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 expecially 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.

Environmmental 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.

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1 Note: This Statement does not take into account developements 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 conlusion 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 pupose 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 XVIth 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, co-operate 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 Depositary 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 COMMITTE 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 harvexsting 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 ATCPs[1]. 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 sutained 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 undesirabe. 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 ideed 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 aks 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 in 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 curently debating whether SCAR should in the future offer specialised "managemental" 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 ATS

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 progammes ... 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	All except 8	All except 1-11 and 13-19*	All except 5* & 6	All except 9, & 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	All
Australia	All	All	All	All	All	All
Belgium	All	All	All	All	All	All
Brazil(1983)+	All except 5	All	All	All	All	All
Chile	All	All	All	All	All	All
China(1985)+	All except 5	All	All	All	All	All
Ecuador(1990)+						
Finland (1989)+						
France	All	All	All	All	All	All
Germany (1981)+	All except 5	All except 1, 2 & 5	All	All	All	All
India(1983)+	All	All	All	All except 1 & 9		
Italy(1987)+	All except 5	All	All	All except 1 & 9		
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 except 1 & 9	All except 1	
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

+ 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
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, India, Italy, Rep.of Korea, Japan, Norway, Peru, South Africa, Spain, Sweden, USSR, UK, USA, Uruguay.
	XV-3,4,8,10,11,22 (Germany)	

(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 X1V-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

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2.5 Mitigation measures
2.6 Alternatives
2.7 Monitoring of impacts
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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:

- XII-3, and 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); and
- XV-1 (Comprehensive Measures for the Protection of the Antarctic Environment and Dependent and Associated Ecosystems).
- (XI Antarctaic 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 characateristics (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 intio 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 activitiees, 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 porposed 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 investigataion 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 acitivity. 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 explicity 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.

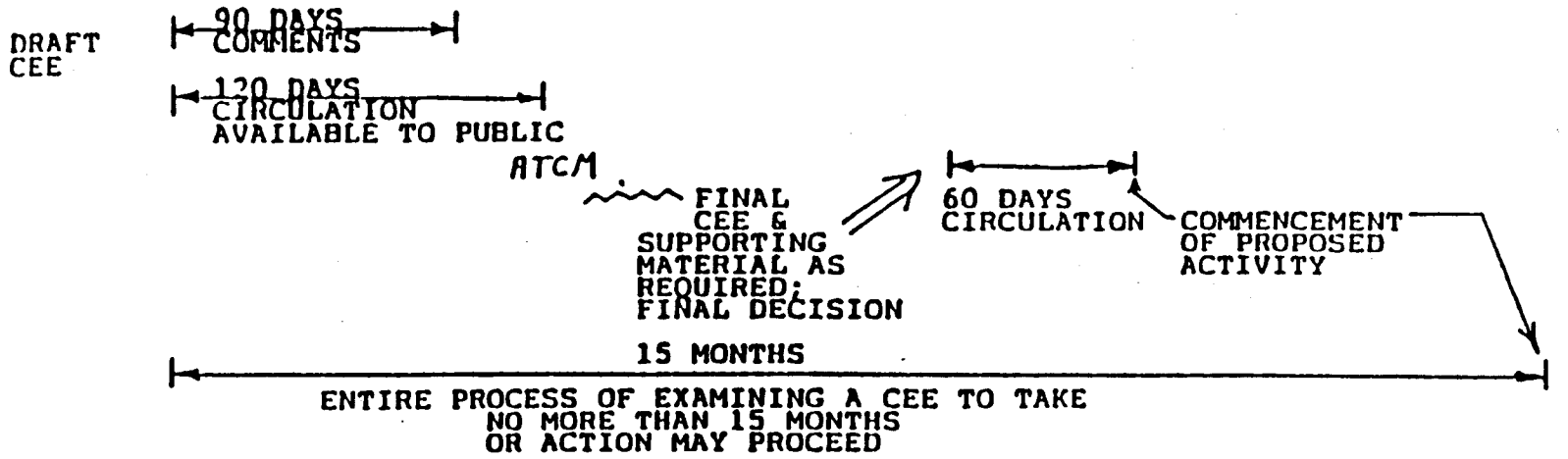
The environmental assessment process should be initiated at the earliest planning stage of an activity to enable adequate information gathering and baseline evaluations including necessary field studies). The environmental assessment should be completed before the final decision to start the activity 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:

