

International Council of Scientific Unions

SCAR report

**No 14
May 1997**

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(GOSEAC)**

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Published by the
SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH
at the
Scott Polar Research Institute, Cambridge, United Kingdom

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SCAR GROUP OF SPECIALISTS ON ENVIRONMENTAL AFFAIRS AND CONSERVATION

Report of the eighth meeting, GOSEAC VIII, held in Puerto Iguazú, Argentina, 17–22 June 1996.

Group members attending the eighth meeting were: D W H Walton (Convenor), J M Acero, P J Barrett, E Fanta, M C Kennicutt, H Miller, M Oehme, P Trehen, J C A Sayers and J Valencia. M De Poorter (ASOC) attended as an Observer. P D Clarkson (Executive Secretary, SCAR) acted as Secretary to GOSEAC. Apologies were received from K Birkenmajer and M Manzoni. A list of GOSEAC members and observers addresses is given in Appendix 1.

Opening of the Meeting

General J Leal, Manager of the Argentine Antarctic Programme, welcomed the Group of Specialists to Argentina. He expressed the hope that the meeting would be able to advance the cause of environmental protection in the Antarctic, a matter to which the Argentine programme was totally committed. The Mayor of Puerto Iguazú added his own welcome and hoped that the environment of the Iguazú National Park would be an inspiration to the Group.

The Convenor thanked General Leal for inviting SCAR to hold the GOSEAC meeting in Argentina and the Mayor and people of Puerto Iguazú for the warm welcome. He also thanked Dr Acero for making all the necessary arrangements for the meeting and J L Agraz and C A Aguirre for their support. He spoke on behalf of all the members of GOSEAC when he said how much they all looked forward to the opportunity to see something of this beautiful region of Argentina.

1. Adoption of Agenda and appointment of Rapporteurs

The Convenor welcomed the Members and Observers to the meeting.

The draft agenda (Appendix 2) and the work plan, which had been circulated to the members prior to the meeting, were adopted as tabled. Rapporteurs were appointed for the following agenda items:

H Miller (1–4); J C A Sayers (5); P J Barrett (6); D W H Walton (7.1–7.2, 9–10); J Valencia (7.3–7.4); M Oehme (7.5–7.6); P Trehen (7.7); E Fanta (8).

2. Membership of the Group

The Convenor reminded the members of the need to review membership of the group on a regular basis to ensure an appropriate balance of expertise for the tasks to be undertaken. It was also felt to be important that GOSEAC members were well connected within the SCAR and Treaty systems (eg as members of Working Groups). Comments were invited as to perceived gaps and on personal plans of present GOSEAC members, so that suggestions may be made to the SCAR Executive which will consider whether the membership of the Group will change.

P Trehen stated that as he has taken on new heavy commitments within CNRS in France he would like to retire from GOSEAC and expressed the hope that in future there would be another expert in terrestrial ecology to replace him.

J C A Sayers informed the Group that he plans to retire from his present office in late 1997 and thus from SCALOP, which would effectively terminate his membership of GOSEAC. However he is applying for the office of Executive Secretary of COMNAP. Should he be appointed, he would be pleased to continue serving as a member of GOSEAC. This was felt to be an excellent solution.

Present members together with their fields of expertise and affiliation to relevant SCAR bodies are listed below.

Acero [Argentina]	environmental officer	AEON		
Barrett [NZ]	sedimentary geology	WG Geol	GS Cenozoic	SCAR Del
Birkenmajer [Poland]	geology	WG Geol	SCAR Executive	ATCM
Fanta [Brazil]	marine biology	WG Biol	Genetics Subcom	CCAMLR
Kennicutt [USA]	pollutant chemistry	none		
Manzoni [Italy]	politics & international affairs	ATCM		
Miller [Germany]	glaciology geophysics	WG Glacio		
Oehme [Switzerland]	environmental chemistry & analysis	none		
Sayers [Australia]	operations manager	SCALOP		
Treher [France]	terrestrial ecology	none		
Valencia [Chile]	ornithology	WG Biol	IUCN Advisory Com	SCAR Del
		ATCM		
Walton [UK]	plant ecology	ATCM		

Table of expertise and related experience of current GOSEAC members.

3. Matters arising from GOSEAC VII

The Convenor advised that a number of items arising from GOSEAC VII were already listed as agenda items.

J C A Sayers tabled two SCALOP documents, one on the use of de-icing fluids and one on the survey of fuels used during one year (Appendix 3).

It was noted that de-icing fluids are not commonly used. However, information is missing from some Parties known to operate aircraft and from tour operators, such as Adventure Network. It was also noted that the information only gives brand names and the composition of the fluids used needs to be known. Chile, Uruguay and tour operators should be approached to complete the list.

The document on fuels was found to very useful, providing the basic data from which the total emissions can be estimated. It was felt that tour operators should be approached by COMNAP through IAATO to provide appropriate figures for tour ships. E Fanta will liaise with CCAMLR to obtain values for the fishing fleet on fuel types and their amount. The Convenor thanked J C A Sayers for his effort in assembling this information.

The Convenor advised that he had further discussions with Working Groups on the designation of a possible pristine area of inland ice as a protected area. This matter will be taken up again at the next Glaciology Working Group Meeting in Cambridge.

