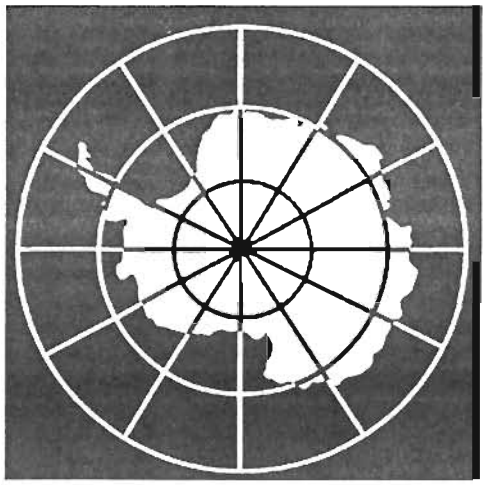


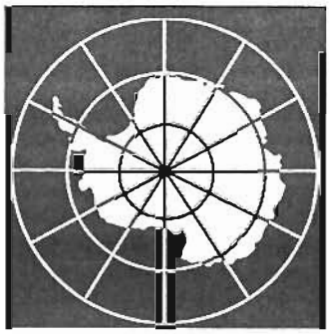
ANTARCTIC TREATY

Final Report of the

Twelfth Antarctic Treaty

Special Consultative Meeting

The Hague, 11-15 September 2000



ANTARCTIC TREATY

Final Report of the

Twelfth Antarctic Treaty

Special Consultative Meeting

The Hague, 11-15 September 2000

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Final Report of the XII Antarctic Treaty Special Consultative Meeting

The Hague, the Netherlands, 11 – 15 September 2000

(1) Pursuant to Article IX of the Antarctic Treaty, Representatives of the Antarctic Treaty Consultative Parties (Argentina, Australia, Belgium, Brazil, Bulgaria, Chile, China, Ecuador, Finland, France, Germany, India, Italy, Japan, the Republic of Korea, the Netherlands, New Zealand, Norway, Peru, Poland, the Russian Federation, South Africa, Spain, Sweden, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Uruguay) met in The Hague, the Netherlands, from 11 September – 15 September 2000 for the purpose of exchanging information, holding consultations, and considering and recommending to their Governments measures in furtherance of the principles and objectives of the Treaty, and more especially of the Environmental Protocol to the Treaty.

(2) The meeting was also attended by representations from the following Antarctic Treaty non-Consultative Parties: Canada, Colombia, Cuba, Czech Republic, Denmark, Greece, Romania, Slovakia, Switzerland, and Ukraine.

(3) In accordance with the Rules of Procedure, Observers and Experts having a technical or scientific interest in Antarctica were present at the Meeting. They are included in the list of participants reproduced in Annex J.

(4) The opening address of the meeting was delivered by Ms. Geke Faber, State Secretary of the Ministry of Agriculture, Nature Management and Fisheries. The State Secretary of the Ministry of Transport, Public Works and Water Management, Ms. Monique de Vries, and the Secretary General of the Ministry of Foreign Affairs, Mr. Frank Majoor, also addressed the Meeting. The addresses are reproduced in Annex G.

(5) Mr. Tom de Bruijn, Director General for European Cooperation at the Ministry of Foreign Affairs, was elected Chairman of the Meeting. Mr. Aldert-Jan van Galen Last was appointed Executive Secretary.

(6) Following previous practice at past Special Antarctic Treaty Consultative Meetings, the opening statements were not delivered at the meeting. Instead, they were provided for inclusion in the Final Report and are attached in Annex G.

(7) The following Agenda was adopted:

1. Opening of the Meeting
2. Election of Officers
3. Adoption of the Agenda
4. Report for the Committee for Environmental Protection
5. Preparations of the XXIV Consultative Meeting
6. Other Business
7. Closing of the Meeting

Item 4: Report of the Committee for Environmental Protection

(8) The Chairman of the Committee for Environmental Protection presented the report of the Committee to the Meeting. The report is included in Annex D.

(9) Concerning the draft CEE presented by Germany with regard to the project for recovering a deep ice core in Dronning Maud Land, Antarctica (XII SATCM/WP1), the Meeting noted the comments made on the CEE in para. 26 to 32 of the CEP Report and endorsed the advice of the CEP that

- In general, the draft CEE was well structured and had provided an appropriate assessment of the impacts of the proposed project; and
- the draft CEE was consistent with the requirements of Annex I of the Protocol.