- 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:

- 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 definiton 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 plcaces 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 percieved impacts are, in fact, likely to occur. The IEE is undertaken ideally at the ouset 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 monitroing 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 frquency 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 povide 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 Kohnen. 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

	Yes	No
1) Is training given to expedition members on waste management ? :		
prior to leaving for Antarctica	☐	☐
while in Antarctica	☐	☐
written material available	☐	☐
2) Are expeditions advised of any PVC products being provided ?	☐	☐
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 ?	☐	☐

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 4 FUEL CONSUMPTION ESTIMATE

NAME OF FIXED SITE / FIELD CAMP / VESSEL	ANNUAL FUEL CONSUMPTION IN TONNES								
	Ships bunkers - heavy	Ships bunkers - light	Diesel	Petrol	Liquid gas	Heating kerosene	Aviation kerosene	Aviation gasoline	Other
TOTAL CONSUMPTION									

PART 5 INVENTORY OF PAST ACTIVITIES

Details of past activities are given in the attached annex.

PART 6 INDIVIDUAL WASTE MANAGEMENT PLANS

Details of waste management procedures for each fixed site, field camp and ship are given in the attached annex(es).

PART 5 - INVENTORY OF PAST ACTIVITIES

Page ..... of .....

Name	Position (Lat, Long)	Extent of area (m^2)	Type of Activity	Period of Occupation From	To	Average Level of Activity	Remnants & Date Last Visited	Disposal Plans & Dates

PART 6 - INDIVIDUAL WASTE MANAGEMENT SUMMARY

Name of Fixed site/Field Camps in general/Vessel ..... Position (Lat, Long) .....

(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 .....

Location Category - Coastal ice free ☐
Inland ice free ☐
Coastal ice sheet ☐
Inland ice sheet ☐
Ice shelf ☐
Vessel ☐

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	RBC	Incineration (describe type)	Other		
Sewage									L	
Grey water									L	
Sewage treatment (eg RBC) residue									L	

GROUP 2 - OTHER LIQUID CHEMICALS & WASTES (INCLUDING FUELS & LUBRICANTS)

TYPE	DISPOSAL METHODS			Quantity (Optional)	Comments
	Removed from Treaty area	Removed to ..... station	Other		
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 * (Optional)	Comments
	Removed from Treaty area	Landfill	Removed to ..... station	Sea or sea ice	Open burn	Basic incinerator	High temp incinerator	Other		
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 * (Optional)	Comments
	Removed from Treaty area	Landfill	Removed to ..... station	Sea or sea ice	Ice pit	Remains on site	Other		
Glass								OM	
Aluminium								OM	
Other metals								OM	
Batteries								Kgs	
Non-liquid chemicals								Kgs	
Fuel drums (empty)								No.	
Incinerator residue								OM	
Other solid wastes (detail)									

* Quantities : L = Litres, CM = Cubic Metres, Kgs = Kilograms, No. = Number

GROUP 5 - RADIOACTIVE WASTES

TYPE (Please list isotopes)	DISPOSAL METHODS		Quantity *	Comments
	Removed from Treaty area	Other	(Optional)	
			L	
			L	
			L	
			L	
			L	
			L	
			L	

* Quantities : L = Litres, CM = Cubic Metres, Kgs = Kilograms, No. = Number

Appendix 4

. 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.

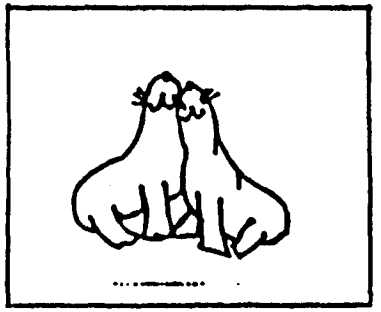
- If you have a marine band radio, remember that marine channel 16 is for primary contact only.

- 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.)

The Council of Managers of
National Antarctic Programs
July, 1990.