The Convenor referred to discussions during XX ATCM with NGOs on suitable promotional materials on Antarctic science, which could also be suited as a general introduction to the Antarctic environment for tourists. It seems there is a need for such material and efforts should be made to collect video footage from which to draw.

J Valencia reported that INACH will open an office in Punta Arenas. J M Acero advised that tourist educational facilities were already available in Ushuaia. Both of these gateways to the Antarctic have great potential for the education of tourists.

The Convenor reported on a forthcoming workshop on polar tourism organized by B Stonehouse at SPRI in August 1996. Plans exist to publish a tourist guide to Antarctica. The Convenor also said that at XX ATCM the USA reported on an Antarctic site inventory, aimed at studying effects at heavily used tourist sites. The author of the study, R Naveen, had made a good assessment of many of the sites, using a systematic approach.

4. Report on XX ATCM, Utrecht 1996

4.1 TEWG

The Convenor reported on the XX ATCM and tabled relevant sections of the draft final report. SCAR did not have to make a major presentation but an overview of international scientific programmes and its role in their coordination was well-received. The TEWG worked more efficiently this time, utilizing small subgroups for some discussions, which then reported back to the plenary. There was a record number of papers (185) tabled but the

Meeting lacked any great sense of direction. SCAR was asked to provide a proposal on how to prepare a "State of the Environment Report" for the Antarctic. SCAR was requested to report on Antarctic biodiversity at the next ATCM; this will be discussed by the Working Group on Biology.

The question of easy public access to Antarctic Treaty documentation was discussed. The recommendation by SCAR and IUCN to nominate one library in each country as a depository was not agreed. The issue remains open.

IUCN was encouraged to continue up-dating its inventory of arrangements for environmental education and training. The UK delegation offered to consult with interested parties and work with SCAR and IUCN towards proposals in this field for the next ATCM.

South Africa introduced a paper reporting on variations in procedures set down in the CEE for the construction of the new base. Such clear and open reporting was felt by GOSEAC members to be commendable and exemplary. In the ensuing discussion on how to evaluate and judge EIAs, it was felt that a wider distribution of the EIAs was necessary together with reports on their success after the activity had taken place. It was recognized that this would be an important task for the Treaty Secretariat, as well as the CEP. An immediate practical step forward would be to link the Environmental Officers of National Antarctic programmes more closely.

The designation of Admiralty Bay as an ASMA proved to be a contentious issue but was adopted after further modifications. The management plan must be reviewed once Annex V comes into force.

The Convenor noted that management plans in general could be a somewhat contentious issue. It is therefore very important that all who might be concerned should receive a copy of the plans in due time and that issues are discussed at an early stage. As many new and revised plans are expected in the future GOSEAC will have to find ways to deal with them effectively. It seems important that work on the Handbook for the preparation of management plans (agenda item 7.1) continues rapidly. The issues of mandatory and hortatory requirements for ASMAs could not be resolved.

Following the report by ASOC on EIA monitoring at World Park Base, the ATCM noted this as an example that monitoring was not an indefinite process, but can be terminated, once it has been shown that the predictions of the EIA have been validated.

The Convenor noted the paper on management plans for Subantarctic Islands which, strictly speaking, lie outside the Antarctic Treaty Area. They were, however, considered at the ATCM because they are viewed as dependent ecosystems.

SCAR and COMNAP presented a one page Summary on the two workshops on environmental monitoring (see Agenda item 6.2). Appropriate Working and Information Papers will need to be prepared for XXI ATCM.

4.2 Liability Annex

The Liability Group met concurrently with the TEWG. SCAR was the only Observer that participated in the deliberations. With the fifth offering by the Chairman, R Wolfrum, there seems to have been steady progress made towards a Liability Annex. Yet many issues remain unresolved. Presentations made by E Chiang (SCALOP) and R B Heywood (COMNAP), as well as a letter by C W Sullivan, had made clear that the issues can never be resolved unless more technical and scientific knowledge is incorporated. Questions of what constitutes damage or whether a possible impact predicted in an EIA is considered to be damage in case it should happen, remain open. Definition of the terms minor and transitory also remain unclear.

GOSEAC members felt that they were not able to provide legal definitions, but would be happy to provide practical scientific input through SCAR to the lawyers' meetings should they be so asked. In response to a query to GOSEAC by the President of SCAR on what might be relevant questions to be considered by SCAR, the following were suggested:

- Can ecosystems be restored?
- Can ecosystems be ranked in importance?
- What are the values to be restored?
- Are there thresholds for damage and how can they be defined?
- How are consequences of natural disasters to be treated?

----- It may be useful, if these questions could be underpinned by case histories, possibly even from areas outside the Antarctic. COMNAP and SCALOP have now made presentations to the lawyers on the practical difficulties of the Liability Annex. SCAR should now identify scientific problems in a similar fashion.