(10) New Zealand drew particular attention to the comments about the draft CEE in para. 28. These relate to *inter alia*:

- the need to provide more detail on the nature of the drilling fluid to be used, less harmful alternatives to it, and the reasons for leaving the drilling fluid in the borehole on completion of the work;
- the need to make better reference to the experience gained from other drilling projects, in particular the Vostok drilling program;
- greater consideration of alternatives for the construction of the drilling camp;
- further information on the treatment and disposal of wastewater from the drilling camp;
- an improved description of the methodology used to assess the severity of impacts, and the need for more quantitative data on these possible impacts;
- a more complete monitoring program to be included in the CEE; and
- a better description of potential future uses and monitoring of the borehole.

(11) On the advice of the CEP the SATCM adopted Measure 1 (Annex A) on revised management plans for a number of Specially Protected Areas and Sites of Special Scientific Interest.

(12) The Meeting also adopted Measure 2 (Annex A) on the extension of expiry dates for certain Sites of Special Scientific Interest.

(13) Decision 1 (Annex B) confirming the list of entities attending the CEP as observers, was adopted.

(14) The Meeting approved Resolution 1 (Annex C) on Guidelines for Implementation of the Framework for Protected Areas as set forth in Article 3, Annex V of the Environmental Protocol.

(15) The CEP Chairman referred to the value of the use of open-ended contact groups by the CEP, which had worked well during the intersessional period. The Meeting encouraged this practice.

(16) The CEP Chairman referred to para. 5 of the CEP Report and noted that several Non-Consultative Parties had yet to ratify the Protocol.

(17) The Meeting urged these Parties to ratify before the next ATCM and drew attention to Resolution 6 (1999) regarding the importance of ratification by Non-Consultative Parties with Antarctic tourist activities organised in their territories, and also to those Non-Consultative Parties with stations and active programs in the Antarctic.

(18) The CEP Chairman referred to the importance of the attendance at CEP meetings by the Chairman of the SC-CAMLR. The Meeting welcomed his participation.

(19) The CEP Chairman noted that the CEP would be developing practice relating to the status of environmental assesments, and in particular, in which cases IEE's or CEE's were indicated. COMNAP and SCAR had offered to examine this and related questions and provide advice.

(20) The CEP Chairman noted that the CEP had decided to undertake further intersessional work, led by Australia, on diseases of Antarctic wildlife.

(21) The CEP Chairman noted that there would also be established an open-ended intersessional contact group to consider the nature of the special protection afforded by designation as an Antarctic Protected Species.

(22) The CEP Chairman noted the work of the open-ended intersessional contact group on area protection and management coordinated by New Zealand and referred to para. 81 to 90 of the CEP report.

(23) The CEP Chairman also noted that intersessional work would be done on the issue of the collection of Antarctic meteorites, and that this issue may need further legal clarification by the ATCM.

(24) The Meeting endorsed the CEP recommendation in para. 113 of the CEP Report and urged Parties to implement Resolution 6 (1998) fully with respect to COMNAP guidelines on fuel transfer, fuel spill prevention and containment , emergency response action and contingency planning.

(25) The SATCM recognised that CCAMLR was addressing methodologies for considering protected areas with significant marine components and looked forward to early conclusion of this work which would greatly assist the processing of draft management plans for such protected areas. The ATCM asked the Delegation of India as current chair of CCAMLR to convey this view to the Commission.

(26) The SATCM welcomed the news that Argentina had deposited an instrument of ratification of Annex V of the Environment Protocol with the Depositary State and that another State Party had completed the necessary procedures for approval under Article IX of the Antarctic Treaty and would shortly communicate with the Depositary State. The Meeting urged all states who have not done so to complete the necessary approval procedures before the next regular ATCM in accordance with Resolution 8 (1998).

(27) The SATCM welcomed the information from SCAR that the full scoping study for a State of the Antarctic Environment Report will be available at the next ATCM, and noted that New Zealand intended to present the Ross Sea Region State of the Environment Report at the next ATCM.

Item 5: Preparations for the XXIV Consultative Meeting

(28) The Meeting noted with appreciation the information provided by the Russian Delegation that the Government of the Russian Federation is considering a proposal to host the Twenty-Forth Antarctic Treaty Consultative Meeting in St. Petersburg in May, 2001. Delegations invited Russia to consult them on the structure and format of the meeting, including questions related to timing and division of work.

Item 6: Other Business

(29) Australia introduced a draft Resolution on support for CCAMLR and its measures to combat illegal, unregulated and unreported (IUU) fishing, including a Catch Documentation Scheme for Dissostichus SPP (Toothfish).

(30) The Meeting adopted the Resolution (Resolution 2 (2000), Annex C) though some parties requested that in future, more advanced notice should be provided of such worthwhile initiatives.

Item 7: Closing of the Meeting

(31) Delegations thanked the Netherlands for the opportunity to hold informal consultations on other important Antarctic matters, especially those led by Mr. Don MacKay on liability questions.

(32) The draft Final Report of the Meeting was adopted by the Parties on September 15th.