VISITORS' GUIDE TO THE ANTARCTIC

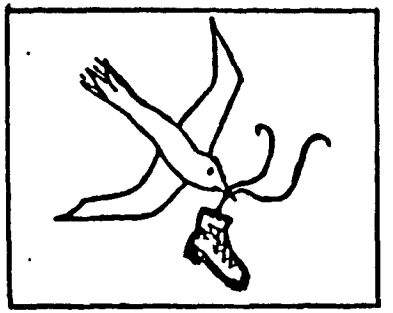
CARE FOR THE ENVIRONMENT



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

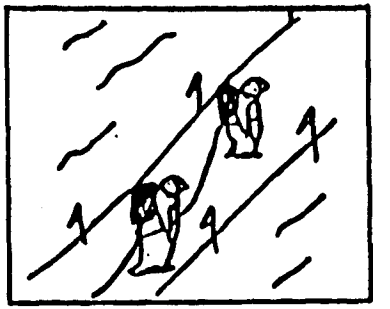
LITTER AND HUMAN IMPACT



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.

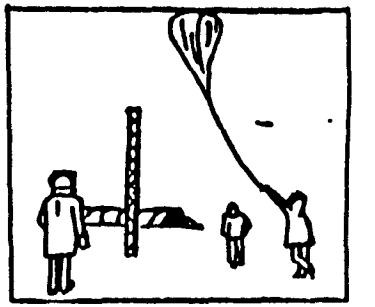
SAFETY



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.

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	(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 remainig 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 forthcomming 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 Recommendatons 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 (Comittee 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 Environmnent	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

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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	
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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 Relaçoes 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)

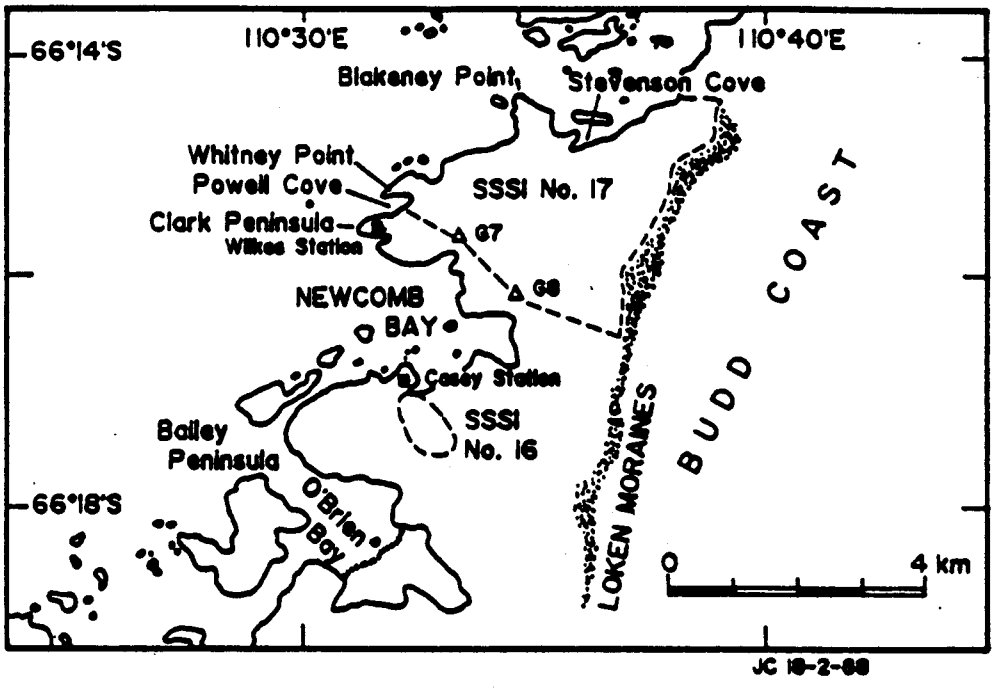
(iii)

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.