4.3. Agenda items for XXI ATCM

The Convenor advised that the President of SCAR wants to be more proactive in preparing material for future ATCMs and that GOSEAC should give the SCAR Executive an indication on which subjects papers should be forthcoming. After some deliberation the following papers were identified:

- Working Paper with monitoring recommendations (SCAR-COMNAP)
- Information Paper with a report on the Workshops on Environmental Monitoring (SCAR-COMNAP)
- Management Plan Handbook (GOSEAC)
- EIA procedures (GOSEAC)
- Biodiversity Report (Working Group on Biology)
- State of the Antarctic Environment Report (SCAR)

5. Environmental impact assessments

5.1 Development of checklists for common activities

Draft checklists for environmental impact assessments of activities in near shore or shallow coastal areas, drilling in

rock/soil/sediments, ice drilling and seismic traverses were circulated to the relevant SCAR working groups for comment following GOSEAC VII. Comments were received from P F Barker, Secretary of the Working Group on Solid-Earth Geophysics, on the checklist for seismic traverses. H Miller advised that he and P J Barrett had reviewed the comments and concluded that the suggestions proposed by the Working Group could best be addressed by producing two checklists; one for marine and the other for land based seismic activities. It was agreed the new checklists would be presented at the August 1996 meeting of the Working Group on Solid-Earth Geophysics, Glaciology and Geology.

With regard to the checklist for near-shore activities, H Miller referred to work undertaken last season by the German expedition which indicated that scouring of the sea bed by icebergs is more prevalent than expected and therefore has a major impact on the benthic community. In view of these comments it was agreed that section 1.4 of the checklist be amended to include "ice scours". The revised checklist would be referred back to the Working Group on Biology for comment.

5.2 Definitions and impact matrices

The Convenor noted that the Group had five papers to consider which related in various ways to agenda items 5.2 (Defining minor or transitory), 5.3 (on cumulative impacts) and 5.4 (on impact matrices and definitions). The Group therefore agreed to consider all three agenda items together on the basis of examining each paper in turn. It was decided to examine the papers in the sequence listed below:

- 'Use of terms in Antarctic EIAs', a GOSEAC discussion paper by M Manzoni;
- 'A Preliminary Assessment Form', a GOSEAC discussion paper by P D Clarkson;
- 'Developing an Understanding of Minor and Transitory', XX ATCM Information Paper submitted by New Zealand;
- 'Environmental Audit (Review), Assessment and Monitoring', a GOSEAC discussion paper by J M Acero;
- 'Environmental Audit (Review), Assessment and Monitoring', a GOSEAC discussion paper by E Fanta.

The *Manzoni Paper* examined the common terms used in Antarctic EIAs and highlighted some inconsistencies and weaknesses in the construction of those IEEs examined. The paper noted that there are "wide differences in approach, size, carefulness, detail and internal consistency of the documents" and this was largely due to the different approaches by the various operators and agencies and the lack of appropriate expertise of the authors. Often the authors failed to give clear statements why particular conclusions had been reached. In some cases conclusions were reached without adequate evidence to support them. The Meeting acknowledged that it would be useful for the

name and qualifications of the various contributors to IEEs and CEEs to be stated in the documents.

The *Clarkson Paper* described a matrix assessment technique that could be used to assist in determining whether or not an activity would have a greater than minor or transitory impact. The Group agreed that the matrix appeared to have considerable merit as a tool which could:

- provide a methodical approach to assist in determining the level of environmental assessment needed for a particular activity;
- be used to facilitate an analysis of existing EIAs to identify areas of weakness in the documentation; and
- encourage standardization of treatment.

It was agreed that the author would revise the matrix to take into account the various suggestions made.

The *New Zealand Paper* gave a series of definitions, dealt with the concept of "transitory" and helped to put a value or ranking on it and used an exemplar approach to provide an indication of the level of assessment required. However, it was noted that the exemplar approach is based on the type of activity rather than on the vulnerability of the environment to impact which was the method preferred by the recent SCAR/COMNAP workshops on environmental monitoring. The paper did not pick up the issues of cumulative and secondary impacts. The Group concluded that this paper also contained useful information that would assist in the revision of the COMNAP Guidelines on EIAs.

The *Acero Paper* comprised a compilation of proposed definitions and related considerations. The Group discussed the use and meaning of the term environmental audit. It was agreed that the term "audit" was inappropriate and the term "review" should be used instead. Furthermore, it was acknowledged that the environmental review of activities is a sound and valuable process although few national programmes have undertaken reviews up to the present time. The New Zealand Antarctic Programme had presented an Information Paper (Info 59) to XVIII ATCM on a review conducted of its Antarctic activities. J M Acero also provided GOSEAC members with a copy of an Environmental Review of Argentine Activities at Bahia Esperanza (Hope Bay) which will be presented to the XXI ATCM. The development of definitions was crucial and there was a need to produce a glossary of agreed terms and definitions. The use, by J M Acero, of examples to illustrate the definitions was a sound approach which clearly illustrated the distinction between terms commonly used in environmental management and consequently avoids confusion.

The *Fanta Paper* complemented the Acero paper. The paper included a matrix to illustrate the relationship between the progress of activities from conception to completion and the associated need for EIAs, environmental assessment, monitoring and review. The paper concluded with a proposal that GOSEAC could produce, or coordinate the production of, a handbook giving practical advice on environment assessments and evaluations. The Group

acknowledged that a revision of the COMNAP Guidelines on EIAs was the appropriate way forward and that all the papers that had been considered under this agenda item would provide valuable input to this work.

The Convenor introduced a paper by J B Wesnigk on "Impact Matrices and Definitions" prepared at the request of the German Federal Environment Agency (UBA) to provide guidelines that would assist in implementation of the Madrid Protocol legislation.