(33) The Twelfth Antarctic Treaty Special Consultative Meeting closed at 16:00 on Friday, September 15th, 2000.

Annex A : Measures adopted at SATCM XII

Measure 1 (2000): Antarctic Protected Areas System: Revised Management Plans for Specially Protected Areas and Sites of Special Scientific Interest.

The Representatives,

Recalling Resolution 1 (1998) allocating responsibility among Consultative Parties for the revision of Management Plans for protected areas;

Recommend to their Governments the following Measure for approval in accordance with paragraph 4 of Article IX of the Antarctic Treaty:

1. That the Management Plan for Specially Protected Area N° 14, attached to this Measure[1], be inserted in the Annex to Recommendation IV-14 to replace the plan previously annexed to that Recommendation.
2. That the Management Plan for Specially Protected Area N° 19, attached to this Measure, be inserted in the Annex to Recommendation XIII-11 to replace the plan previously annexed to that Recommendation.
3. That the Management Plan for Specially Protected Area N° 20, attached to this Measure, be inserted in the Annex to Recommendation XIII-12 to replace the plan previously annexed to that Recommendation, and that thereupon SSSI N° 10, as designated by Recommendation XIII-8, shall cease to exist.
4. That the Management Plan for Site of Special Scientific Interest N° 8, attached to this Measure, be inserted in the Annex to Recommendation X-5 to replace the plan previously annexed to that Recommendation.
5. That the Management Plan for Site of Special Scientific Interest N° 17, attached to this Measure, be inserted in the Annex to Recommendation XIII-8 to replace the plan previously annexed to that Recommendation.
6. That the Management Plan for Site of Special Scientific Interest N° 22, attached to this Measure, be inserted in the Annex to Recommendation XIV-5 to replace the plan previously annexed to that Recommendation.
7. That the Management Plan for Site of Special Scientific Interest N° 34, attached to this Measure, be inserted in the Annex to Recommendation XVI-2 to replace the plan previously annexed to that Recommendation.
8. That the Parties ensure that their nationals comply with the mandatory provisions of the revised management plans.

[1] The management plans are included in Annex E

Measure 2 (2000): Antarctic Protected Areas System. Extension of expiry dates for certain Sites of Special Scientific Interest

The Representatives,

Recalling Recommendations VIII-4, XIII-8, XIV-5, XV-6 and XV-7 adopting the Management Plans for Sites of Special Scientific Interest numbers 1, 2, 3, 16, 20, 21, 24, 25, 26, 27, 28, 29, 31 and 32;

Noting that the expiry date for these sites is 31 December 2000, but wishing to continue to protect these sites, until such time that their respective Management Plans have been revised in accordance with Annex V of the Environmental Protocol;

Recommend to their Governments the following Measure for approval in accordance with paragraph 4 of Article IX of the Antarctic Treaty.

That the date of expiry of the management plans in the list annexed to this Measure be extended until 31 December 2005, and that this Measure be applied provisionally, to the fullest extent possible consistent with their Governments' domestic laws and regulations, pending such approval.

Annex to Measure 2 (2000)

SSSI Number 1	Cape Royds, Ross Island
SSSI Number 2	Arrival Heights, Hut Point Peninsula, Ross Island
SSSI Number 3	Barwick Valley, Victoria Land
SSSI Number 16	North-eastern Bailey Peninsula, Budd Coast
SSSI Number 20	Biscoe Point, Anvers Island
SSSI Number 21	Parts of Deception Island, South Shetland Islands
SSSI Number 24	Summit of Mount Melbourne, Northern Victoria Land
SSSI Number 25	Marine Plain, Mule Peninsula, Vestfold Hills
SSSI Number 26	Chile Bay, (Discovery Bay), Greenwich Island
SSSI Number 27	Port Foster, Deception Island, South Shetland Islands
SSSI Number 28	South Bay, Doumer Island, Palmer Archipelago
SSSI Number 29	Ablation Point-Ganymede Heights, Alexander Island
SSSI Number 31	Mount Flora, Hope Bay, Antarctic Peninsula
SSSI Number 32	Cape Shirreff, Livingstone Island, South Shetland Islands

Annex B: Decisions adopted at SATCM XII

Decision 1 (2000): Observers to the Committee for Environmental Protection

The Representatives,

Acting upon the advice of the Committee for Environmental Protection

Confirmed as observers to the Committee for Environmental Protection according to Rule 4c of the CEP Rules of Procedure the following organisations: ASOC, IAATO, IHO, IUCN, UNEP, and WMO, until such time as the ATCM decides otherwise.