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1 see paragrgaph 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*

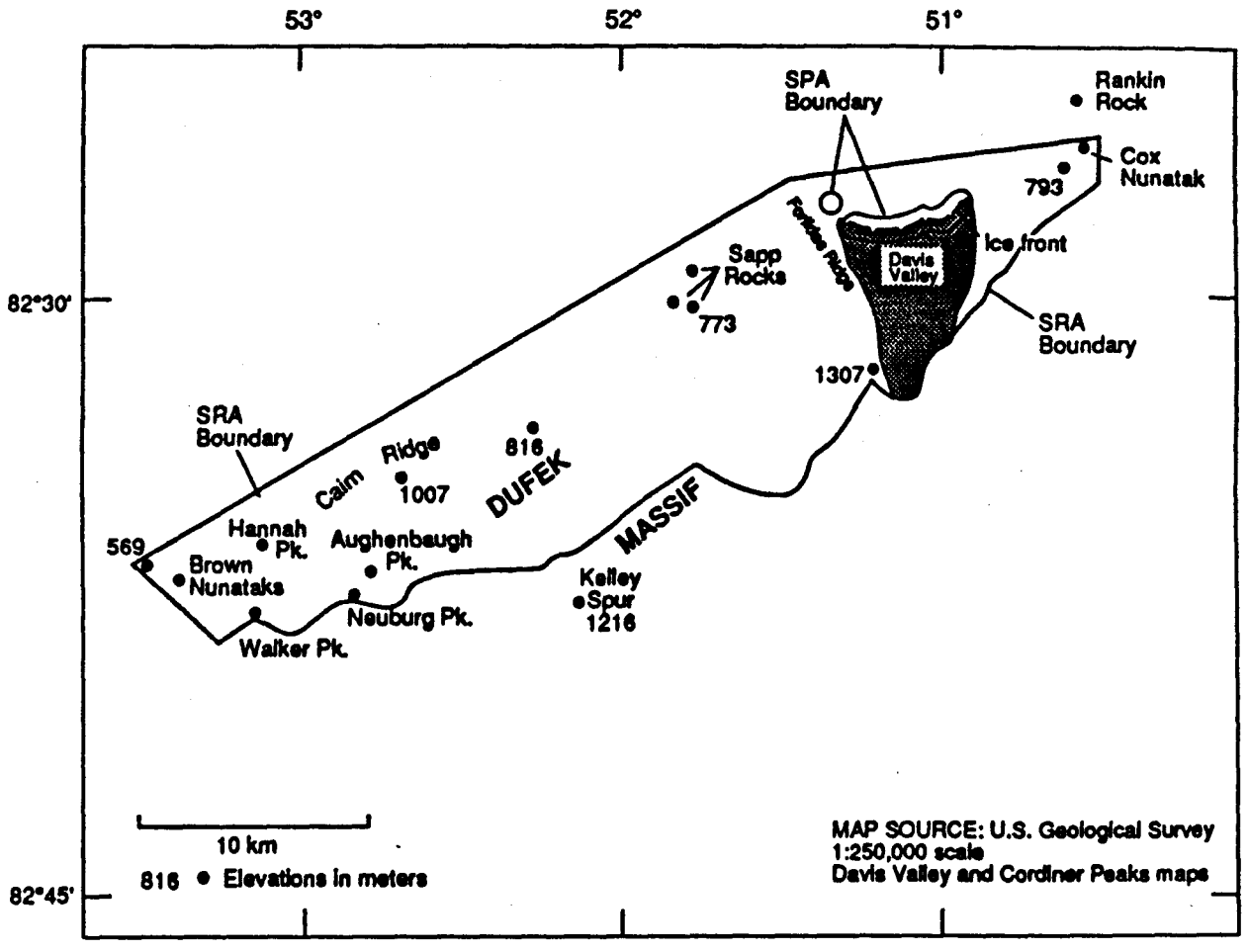
Permanent structures such as buildings and permanent stations are not to be established within the boundaries of the Area. Large shelters that may in effect become permanent fixtures when partly buried are also prohibited. (There are locations outside but adjacent to the boundaries where permanent structures 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 VICINITY [1]

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

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1 see paragrgaph 83 of the Final Report of the XVIth 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 stations'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 accomodated at the dock located at the station. Travel within three kilometres of the station is accomplished using inflatible, 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
Cape Monaco
Christine Island
Cormorant Island
Dream Island
Elephant Rocks
Hermit Island
Humble Island
Joubin Islands
Laggard Island
Limitrophe Island
Norsel Point
Palmer Basin
Short Cut Island
Short Cut Point
Stepping Stones Island
Torgersen Island