In the paper, Dr Wesnigk referred to the possible involvement of international experts on the UBA scientific committee and asked whether GOSEAC, either as a group or via individual members, would be interested in providing expertise. The Group concluded that it would not be appropriate for GOSEAC to become directly involved in a national committee. It was also noted that if individual members were to accept an invitation to participate, they would be doing so as independent experts and not under the auspices of GOSEAC.

6. Environmental monitoring

6.1 Report of SCAR/COMNAP workshops

A draft report combining the results of workshops in Oslo in October 1995, on "Prioritization of Impacts and Development of Monitoring Options", and in College Station, Texas, in March, 1996, on "Practical Design and Implementation of Environmental Monitoring Programmes", was tabled for discussion and review. In introducing the report the Convenor acknowledged the effort of participants and workshop convenors in their wide-ranging coverage of the issues and in reducing the results of their discussions to a draft document in such a timely way. He noted that the goal of the report was to provide a framework for development of environmental monitoring, not a handbook for all monitoring activities, and the report should be reviewed in that light.

The report was reviewed with some care, attention being paid to definitions of terms, style and consistency. The Meeting was reminded that a major focus for the workshops was monitoring for local, not globally-sourced, impacts on the environment. One concern in the report was the current difficulty in interpreting results from biological monitoring, though this had potential for improvement as ecosystems, and links between pollutants and organisms, became better understood. Major themes of the report were the necessarily individualistic requirements of each monitoring programme, and the importance of careful design prior to the start of data collection. The Group suggested that the proposals for biological monitoring should be written in a more positive way, taking into account the possible application of recent progress in research.

The Meeting identified a number of subject areas that could result in recommendations for SCAR and COMNAP to consider and develop for presentation at the next Treaty meeting (XXI ATCM). These included:

- the need for baselines;
- internationally agreed protocols for data collection and analysis;
- a system for data access and exchange using the SCAR system;
- the need for further work to make progress on biological monitoring which could be addressed through a workshop organized by the Working Group on Biology;
- the need for SCAR and COMNAP to coordinate existing and new monitoring programmes;
- the need for SCAR and COMNAP to review historical and current environmental monitoring data, and
- the means for reviewing effectiveness of monitoring programmes.

6.2 Antarctic Environmental Specimen Bank and Reference Materials

A paper on certification of reference materials for marine sediment, ocean water and krill by S Caroli et al (*Mikrochimica Acta*, 123, 119–28, 1996) was considered, and seen as a positive first step in this field. Standard reference material was seen as essential for monitoring but, the cost of making and maintaining a library of this material was also acknowledged. It was considered that, for some compounds and matrices, reference material is already available from temperate regions and might serve as well. For some biological materials specific to the Antarctic, locally-sourced material would be necessary. In the latter case it was agreed that some effort should be made to ensure that the material was representative and that details of its location and procurement were known. It was noted that material that had been in contact with plastic would not be acceptable for subsequent high quality organic analysis. It was also considered that materials collected for reference purposes could not be used for baseline purposes. Biological reference materials were seen as having special value. It was recommended that the Working Group on Biology should consider this further.

6.3 State of the Environment Report

XX ATCM requested SCAR to provide proposals on how a state of the environment report might be undertaken. The Convenor observed that a substantial report on this topic was required both by the Protocol on Environmental Protection, expected to enter into force shortly, and by Agenda 21, agreed at the 1992 Rio de Janeiro Earth Summit. The Meeting considered a discussion paper by UNEP-GRID Christchurch on a proposal for the production of a report on the State of the Antarctic Environment to both Protocol and Agenda 21 needs. SCAR was the organisation best placed to take on the task. An outline for the proposed report was discussed. Other issues to be resolved at an early stage would include:

- procedures setting up an editorial board and identifying potential contributors, taking into account the wide range of expertise required;

- deciding on style and content bearing in mind that it will represent a benchmark against which progress in understanding the Antarctic environment will be measured.

6.4 Localized impacts

The Convenor introduced a paper reporting abandoned building and vehicle components, and food and rusting fuel containers. He also reported some environmental impact in the form of a name scratched into a lichen believed to be more than 500 years old. It was agreed that the discovery of historical waste material is likely to be a continual problem that would be best addressed by passing on relevant information to National Programmes, who should report new occurrences in the Annual Exchange of Information and who could take appropriate action.

The paper also reported numerous sealers' encampments dating from the early 19th century on the South Shetland Islands and proposed that several sites should be considered for designation as Antarctic Specially Protected Areas. The Group agreed that this seemed desirable and should be pursued through the normal process by interested parties through their National Committees.

7. Protected and Managed Areas

7.1 Draft Handbook for the preparation of management plans

The Group critically examined a draft of the proposed handbook. Substantial additions were made to the text and six annexes defined. At the request of the ATCM, particular attention was paid to the section dealing with maps. The revised version of this draft will be passed to the Working Groups, Delegates and to CCAMLR for further comment, with the intention of providing the final version to XXI ATCM.