Annex C: Resolutions adopted at SATCM XII

Resolution 1 (2000): Guidelines for Implementation of the Framework for Protected Areas set forth in Article 3, Annex V of the Environmental Protocol

The Representatives,

Noting that Article 3 of Annex V of the Protocol provides a framework for the designation of Antarctic Specially Protected Areas;

Recognising that these Areas must conform to the requirements of Article 3 of Annex V;

Recalling Resolution 2(1998) *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas*;

Conscious of the need for general guidance in the assessment and definition of potential specially protected areas;

Recommend that the "Guidelines for Implementation of the Framework for Protected Areas set forth in Article 3, Annex V of the Environmental Protocol", attached to this Resolution[1], be used by those engaged in the development of proposals for specially protected areas in Antarctica.

[1] The Guidelines are included in Annex F

Resolution 2 (2000): Support for CCAMLR and its Measures to Combat Illegal, Unregulated and Unrestricted Fishing, Including a Catch Documentation Scheme for *Dissostichus* spp. (Toothfish).

The Representatives,

Recalling ATCM XXII Resolution 3 (1999) regarding Support for the Commission for the Conservation of Antarctic Marine Living Resources in its efforts to deal with the problem of illegal, unreported and unregulated fishing in the Convention Area;

Recalling also that the Preamble to the Protocol on Environmental Protection to the Antarctic Treaty (the Madrid Protocol) reaffirms the conservation principles of the Convention on the Conservation of Antarctic Marine Living Resources;

Recognising that the Objective of the Protocol (Article 2) is for Parties to commit themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems;

Noting that the Eighteen Meeting of the Commission to CCAMLR has introduced a Catch Documentation Scheme for *Dissostichus* spp. to identify the origins of *Dissostichus* spp. entering the markets of Contracting Parties and to determine whether *Dissostichus* spp. harvested in the Convention Area were caught in a manner consistent with CCAMLR Conservation Measures; and

Noting further that as part of that Scheme, the Commission invites non-Contracting Parties (to CCAMLR) whose vessels fish for *Dissostichus* spp. to participate in the Catch Documentation Scheme.

Recommend that:

All Parties to the Antarctic Treaty which are not Contracting Parties to CCAMLR and whose flag vessels fish for toothfish, or who are involved in the trade of toothfish, participate in, or comply voluntarily with, the CCAMLR Catch Documentation Scheme for *Dissostichus* spp.

Annex D: Report of the Committee for Environmental Protection

Item 1: Opening of the Meeting

(1) The CEP Chair, Dr. Olav Orheim (Norway), opened the meeting on Monday, 11 September, 2000.

Item 2: Adoption of Agenda

(2) The provisional agenda, as agreed at CEP II and circulated by the Netherlands, was adopted. Altogether 25 Working Papers and 44 Information Papers were considered under the various agenda items (Annex 1 of the CEP Report).

Item 3: Operation of the CEP

(3) The Committee noted that the use of the open-ended intersessional contact groups by the CEP had worked well during the intersessional period. The value of the intersessional contact group process in accelerating the work of the CEP, and the implementation of the Protocol, was recognised. Some Members drew attention to the importance of consistency among the procedures used by the intersessional contact groups set up by the CEP.

(4) Members and Observers were asked to update the addresses of the CEP national contact points (Annex 2 of the CEP Report).

Item 4: Compliance with the Protocol on Environmental Protection

4a) General Matters

(5) Ukraine submitted Information Paper (XII SATCM/IP41) on its adherence to the Protocol on Environmental Protection. The United Kingdom welcomed the efforts being made by Ukraine and asked for information on progress being made by other Non-Consultative Parties to ratify the Protocol. The Czech Republic, Ukraine, Canada and Romania informed the CEP that they are still working to ratify the Protocol. It is hoped that these Parties will ratify the Protocol before the next ATCM. The Committee welcomed this information.

(6) The Committee agreed that Information Papers containing annual reports by Parties regarding compliance with the Protocol would not be discussed unless there were specific questions about any of these.

(7) The following Information Papers giving the annual reports were submitted to the Committee, in accordance with Article 17 of the Protocol: (XII SATCM/IP1), (Germany); (XII SATCM/IP3), (Sweden); (XII SATCM/IP6), (South Africa); (XII SATCM/IP7), (United Kingdom); (XII SATCM/IP9), (Japan); (XII SATCM/IP12), (Norway); (XII SATCM/IP16), (Uruguay); (XII SATCM/IP23), (China); (XII SATCM/IP25), (Russian Federation); (XII SATCM/IP34), (Argentina); (XII SATCM/IP35), (New Zealand); (XII SATCM/IP36) (Bulgaria); and (XII SATCM/IP38) (Finland). Australia and USA noted that they had posted the information under this agenda item on their websites. Romania also submitted Information Paper (XII SATCM/IP2) to the CEP.