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 accomodate 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

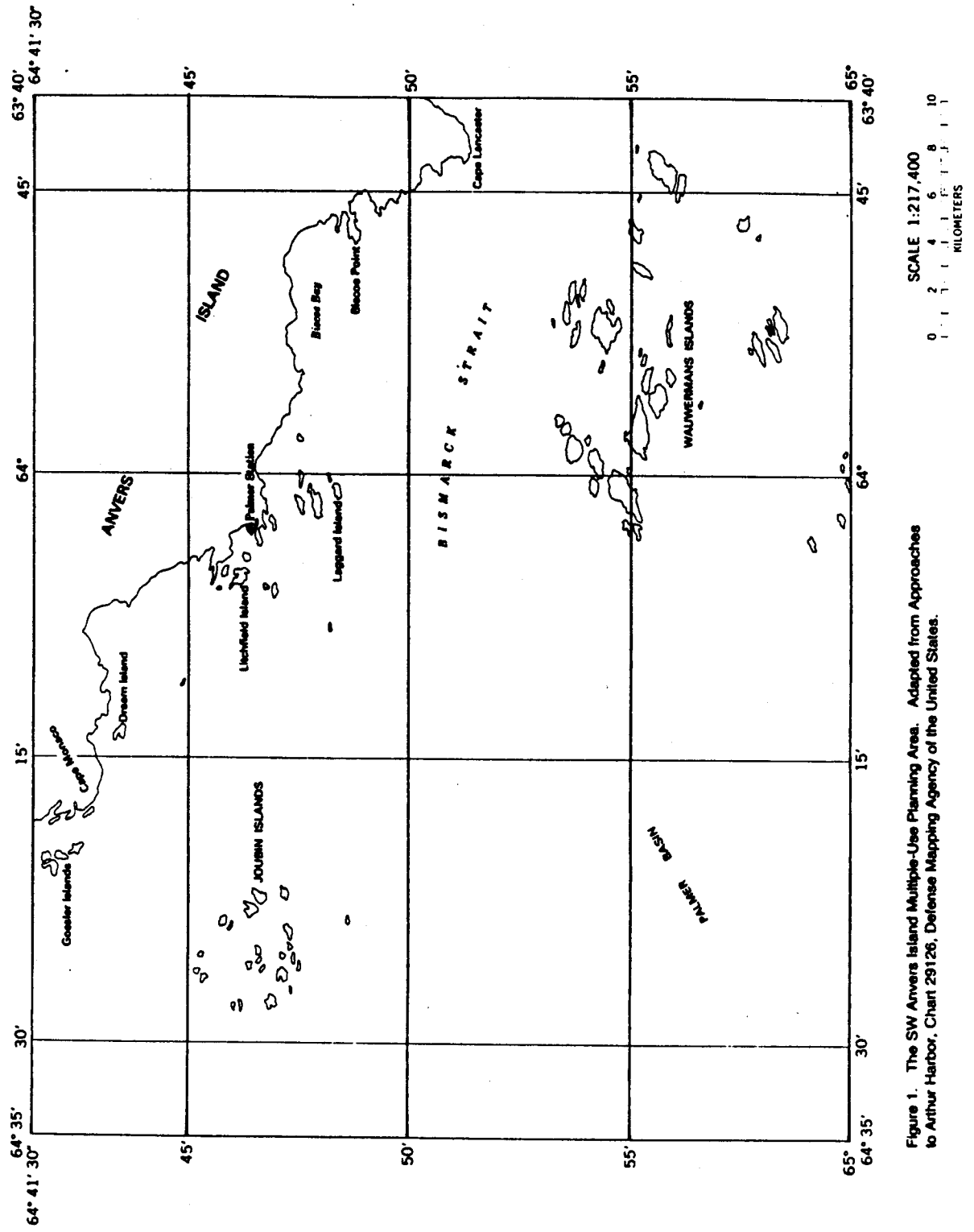

Figure 1. The SW Anvers Island Multiple-Use Planning Area. Adapted from Approaches to Arthur Harbor, Chart 29126, Defense Mapping Agency of the United States.