7.2 Use of "prohibited" and "restricted"

The Convenor tabled a short paper from New Zealand, requesting the advice of GOSEAC concerning the use of the terms "prohibited" and "restricted" in management plans. The Group discussed the application of these terms and agreed that both terms were acceptable for describing zones in management plans. In general, the use of the term "restricted" appeared to be better since the term could be used to indicate either partial or total exclusion. Qualification of the term could be used to meet the specific needs of each individual plan, eg 100% restriction would constitute prohibition.

7.3 Revision of existing SSSI and SPA management plans

The Convenor introduced four documents containing the revised versions of the management plans for three SSSIs and one SPA. During the discussions of the structure and content of the documents, GOSEAC members noted the difficulties and confusion caused by the delay of the entry into force of the Protocol and the interpretation of the

requirements of Annex V. Several of the difficulties encountered by the proponents of revised management plans will be solved when the Handbook for the Preparation of Management Plans becomes available. It was agreed that to meet the requirements of the ATCM in developing adequate geographical and habitat coverage, plans should indicate to which cells in the ecosystem matrices they are related.

7.3.1 Lions Rump. (SSSI No 34)

The Group examined the revised version of the management plan for Lions Rump, King George Island. This new plan is in the standard format agreed by the ATCPs, but it still lacks adequate maps that show clearly the boundaries and the location of the main physical features and other components of the Area, including a small refuge within the area that is not described. There are also some inconsistencies between the description of the values to be protected and the objectives of the plan, and a question over the geographical coordinates given in different sections of the draft plan. This management plan in its present form will be returned to the authors with all the suggestions for significant improvement.

7.3.2 Western shore of Admiralty Bay. (SSSI No 8)

The revised version of this management plan also lacks the required maps. It shows a partial description of the values to be protected. In this case, the site has geological and paleontological scientific values that will not be protected under the present form of the management plan. The authors also need to recognize that this Area is now within the limits of an ASMA in Admiralty Bay, King George Island, approved at XX ATCM. It will be sent back to the originators for further modifications.

7.3.3 Canada Glacier, Taylor Valley, Victoria Land. (SSSI No 12).

The Group reviewed the new version of this management plan, containing a series of four maps and a detailed description of the values to be protected. The Group endorsed this management plan with minor modifications, and will recommend its acceptance to SCAR.

7.3.4 Beaufort Island, McMurdo Sound, Ross Sea. (SPA No 5).

The review of this plan showed some departures from the original reason for designation and some ambiguities on the values to be protected. The Area does not contain as many bird species as expected when designated with only three breeding sites of marine birds. Its proposed status as a "reference area" was not clearly substantiated. Other difficulties refer to the type of management activities, such as the designated camp site and the helicopter landing area being too close to the breeding birds, that seem to be inappropriate for a reference area. The Meeting was unable to endorse this management plan in its present form so the document will be returned to the authors with suggestions for improvement.

7.4 New ASPA management plans

The Convenor introduced three draft management plans to be reviewed and to establish if they fit the requirements of Annex V of the Protocol. These proposals are very heterogeneous regarding their objectives and the underlying concepts and the nature of the values to be protected. Despite this, the Group recalled that, under Article 6 of Annex V to the Protocol, proposed management plans shall be sent to SCAR and that the Committee on Environmental Protection shall take into account the comments of SCAR. The Group had a productive exchange of ideas about their feasibility and made suggestions about the contents and acceptability of these proposed Management Plans.

7.4.1 Cape Evans, Ross Island

This proposal for a new ASPA contains several historic remains including the Terra Nova Hut. Some of the components in the Area are listed as Historic Sites and Monuments. This management plan has been prepared to help preserve historic, aesthetic and cultural values, introducing the concept of restoration of buildings as management activity. GOSEAC was concerned that since Annex V is not yet in force the designation of this site as an ASPA appears to be legally unacceptable. The authors should consider what would be the most appropriate existing classification to use. Other components of this management plan do not fit the present agreed format for ASPA plans although it was recognized that the style of plans would need to evolve in the light of new requirements. Considering all these features of the proposal, the Group was unable to endorse this management plan in its present form. It will be returned to the originators with a summary of the main comments.

7.4.2 Cape Geology and Botany Bay, Granite Harbour, Victoria Land

This proposal is for the protection of scientific and historical values. Considerable botanical research has been carried out. The management plan contains all the required components and fits the standard format. The Meeting recommended its acceptance by SCAR with minor modifications.

7.4.3 Lewis Bay, Mount Erebus, Ross Island

The management plan proposed is for a new Specially Reserved Area (SRA) but this category of protected area has not been and will not now be adopted by the ATCPs. The Meeting was unable to endorse this management plan in its present form. The revised text and suggestions will be returned to the authors to be reformulated. One possible alternative may be to adopt this area as an Historic Site.

7.5 Possible sites for ASPA designation

Attention was drawn to the list in Appendix 1 of the paper by R I Lewis Smith in the Proceedings of the SCAR-IUCN Workshop on Antarctic Protected Areas concerning suggested regions for the designation of new ASPAs (Lewis

Smith, R I, Walton, D W H and P R Dingwall (eds). 1994. Developing the Antarctic Protected Area System. Gland, IUCN, p 33.). Despite the fact that, in 1993, National Committees had been requested to consider designating new protected areas to close some of the gaps in the ecosystem matrix, the Convenor observed that no new plans had been forthcoming to achieve this. It was noted that SCAR will have the right, under Article 5 of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty, to propose new protected areas and to prepare management plans. However, several members of the Group expressed the view that it would be inappropriate for SCAR to do this.