(8) New Zealand submitted Information Paper (XII SATCM/IP 15) describing experience with the ISO 14001 Environmental Management system.

(9) ASOC submitted Information Papers: (XII SATCM/IP20) "1999/2000 Southern Ocean Expedition", (XII SATCM/IP21), "Report of the Antarctic and Southern Ocean Coalition", and (XII SATCM/IP22), "An Evaluation of Progress towards Implementation of the Madrid

Protocol". The Committee noted this interesting evaluation in IP22 and looked forward to its updating.

(10) The Committee noted Information Paper (XII SATCM/IP24) on cybercartography, submitted by Canada, reporting developments in computer based techniques for assembly and display of environmental and ecological information in multiple dimensions. Cartographic research groups in Argentina, Brazil, China, and the USA, co-ordinated by Canada and with the co-operation of SCAR, are developing a design for such an "atlas" of Antarctica that could supplement and be of assistance to various information databases presently used and which may also assist the CEP in its work.

(11) IAATO tabled Information Papers (XII SATCM/IP32) and (XII SATCM/IP33) reporting on tourism activities.

(12) Peru introduced Information Paper (XII SATCM/IP37) describing its activities since the adoption of Resolution 4 (ATCM XXIII), to improve co-operation in accordance with Article 6 of the Protocol. Peru thanked the Parties for their comments during the intersessional work and announced that it has opened a web page (*http://www.rree.gob.pe/cooperacion/default/html*) to continue the exchange of opinions for the presentation of a document during the next ATCM.

(13) The Netherlands introduced Information Paper (XII SATCM/IP39) listing IEE's and a CEE prepared by the Parties.

(14) The CCAMLR observer noted that this Information Paper (XX SATCM/IP37) did not indicate whether CCAMLR had been approached in respect of improving co-operation for the protection of the Antarctic Environment. Peru indicated that this would be done.

(15) At CEP II, the Chairman of the Scientific Committee of CCAMLR, attending the CEP as an observer, proposed a reciprocal arrangement whereby a representative of the CEP should attend meetings of the Scientific Committee of CAMLR (SC-CAMLR) as an observer. Dr Tony Press (Australia) represented the CEP at SC-CAMLR XVIII (October 1999).

(16) Dr Press noted that the Report of CCAMLR XVIII had acknowledged formal establishment of a constructive link between SC-CAMLR and the CEP.

(17) The CEP observer to CCAMLR introduced Information Paper (XII SATCM/IP40) which reported on the CCAMLR XVIII and SC-CAMLR XVIII, highlighting the development and implementation of the CCAMLR Catch Documentation Scheme (CDS) for Patagonian Toothfish. This represents a major CCAMLR initiative to address the growing threat of illegal, unregulated and unreported (IUU) fishing to Antarctic ecosystems. The report noted the increase in the krill fishery in recent years and the reduction in by-catch of sea birds in the legal longline fishery due to increased compliance with CCAMLR mitigation measures.

(18) The Committee thanked Dr Press for his report. It noted the great value of measures adopted by CCAMLR to reduce the impacts of IUU fishing on the Antarctic ecosystem, especially the recent implementation of the CDS.

(19) The Committee also noted that marine debris from fishing vessels is an issue that CCAMLR is continuing to address and welcomed a report on this matter from the Commission to its next meeting, especially in relation to compliance with Annex IV of the Protocol.

(20) The SC-CAMLR Chair drew the Committee's attention to the recent multi-national survey aimed at assessing krill stocks in the South West Atlantic (CCAMLR area 48). The results of this survey will provide key data for CCAMLR's review of its precautionary catch limits for krill in the area.

(21) Ukraine tabled Information Paper (XII SATCM/IP43) containing a report on ecological situation at the Ukrainian Antarctic station Vernadsky.

4b) Consideration of Draft CEEs forwarded to the CEP in accordance with paragraph 4 of Article 3 of Annex I of the Protocol

(22) Germany introduced Working Paper (XII SATCM/WP1), containing a draft CEE for recovering a deep ice core in Dronning Maud Land, Antarctica. Germany thanked those Parties that had provided comments on the draft CEE in accordance with Article 3(3) of Annex I of the Protocol.

(23) Germany noted that most Parties had raised two key issues. These related to oil spill response procedures for the drilling project and the materials to be left behind on completion of the drilling operations. With regard to the former, Germany made reference to its Emergency Response Manual that established the necessary procedures for dealing with oil spills. With regard to the latter, Germany quantified the amount of material that would be left *in situ*.

(24) New Zealand introduced Working Paper (XII SATCM/WP24) containing the report of the open-ended intersessional contact group set up to consider the draft CEE. The contact group was established in accordance with the procedures set out in the "Guidelines for the CEP Consideration of CEEs" (Annex 4 to the Final Report of CEP II). The convenor of the group was Dr Peter Barrett from New Zealand.

