
Attaché
Embassy of India
Bonn

Italy

Representative

Mr Alessandro VATTANI,
Minister Plenipotentiary
Ministry of Foreign Affairs

Alternate

Mr Gerardo CARANTE,
Counsellor, Deputy Head of Delegation
Ministry of Foreign Affairs

Delegates

Prof. Pier Giuseppe BOZZETTI,
Expert
Ministry of Foreign Affairs, Cultural Division

Dr Marcello MANZONI,
Scientist
National Research Council

Prof. Elena SCISO,
Legal Expert
Ministry of Foreign Affairs, Cultural Division

Ing. Mario ZUCHELLI,
Director of the Antarctic Project
E.N.E.A.

Prof. Wolfgang ALLES,
Attaché (Science)
Italian Embassy
Bonn

Mr Roberto AZZOLINI,
Advisor

Japan

Representative

Mr Masaki KONISHI,
Deputy Director-General
United Nations Affairs Bureau, MOFA

Delegates

Mr Takao HOSHIAI,
Director General
National Institute for Polar Research (NIPR)

Mr Tateo MATSUMURA,
Administrative Supervisor for Antarctic Research
Ministry of Education

Mr Mitsunori NAMBA,
Assistant Director, Scientific Affairs Div.
United Nations Bureau, MOFA

Mr Masayuki KOMATSU,
Deputy Director, Overseas Fisheries Division
Fisheries Agency, Min. of Agriculture, Forestry and
Fisheries

Mr Toshihiko KASAI,
Deputy Director, Ocean Development Division
Ministry of International Trade and Industry

Mr Shigeru TSUMORI,
Minister
Japanese Embassy
Bonn

Mr Masaaki OKUHARA,
First Secretary
Japanese Embassy
Bonn

Mr Takashi MURATA,
First Secretary
Embassy of Japan
Bonn

Mr Toshiro IJIMA,
Second Secretary
Japanese Embassy
Bonn

Korea, Republic of

Representative

Mr Hyun-Won AHN,
Minister
Embassy of the Republic of Korea
Bonn

Delegates

Mr Tae Hyun CHOI,
Assistant Director, International Law Affairs Division
Ministry of Foreign Affairs

Mr Sae-Young KWON,
Second Secretary
Embassy of the Republic of Korea
Bonn

Dr Seo Hang LEE,
Professor
Institute of Foreign Affairs and National Security

Dr Byung Kwon PARK,
President
Korean Ocean Research and Development Institute

Netherlands

Representative

Mr Pieter J.M. VERBEEK,
Deputy Director, Scientific Co-operation Department
Ministry of Foreign Affairs

Delegates

Mr F. von der ASSEN,
Head of Division of Nature, Environment and Fauna
Ministry of Agriculture, Nature Management and
Fisheries

Mr Pieter BERGMEYER,
Head of Division of Int.Maritime and Environmental
Affairs
Ministry of Transport and Water Management

Mr G. TANJA,
Assistant Legal Advisor
Ministry of Foreign Affairs

Ms Bernadine van der HULST,
International Environmental Affairs
Ministry of Housing, Town Planning and the Environment

Mr Robert E. de GROOT,
Third Secretary
Netherlands Embassy
Bonn

New Zealand

Representative

Mr Frank WONG,
Director, Legal Division
Ministry of External Relations and Trade

Delegates

Ms Clare FEARNLEY,
Legal Division
Ministry of External Relations and Trade

Mr Michael PREBBLE,
Environmental Analyst
Ministry for the Environment

Mr Robert McFARLANE,
Head Office
Department of Scientific and Industrial Research

Ms Arani CUTHBERT,
Advisor
NGO

Dr Penelope RIDINGS,
First Secretary
New Zealand Embassy
Bonn

Norway

Representative

Mr Jan ARVESEN,
Ambassador, Special Advisor on Polar Affairs
Ministry of Foreign Affairs

Delegates

Mr Morten RUUD,
Director General, Polar Department
Ministry of Justice

Mr Svein ANDREASSEN,
Head of Division, Polar Affairs Section
Ministry of Foreign Affairs

Ms Carola BJØRKLUND,
Legal Advisor
Ministry of Environment

Mr Olav ORHEIM,
Professor
Norwegian Polar Research Institute

Mr Kristian ØDEGAARD,
First Secretary
Norwegian Embassy
Bonn

Peru

Representative

Mr Luis de ARRIZ PORRAS,
Minister
Director of Antarctic Affairs

Delegates

General Carlos CHAMOCHUMBI,
President of the Subcommission for Logistics
National Antarctic Commission

Mr Enrique BELAUNDE,
Counsellor
Embassy of Peru
Bonn

Poland

Representative

Mr Janusz MICKIEWICZ,
Director, Legal Affairs Department
Ministry of Foreign Affairs

Delegate

Prof. Krzysztof BIRKENMAJER,
Chairman, Committee on Polar Research (PAN)
Polish Academy of Sciences