Bearing in mind that management plans are normally initiated by individual scientists or national agencies, GOSEAC recommends that SCAR discuss [with COMNAP] the need for management plans for specific areas and should encourage scientists, through National Committees, to prepare management plans for those areas that require protection.

7.6 *Proposals for management of Dry Valleys*

A summary paper was presented dealing with the key features of the NSF workshop on the Management of the Dry Valleys that was held in Santa Fe, USA, in 1995. It contained a list of concerns about the long term value, a management system to be agreed, and proposals showing how to protect the scientific values of the region. The Convenor spoke very positively about the paper and the intention to establish a management regime in the context of the Protocol. The proposed approach was considered to be very suitable for handling such a large area with so many different activities. It was also considered that this approach could well indicate the way to proceed with other areas of concern (see 7.5). Further comment on this paper is required by Working Groups [before consideration by SCAR Delegates].

7.7 *Management plans for Subantarctic islands*

The information paper (XX ATCM/Info 64 (Rev 2)) submitted by IUCN to XX ATCM was considered to be a very useful contribution. The arguments used in this document are focused on Article 3 "dependant and associated ecosystems" and emphasize the wide range of environments represented by the sub-Antarctic islands. These arguments include:

- the great number of islands lying between the Antarctic continent and the sub-tropical zone;
- vertebrates foraging within the Antarctic Treaty area (south of 60° south latitude);
- the northern biogeographical limits for Antarctic biotas;
- the increasing number of research programmes in terrestrial and marine ecology;
- the increase of shipping involving fishing and tourist activities.

Although many of the sub-Antarctic islands lie outside

the Antarctic Treaty area, they do lie within the SCAR area of interest. This is particularly so when considering the "dependant and associated ecosystems", the main argument used in the IUCN paper.

The Management Plan for Heard Island, prepared by the Australian Antarctic Division, was briefly reviewed and highly commended by the Group. It was noted that other countries, notably France, were also preparing management plans for some sub-Antarctic islands. The Group was advised by J C A Sayers that the Australian Government intend to nominate Heard Island and Macquarie Island for World Heritage listing in the very near future.

8. Reports

8.1 *Relevant SCAR groups*

CS-EASIZ and Global Change: The Convenor reported that the first number of the news letter CS-EASIZ and of Global Change are now available, containing communications on new and ongoing activities within these SCAR programmes.

BIOTAS had its first international expedition with Italy, the UK and USA and, with the major support of the Italian program, was successful. The next international expedition will be discussed during the SCAR meeting at Cambridge in 1996, and it is expected that initial results on BIOTEX will be available at that time. Some bilateral agreements and joint research on BIOTAS hypotheses has been undertaken by Argentina and the UK in Primavera Station and the USA and UK in Taylor Valley.

8.2 *CCAMLR*

EFanta reported on CCAMLR activities that are of interest to GOSEAC. She informed the meeting that CCAMLR endorsed the requirement of its Scientific Committee that she provides a report about GOSEAC matters that might be of interest to CCAMLR for the next meeting, in 1996.

She reported that the Working Group on Ecosystem Monitoring and Management (WG-EMM) had its first meeting in Siena, Italy, from 24 July to 3 August 1995, amalgamating the former Krill and CCAMLR Ecosystem Monitoring Programme (CEMP) groups in one. This is the result of a new trend to consider some of the Antarctic environmental problems from an ecosystem perspective. This was also seen in the way the working groups reported during the Scientific Committee meeting when presentation was by topics, eg status and trends of fisheries, dependent and harvested species, monitoring and management of ecosystems, management under uncertainty, stock size and sustainable production, new and exploratory fisheries, amongst others.

The need for more data and biological information was recognized, and CCAMLR wished to encourage the exchange of information, data bases and communications between other organizations of the Antarctic Treaty system are to be encouraged.

CCAMLR is producing standard Monitoring Methods that could usefully be seen by GOSEAC, as they may be of

interest to the scientific community in general. As a revision of the CEMP methods is necessary, a sub-group was established for its development, with the aim to circulate proposals to all SCAR specialists in seals, birds and the Biology Group for improvement, suggestions and critical comment. A meeting may be organized of all interested parties to consider the development of such a revision.

CCAMLR dedicates considerable efforts to data collection and management, and its sub group on Statistics met in Cambridge, UK, to analyse problems of a transition from qualitative to quantitative assessment, indices calculations and trends.

CCAMLR encouraged the designation of new CEMP sites, in a similar fashion to the requirements of the Treaty and SCAR that more protected areas be proposed.

Concern was expressed about the extensive debris in the seas and on the beaches, as consequence of the fishing activities. All parties make a yearly report about the assessment and avoidance of incidental mortality in the Convention area. For beached marine debris, guidelines were developed for the conduct of surveys, which may be useful to GOSEAC.

E Fanta reported that a booklet in layman's language will be produced, containing information about CCAMLR environmental monitoring and management.

Other information about biological aspects were commented.