(25) The report noted that while there were issues that could be further clarified and information that would be useful to include in the final draft, the draft CEE had provided a worthwhile basis for consideration of the project. The main issues raised concerned foreign material to be abandoned at the site (camp construction material and drilling fluid), and documentation for fuel storage, handling and emergency procedures. There were varying opinions in the group as to whether a CEE or an IEE was the appropriate level of EIA for this particular activity.

(26) The Committee thanked New Zealand for acting as convenor of the contact group and congratulated Germany on the preparation of the draft CEE. The Committee considered the draft CEE to be well structured and informative. The draft CEE had examined all the relevant issues and provided a meaningful basis for examining environmental impacts of the project.

(27) The Committee noted that in considering the draft CEE, its role was to examine the adequacy of draft CEEs and to provide advice on draft CEEs to the ATCM. The Committee had no responsibility for the nature or timing of the planned programme, or for approving the CEE. Such actions rested solely with national authorities.

(28) Several members had further comments or questions about the draft CEE. These related to *inter alia*:

- the need to provide more detail on the nature of the drilling fluid to be used, less harmful alternatives to it, and the reasons for leaving the drilling fluid in the borehole on completion of the work;
- the need to make better reference to the experience gained from other drilling projects, in particular the Vostok drilling program;
- greater consideration of alternatives for the construction of the drilling camp;
- further information on the treatment and disposal of wastewater from the drilling camp;
- an improved description of the methodology used to assess the severity of impacts, and the need for more quantitative data on these possible impacts;

- a more complete monitoring program to be included in the CEE; and
- a better description of potential future uses and monitoring of the borehole.

(29) On the issue of the drilling fluid to be used Russia and the UK expressed the view that from their experience the solution proposed was the best possible option available today. Italy described further the physical restrictions which prevented the removal of the drilling fluid from such a deep hole.

(30) Germany thanked the Committee for its comments on the draft CEE and explained the reasons for the chosen camp construction and the chosen drilling fluid. In relation to the latter Germany pointed out that recovery of the borehole fluid on completion of the project had been discussed in the international ice core drilling community. Current best available technology and the physical properties of the ice will not allow recovery of an appreciable amount of the drilling fluid from the hole.

(31) Germany further noted that the remarks made will be taken into account in preparation of the final version of the CEE.

(32) In advising the SATCM on its consideration of the draft CEE, the Committee:

- noted that it had fully considered the draft CEE circulated by Germany;
- noted that the CEP had provided comments at the meeting to Germany on specific elements of the draft CEE;
- considered that, in general, the draft CEE was well structured and had provided an appropriate assessment of the impacts of the proposed project; and
- considered that the draft CEE was consistent with the requirements of Annex I of the Protocol.

(33) The CEP's Advice to the XII SATCM on the draft CEE contained in (XII SATCM/WP1) is attached in Appendix 1.

(34) The Committee also reviewed the procedures established for intersessional examination of draft CEEs. The Committee noted that all comments submitted to the contact group should immediately be forwarded to all members of the contact group.

(35) It was also noted that the terms of reference for contact groups should not be too broad and that an intersessional contact group on a draft CEE is established only when there is a request from one of the Parties. An informal drafting group developed a revised version of the operational procedures for establishing intersessional contact groups for draft CEEs, including generic terms of reference. These were agreed and are reproduced at Annex 3.

4c) Other Matters covered by Annex I (Environmental Impact Assessments)

(36) Germany introduced Working Paper (XII SATCM/WP2) on the exchange of information on the application of Articles 3 and 8, as well as Annex I of the Protocol, pointing out in particular problems regarding different interpretations of terms laid down in Article 3 (2) (b) and in Article 8 (1). The proposal was aimed at the establishment of an intersessional contact group of the licensing agencies responsible for applying the Protocol's provisions in order to exchange information on the reasoning behind national decisions and to increase harmonised interpretation and application of the Protocol.

(37) The Committee welcomed the German Working Paper, acknowledging the value of co-operation in accordance with Article 6 of the Protocol, in sharing information that will help the Parties in their Antarctic activities. Individual Members offered to provide information for Germany, but it was agreed not to set up such a group at this time.

(38) Several members referred to existing requirements for exchanging information on IEEs according to Resolution 6 (1995).

(39) Attention was also drawn to the Guidelines on EIA, adopted under Resolution 1 (1999), which discussed aspects of the interpretation of the terms referred to in (XII SATCM/WP2).

(40) The Committee further welcomed the initiative of COMNAP, contained in Working Paper (XII SATCM/WP22), which proposed an analysis of existing IEEs for two or three specified types of activities with the aim of achieving a better understanding of how the EIA process is being implemented by different operators. COMNAP noted also that it had posted the EIA guidelines on its web site.