South Africa

Representative

Mr Naudé STEYN,
Chief Director of Multilateral Relations
Department of Foreign Affairs

Delegates

Mr Albert J. HOFFMANN,
State Law Advisor
Department of Foreign Affairs

Mr D. J. van SCHALKWYK,
Head of Antarctic And Island Directorate

Dr Alastair MOYES,
Scientific Advisor
Antarctic Research Office

Ms Antwa NOLTE,
Third Secretary
South African Embassy
Bonn

Spain

Representative

Mr Carlos BLASCO VILLA,
Director General de Relaciones Económicas
Internacionales
Ministerio de Asuntos Exteriores

Delegates

Mr José Luis CANDELA,
Subdirector General de Cooperación Científica- Técnica
Ministerio de Asuntos Exteriores

Mr Iñigo de PALACIO ESPAÑA,
Subdirector General de Coop. Aerea, Marítima y
Terrestre
Ministerio de Asuntos Exteriores

Mr Carlos PALOMO,
Instituto Español de Oceanografía
Ministerio de Agricultura, Pesca y Alimentación

Mr Juan María CISNEROS,
Instituto Nacional de Meteorología
Ministerio de Obras Públicas y Transportes

Mr Emilio LORENZO,
Consejero de Embajada
Embajada de España
Bonn

Mr Carlos FERNANDEZ-ARIAS,
Primer Secretario de Embajada
Embajada de España
Bonn

Sweden

Representative

Mrs Desirée EDMAR,
Director
Ministry of Foreign Affairs

Delegates

Mr Viveka BOHN,
Head of Section, Polar Department
Ministry of Foreign Affairs

Mr Björn BRANDT,
Head of Section
Ministry of Education

Mr Johan BODEGARD,
Principal Administrative Officer
Ministry of the Environment

Prof. Anders KARLQVIST,
Professor
Swedish Polar Research Secretariat

Ms Elisabeth de FIGUEIREDO,
Third Secretary
Ministry of Foreign Affairs

Union of Soviet Socialist Republics

Representative

Mr Artur N. CHILINGAROV,
Vice Chairman
State Committee on Hydrometeorologies of the USSR

Delegates:

Mr Dimitry ZOTOV,
Vice Chairman
USSR Commission on Arctic and Antarctic Affairs

Mr Sergei N. KAREV,
Head of Section, International Law Department
Ministry of Foreign Affairs of the USSR

Mr Leonid A. SKOTNIKOV,
Head of Legal and Treaty Department
Ministry of Foreign Affairs of the RSFSR

Mr Sergei V. KOUZNETSOV,
International Law Department
Ministry of Foreign Affairs of the USSR

Mr Valery D. KLOKOV,
Staff Member
USSR Arctic and Antarctic Research Institute

Mr Vitali M. SMAGIN,
Staff Member
USSR Arctic and Antarctic Research Institute

Mr Konstantine A. ZAITSEV,
State Committee on Hydrometeorologies of the USSR

Mr Georgi Ja. LIPAEV,
Head of Department
Ministry of Civil Aviation of the USSR

Mr A.V. JOUSKEVICH,
Hydrographic Office

Mr Alexander A. LOPUSHINSKY,
First Secretary
Embassy of the USSR
Bonn

United Kingdom

Representative

Dr John A. HEAP,
Head of Polar Regions Section
Foreign and Commonwealth Office

Delegates

Ms Elizabeth WILMSHURST,
Legal Advisor
Foreign and Commonwealth Office

Dr Michael RICHARDSON,
Deputy Head of Polar Regions Section
Foreign and Commonwealth Office

Dr John SHEARS,
Environmental Officer
British Antarctic Survey

Mr Brian SKITTRALL,
Representative of Hydrographic Office

United States of America

Representative

Mr R. Tucker SCULLY,
Director, Office of Ocean Affairs
Department of State

Delegates

Mr Raymond ARNAUDO,
Head, Division of Polar Affairs
Department of State

Dr Robert HOFMAN,
Scientific Programme Director
Marine Mammal Commission

Mr John TALMADGE,
Division of Polar Programs
National Science Foundation

Mr Jeffrey KOVAR,
Office of the Legal Advisor
Department of State

Mr Brian MUEHLING,
Office of International Activities
Environmental Protection Agency

Mr Thomas LAUGHLIN,
National Oceanic and Atmospheric Administration
Department of Commerce

Mr Will MARTIN,
Wilderness Society

Dr John BEHRENDT,
US Geological Survey
Department of The Interior

Mr John SPLETTSTOESSER,
International Association of Antarctic Tour Operators

Mr Francis KINELLY,
Counsellor (Science)
Embassy of the United States
Bonn

Uruguay

Representative

General Mario AGUERRONDO,
President
Uruguayan Antarctic Institute

Delegates

Dr Tabaré BOCALANDRO,
Counsellor, Antarctic Department
Ministry of Foreign Affairs

Mr Mario FONTANOT
Member of the Directive Council
Uruguayan Antarctic Institute

Dr María José VIGNONE,
Delegate
Uruguayan Embassy
Bonn

Dr Roberto PUCEIRO RIPOLL,
Legal Advisor of the Directive Council
Uruguayan Antarctic Institute