She reported on the discussions relating to the examination of the draft management plan for the proposed Admiralty Bay ASMA. As this was the first time that CCAMLR had had to evaluate such a plan, some specific requirements were agreed which would need to be contained in such plans in future, in order to make their assessment by CCAMLR more straightforward. Any future assessment should include an evaluation of whether the proposals adequately:

- i. describe the breeding distribution of seabirds and seals in the area and, at least for colonial breeding species, include points of their entry and departure from the sea;
- ii. note the location of sites where monitoring studies for purposes of direct relevance to CEMP are being undertaken. This is irrespective of whether or not the sites have been formally protected under Conservation Measure 18/XIII;
- iii. ensure protection to research which contributes to the objectives of CCAMLR;
- iv. describe areas in which birds and seals, associated with or breeding in the proposed management area, are known to forage; and
- v. draw to the attention of CCAMLR any other matters which may be relevant to the implementation of Article II of the Convention. This article deals with the objectives of CCAMLR that are the conservation of Antarctic Marine Living resources, being harvesting only con-

ducted in accordance with some provisions that prevent the decrease in the size of any harvested population to levels below those which ensure its stable recruitment, maintenance of the ecological relationship between harvested, dependent and related populations, restoration of depleted populations and prevention of changes or minimization of the risk of changes in the marine ecosystem which are not potentially reversible over two or three decades).

8.3 IUCN

The Antarctic Advisory Committee of IUCN comprises governmental and non-governmental Antarctic experts. IUCN's Antarctic interests include working towards speedy ratification of the Protocol, the negotiation of a liability annex, the Antarctic protected area system, cumulative environmental impacts, environmental management of sub-Antarctic islands, and biodiversity. M De Poorter reported that, because the implementation of the Protocol will require an understanding of cumulative environmental impacts and indications for environmental management, IUCN is organizing a workshop on Minimization and Management of Cumulative Environmental Impacts in Antarctica, in September 1996. The Workshop components will include the identification of factors resulting in cumulative impacts, existing biological and ecological knowledge and gaps identified, how to include cumulative impacts during EIA and monitoring procedures, and requirements for information, reporting and exchange. GOSEAC welcomed this initiative.

8.4 ASOC

M De Poorter introduced the report from ASOC. She noted that ASOC scientists have participated in various meetings of SCAR Groups, and the SCAR/COMNAP monitoring workshops, as well as CCAMLR and the ATCM.

No expeditions to Antarctica were mounted by ASOC member organisations in 1995/96, but Greenpeace International conducted a further series of monitoring investigations at its former base site at Cape Evans, Ross Island. This programme, fully funded by Greenpeace, was carried out with logistic support provided by the New Zealand Antarctic Programme. Preliminary results indicate that the environmental impact was negligible and within the limits predicted in past EIAs. Pending confirmation after final analysis, no further monitoring would be undertaken.

Other aspects mentioned by M De Poorter include ASOC's focus on encouraging remaining Parties to ratify the Protocol and Annex V, on contributing to the discussions on liability, the need for a Treaty Secretariat, ways to facilitate practical implementation of the Protocol, and an increased application of the precautionary principle by CCAMLR. It was mentioned that ASOC is increasingly concerned about the large proportion of tourist activities that it considers to be carried out without proper prior EIA and without adequate attention to cumulative impacts.

9. Any other Business

The Convenor provided a brief description of the establishment of the Antarctic Environmental Officers Network (AEON). An informal meeting was planned for 5 August 1996 in Cambridge. It had been proposed that J M Acero would provide a link between AEON and GOSEAC.

10. Time and Place of Next Meeting

The offer from H Miller to host the next meeting (GOSEAC IX) in Bremerhaven was gratefully confirmed. The meeting was set for 7–12 July 1997. Offers to host future meetings were made by J C A Sayers and M Oehme.

Appendix 1

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Agenda

Opening of the Meeting

1. Adoption of Agenda and appointment of Rapporteurs

2. Membership of the Group

3. Matters arising from GOSEAC VII

4. Report on XX ATCM, Utrecht 1996

4.1 TEWG

4.2 Liability Annex

4.3 Agenda items for XXI ATCM

5. Environmental impact assessments

5.1 Development of checklists for common activities

5.2 Definitions and impact matrices

6. Environmental monitoring

6.1 Report of SCAR/COMNAP workshops

6.2 Antarctic Environmental Specimen Bank and Reference Materials

6.3 State of the Environment Report

6.4 Localized impacts

7. Protected and Managed Areas

7.1 Draft Handbook for the preparation of management plans

7.2 Use of "prohibited" and "restricted"

7.3 Revision of existing SSSI and SPA management plans

7.3.1 Lions Rump. (SSSI No 34).

7.3.2 Western shore of Admiralty Bay. (SSSI No 8).

7.3.3 Canada Glacier, Taylor Valley, Victoria Land. (SSSI No 12).

7.3.4 Beaufort Island, McMurdo Sound, Ross Sea. (SPA No 5).

7.4 New ASPA management plans

7.4.1 Cape Evans, Ross Island

7.4.2 Cape Geology and Botany Bay, Granite Harbour, Victoria Land

7.4.3 Lewis Bay, Mount Erebus, Ross Island

7.5 Possible sites for ASPA designation

7.6 Proposals for management of Dry Valleys

7.7 Management plans for Subantarctic islands

8. Reports

8.1 Relevant SCAR groups

8.2 CCAMLR

8.3 IUCN

8.4 ASOC

9. Any other Business.

10. Time and Place of Next Meeting

SCALOP Survey of Fuels consumed South of 60°S

Summary of Results

Fuel type	Quantity used (litres)			
	Stations	Aircraft	Ships	Total
Marine Fuel Oils	3,820,988	—	50,200,860	54,021,848
Petrols and Gasolines	7,567,255	—	6,240	7,573,495
Aircraft Fuels	12,991,020	11,731,124	190,000	24,912,144
Total	24,379,263	11,731,124	50,397,100	86,507,487