(41) The Committee welcomed this information and asked COMNAP to report to CEP IV on the outcome of the analysis.

(42) SCAR presented Information Paper (XII SATCM/IP42) regarding the impacts of acoustic techniques on the marine environment and which proposes a workshop on this issue in early 2001, located in Cambridge, UK.

(43) The Committee welcomed these actions and asked SCAR to report back to the CEP IV meeting on the outcome of the workshop.

(44) The Committee noted with interest the Information Paper from ASOC (XII SATCM/IP10) which elaborates the concept of strategic environmental assessments (SEA). The Committee noted that some aspects of this related to tourism, which is usually dealt with by the ATCM itself.

(45) The Committee agreed that it was appropriate that the issues raised were discussed within the CEP. Several members noted that there was merit in the SEA concept as it related to cumulative environmental impacts. The Committee welcomed information on the results of such efforts. It was agreed that the CEP may wish to consider this further at CEP IV.

(46) COMNAP noted that aspects of the work outlined in its Working Paper (XII SATCM/WP22), in particular consideration of monitoring and EIA at multi-operator sites, are examples of the application of the principles of SEA.

(47) IAATO offered to provide an Information Paper on the work it is undertaking on the issue of cumulative environmental impacts.

(48) New Zealand tabled Information Paper (XII SATCM/IP18) reviewing the scientific drilling project at Cape Roberts in Ross Sea in accordance with ATCM Resolution 1 (1997).

4d) Matters covered by Annex II (Conservation of Antarctic Flora and Fauna)

(49) Australia introduced Working Paper (XII SATCM/WP6) on diseases of Antarctic wildlife. SCAR also introduced Working Paper (XII SATCM/WP20) on this subject which responded to the recommendations in the report from the 1988 Australian workshop on diseases of Antarctic wildlife.

(50) It was noted that there has not yet been a disease outbreak in Antarctic wildlife directly attributed to human activity. However, this should not prevent the Parties from taking a precautionary approach to disease introduction.

(51) It was also stressed that it would be advisable to increase awareness and scientific knowledge about diseases in Antarctic wildlife, aimed at identifying possible risks so that appropriate measures could be taken to prevent them.

(52) The Committee agreed that the work of the intersessional open-ended contact group set up at CEP II should continue, under the leadership of Dr Martin Riddle (*martin.riddle@aad.gov.au*). The following revised Terms of Reference were agreed:

That the contact group prepare an initial report for CEP IV which:

- provides a review of the introduction and spread by human activity of infectious disease causing agents in Antarctica and provides a risk assessment of those activities which may introduce or spread disease causing agents in Antarctica;
- presents practical measures that might be implemented by Parties to diminish the risk to Antarctic wildlife of the introduction and spread by human activity of infectious diseases causing agents; and
- presents practical measures that may be implemented to determine the cause of unusual wildlife mortality and morbidity events in Antarctica and to reduce the likelihood that human activity may exacerbate these events.

(53) COMNAP stated that it would provide operational advice to the intersessional work.

(54) IAATO stated that it was willing to contribute to the intersessional contact group. Others who wished to be part of the group were asked to contact Dr Riddle.

(55) Argentina presented Working Paper (XII SATCM/WP17) which stressed the need to analyse uncertainties regarding the difference in the level of protection between Antarctic native fauna and flora and Specially Protected Species as referred to in Article 3 of Annex II of the Protocol, and proposed the establishment of an intersessional open-ended contact group to work on this issue.

(56) In response to Resolution 2 (1999) SCAR introduced Working Paper (XII SATCM/WP18), providing a review of the list of specially Protected species referred to in Article 3(4) of Annex II of the Protocol and listed in Appendix A to the same annex. SCAR proposed deletion of the fur seal from the list and the addition of five bird species. SCAR supported the view of Argentina that Annex II needs clarification regarding the purpose of setting the criteria for designation, and the extra protection afforded to Specially Protected Species.

(57) The Committee thanked Argentina and SCAR for these papers and noted that Article 8 of Annex II of the Protocol requires Parties to keep under continual review measures for the conservation of Antarctic flora and fauna. It noted also that Article 3 of Annex II needs clarification in relation to the nature of the special protection afforded by designation as an Antarctic Specially Protected Species.

(58) It was agreed to establish an open-ended intersessional contact group under the following Terms of Reference:

The contact group will:

- consider if some Antarctic native species require additional protection by designation beyond that afforded to all native species by the Madrid Protocol, and the reasons for this;
- identify criteria that could be used for assessing a species for inclusion in this category, if additional protection is considered necessary;
- propose practical mechanisms that might be implemented to provide the appropriate level of extra protection; and
- consider if the status of Antarctic Specially Protected Species should be applicable to classes of Antarctic organisms besides birds, mammals, and flora.