II. Non-Consultative Parties

Austria

Representative Dr Franz CEDE,
Minister Counsellor
Federal Ministry of Foreign Affairs

Delegate Ms Mag. Marina CHRYSTOPH,
Second Secretary
Austrian Embassy
Bonn

Bulgaria

Representative Mr Valentin BOJLOV
Head of Legal Department
Ministry of Foreign Affairs

Delegate Mr Andrey TEHOV,
Legal Department
Ministry of Foreign Affairs

Canada

Representative Dr Walter DAVIDSON,
Counsellor (Science and Technology)
Canadian Embassy
Bonn

Delegate Mr Christopher GREENSHIELDS,
Counsellor (Economic)
Canadian Embassy
Bonn

Colombia

Representative Ms Doris SANCHEZ DE WETZEL,
Counsellor
Colombian Embassy
Bonn

Delegates Dr Alfonso MATEUS ORTEGA,
First Secretary
Colombian Embassy
Bonn

Mr Arturo QUINTERO,
Cultural Attaché
Colombian Embassy
Bonn

Czechoslovakia

Representative

Dr Václav AUDES,
Counsellor
Czechoslovakian Embassy
Bonn

Denmark

Representative

Mr Jørgen LILJE-JENSEN,
Counsellor
Seerechtsamt

Mrs Kirsten SANDER,
Advisor

Greece

Representative

Dr Emmanuel GOUNARIS,
Chairman Greek National Committee for the Polar
Regions
Ministry of Foreign Affairs

Hungary

Representative

Mr Tibor PETÖ,
First Secretary
Hungarian Embassy
Bonn

Korea, Democratic People's Republic of

Representative

Mr Dok Sam LI,
International Law Expert

Delegates

Ms Yong Sun CHI,
Expert
Ministry of Foreign Affaires

Ms Hye-Zong CHO,
Meteorologist

Papua New Guinea

Representative

Mr Nilip P. NAKIKUS,
Counsellor
Embassy of Papua New Guinea
Bonn

Romania

Representative Mr Ion IORGIELESCU,
First Secretary
Embassy of Romania
Bonn

Switzerland

Representative Dr Lucius CAFLISCH,
Ambassador, Legal Advisor of the
Federal Department of Foreign Affairs

Delegates Ms Evelyne GERBER,
Counsellor, Directorate of Public International Law
Federal Department of Foreign Affairs

Mr Christoph BUBB,
First Secretary
Swiss Embassy
Bonn

III. Observers

Commission of the Convention on Antarctic Marine Living Resources (CCAMLR)

Representative Mr Jorge BERGUÑO,
Chairman
Commission for the Cons. of Antarctic Marine Living
Resources
CCAMLR

Scientific Committee on Antarctic Research (SCAR)

Representative Mr W. N. BONNER,
Convenor of the SCAR Group of Specialists
GOSEAC
SCAR

Dr P. D. CLARKSON,
Executive Secretary
SCAR

Council of Managers of National Antarctic Programs (COMNAP)

Representative Dr Mario ZUCHELLI,
Manager, Antarctic Project
ENEA
Rome
COMNAP

Dr David J. DREWRY,
Director
British Antarctic Survey
Cambridge
COMNAP

IV. Experts

Antarctic and Southern Ocean Coalition (ASOC)

Representative Mr Jim BARNES,
Counsel to ASOC
ASOC

Ms Cassandra Philips
ASOC

International Civil Aviation Organisation (ICAO)

Representative Mr Christian EIGL,
ICAO European Office

International Hydrographic Organisation (IHO)

Representative Mr Adam J. KERR,
IHO- International Hydrographic Organisation

International Maritime Organisation (IMO)

Representative Mr Bin OKAMURA,
IMO- International Maritime Organisation

Intergovernmental Oceanographic Commission (IOC)

Representative Dr Mike BEWERS,
Intergovernmental Oceanographic Commission
IOC

International Civil Aviation Organisation (ICAO)

Representative Mr Christian EIGL,
Representative
ICAO European Office

International Union for Conservation of Nature and Natural Resources (IUCN)

Representative Dr Martin HOLDGATE,
Director General
IUCN - World Conservation Union
IUCN

Dr Wolfgang BURHENNE,
The Legal Advisor
IUCN - World Conservation Union
IUCN

Dr Paul DINGWALL,
Advisor
IUCN - World Conservation Union
IUCN

United Nations Environmental Program (UNEP)

Representative Mr Arthur DAHL,
Deputy Director
Ocean and Coastal Areas Program, UNEP

World Meteorological Organisation (WMO)

Representative Dr N. A. STRETEN,
Chairman
WMO Exec. Council WG on Antarctic Meteorology

World Tourism Organisation (WTO)

Representative Mr Scott WAYNE,
WTO
WTO- World Tourism Organisation

Gedruckt nach fertigen Vorlagen