Total Estimated LPG/Propane use at Stations = 60,736 kg

Key findings

- The total volume of fuels (excluding LPG/Propane) consumed South of 60°S by national Antarctic operators during a 12-month period spanning 1994–95 is estimated to be 86.5 million litres.
- Of the 86.5 million litres consumed, 62.4% (54.0 MI) was marine fuel oil, 8.8% (7.6 MI) petrols and gasolines, and 28.8% (24.9 MI) aircraft fuels (for long distance aircraft use and station use such as power generation).
- The principal uses of the fuels consumed 28.2% (24.4 MI) was at stations (including for power generation, vehicles, heating, local aviation and watercraft), 13.6 % (11.7 MI) for long distance aircraft flights and 58.3% (50.4 MI) for shipping.
- The apparently high consumption of aircraft fuels at stations (13.0 MI) compared to aircraft (11.7 MI) results from the standardization on the use of aircraft fuel at McMurdo Station for both aircraft and station use (eg power generation).

SCALOP Survey of Aircraft De-Icing Fluids Used in Antarctica

The survey included 30 national operators; 16 responded that de-icing fluids are not used; 13 did not respond and all but two of these do not use aircraft; one responded as follows:

United Kingdom uses de-icing fluid at Rothera Station:

Typical quantity used per annum	Type/specification of de-icing fluid used	Location where de-icing fluids are used
25 litres	Kilfrost AL34 S1747	hangar and apron;
1,025 litres	Clearway (Runway de-ice)	runway surface

Appendix 4

List of Acronyms and Abbreviations

AEON	Antarctic Environmental Officers Network	GRID	Global Resources Information Database
ASMA	Antarctic Specially Managed Area	GS	Group of Specialists
ASOC	Antarctic and Southern Ocean Coalition	IAATO	International Association of Antarctic Tour Operators
ASPA	Antarctic Specially Protected Area	IEE	Initial Environmental Evaluation
ATCM	Antarctic Treaty Consultative Meeting	INACH	Instituto Antártico Chileno
ATCP	Antarctic Treaty Consultative Party	IUCN	World Conservation Union
BIOTAS	Biology of Terrestrial Antarctic Systems	NGO	Non-Governmental Organization
BIOTEX	BIOTAS Experiment	NZ	New Zealand
CCAMLR	Commission on the Conservation of Antarctic Marine Living Resources	SCALOP	Standing Committee on Antarctic Logistics and Operations
CEE	Comprehensive Environmental Evaluation	SCAR	Scientific Committee on Antarctic Research
CEMP	CCAMLR Ecosystem Monitoring Programme	SPA	Specially Protected Area
CEP	Committee on Environmental Protection	SPRI	Scott Polar Research Institute
CNRS	Centre National de la Recherche Scientifique	SRA	Specially Reserved Area
COMNAP	Council of Managers of National Antarctic Programmes	SSSI	Site of Special Scientific Interest
CS-EASIZ	Coastal and Shelf – Ecology of the Antarctic Sea-Ice Zone	TEWG	Transitional Environmental Working Group
EIA	Environmental Impact Assessment	UBA	German Federal Environment Agency
EMM	Ecosystem Monitoring and Management	UK	United Kingdom
GOSEAC	Group of Specialists on Environmental Affairs and Conservation	UNEP	United Nations Environment Programme
		USA	United States of America
		WG	Working Group

SCAR Report

SCAR Report is an irregular series of publications, started in 1986 to complement *SCAR Bulletin*. Its purpose is to provide SCAR National Committees and other directly involved in the work of SCAR with the full texts of reports of SCAR Working Group and Group of Specialists meetings, that had become too extensive to be published in the *Bulletin*, and with more comprehensive material from Antarctic Treaty meetings.

SCAR Bulletin

SCAR Bulletin, a quarterly publication of the Scientific Committee on Antarctic Research, is published on behalf of SCAR by Polar Publications, at the Scott Polar Research Institute, Cambridge. It carries reports of SCAR meetings, short summaries of SCAR Working Group and Group of Specialists meetings, notes, reviews, and articles, and material from Antarctic Treaty Consultative Meetings, considered to be of interest to a wide readership. Selections are reprinted as part of *Polar Record*, the journal of SPRI, and a Spanish translation is published by Instituto Antártico Argentino, Buenos Aires, Argentina.

Polar Record

Polar Record appears in January, April, July, and October each year. The Editor welcomes articles, notes and reviews of contemporary or historic interest covering the natural sciences, social sciences and humanities in polar and sub-polar regions. Recent topics have included archaeology, biogeography, botany, ecology, geography, geology, glaciology, international law, medicine, human physiology, politics, pollution chemistry, psychology, and zoology.

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The journal may also be used to advertise new books, forthcoming events of polar interest, etc.

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