MPA Anvers Island and vicinity

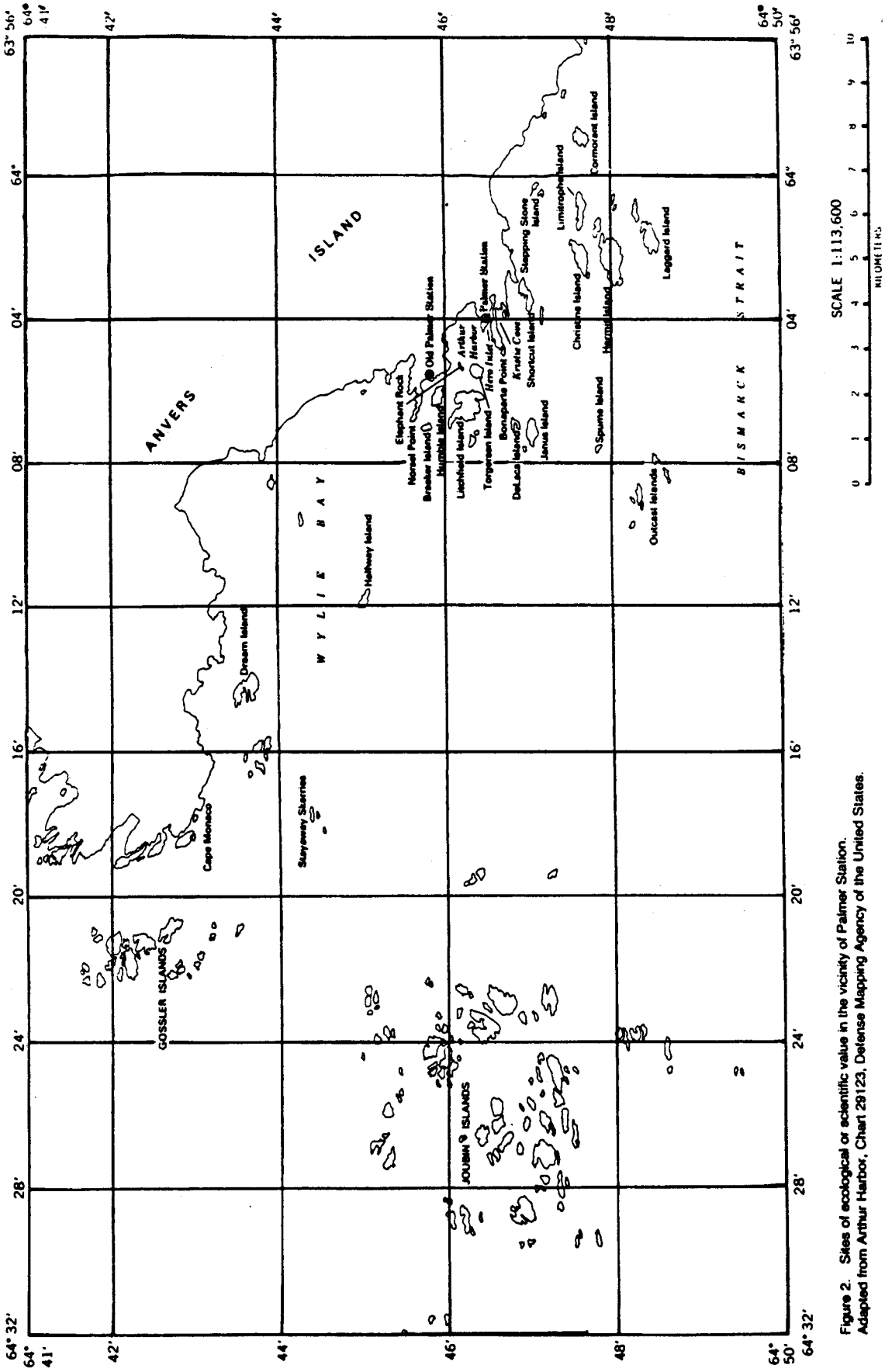

Figure 2. Sites of ecological or scientific value in the vicinity of Palmer Station.
Adapted from Arthur Harbor, Chart 29123, Defense Mapping Agency of the United States.

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 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 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)

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