(59) The Committee asked Argentina to co-ordinate the contact group, under the leadership of José M. Acero (*jmacero@abaconet.com.ar*). Those interested in participating should contact him directly by email.

(60) The contact group was asked to provide a progress report of its work to CEP IV and a final report to CEP V.

(61) The Committee accordingly decided not to consider the revisions proposed in the SCAR Working Paper until the criteria have been reviewed, and to revisit the question of amendments to the list when the contact group report has been considered.

(62) Russia introduced Information Paper (XII SATCM/IP26) on a fauna inventory in the Mirny Station area.

4e) Matters covered by Annex III (Waste Disposal and Waste Management)

(63) Germany introduced Information Paper (XII SATCM/IP4) on preparation of an inventory of locations of past scientific activities in Antarctica, and demonstrated its capabilities and potential uses during a special visual presentation. The Committee saw value in this approach and thanked Germany for its presentation.

(64) Uruguay tabled Information Paper (XII SATCM/IP17) on the removal of waste of unknown origin in the vicinity of its ECARE station on the Antarctic Peninsula.

(65) Russia introduced Information Papers (XII SATCM/IP29), (XII SATCM/IP30), (XII SATCM/IP31) on waste disposal and clean up actions at its stations.

4f) Matters covered by Annex IV (Prevention of Marine Pollution)

(66) The Committee noted the report from the International Hydrographic Organisation presented in Information Paper (XII SATCM/IP5).

4g) Matters covered by Annex V (Area Protection and Management)

(67) The USA, as Depository Government for the Antarctic Treaty and its Protocol, reported that Argentina had deposited an instrument of ratification to Annex V. Four Consultative Parties have taken no action with respect to Annex V. Ecuador, India and the Russian Federation all indicated that they expected that Annex V would be ratified before the next ATCM. Poland informed the CEP that they had approved Recommendation XVI-10, but that apparently, for technical reasons, this was not yet on the register of the Depository Government.

(68) The United Kingdom introduced Working Paper (XII SATCM/WP3) containing revised management plans for Specially Protected Areas No. 14, Lynch Island, South Orkney Islands and No. 19, Lagotellerie Island, Marguerite Bay, Graham Land.

(69) Australia presented Working Paper (XII SATCM/WP7) containing a revised management plan for Site of Special Scientific Interest No. 17, Clark Peninsula.

(70) Poland introduced Working Paper (XII SATCM/WP9) containing a revised management plan for Site of Special Scientific Interest No. 8, Western Shore of Admiralty Bay, King George Island, South Shetland Islands and Working Paper (XII SATCM/WP10) containing a revised management plan for Site of Special Scientific Interest No. 34, Lions Rump, King George Island, South Shetland Islands.

(71) Japan presented Working Paper (XII SATCM/WP14) containing a revised management plan for Site of Special Scientific Interest No. 22, Yukidori Valley, Langhovde, Lützow-Holm Bay.

(72) New Zealand introduced Working Paper (XII SATCM/WP21) containing a draft management plan for Specially Protected Area No. 20, New College Valley, Cape Bird, Ross Island, which also incorporated SSSI No. 10.

(73) A number of comments were raised and incorporated in the revised texts of the management plans. The Committee thanked the above members for their respective papers and agreed to recommend that Measure 1 (2000) regarding these management plans be adopted by the XII SATCM (Appendix 2 of the CEP Report, now in Annex A and E).

(74) Several members also presented Working Papers proposing extensions of the expiry dates of Sites of Special Scientific Interest: Working Paper (XII SATCM/WP8), (Australia) on the extension of expiry dates for the management plans of SSSIs No. 25 (Marine Plain) and No. 16 (North Eastern Bailey Peninsula); Working Paper (XII SATCM/WP23), (New Zealand) on SSSI No. 24 (Summit of Mt Melbourne, North Victoria Land); and Working Paper (XII SATCM/WP25), (United Kingdom) regarding extension of expiry dates for SSSIs No. 21(Parts of Deception Island, South Shetland Islands), No. 29 (Ablation Point-Ganymede Heights, Alexander Island) and No. 31 (Mount Flora, Hope Bay, Antarctic Peninsula).

(75) The Committee thanked these Members for their Papers. The Committee agreed that each of the sites in question deserved continued protection until such time as their management plans could be revised in accordance with Annex V of the Protocol. The Committee recognised that there were other Management Plans for SSSIs that were about to expire. The Committee proposed a five year extension of the expiry dates for all these Management Plans and asked that Measure 2 (2000) be adopted by the XII SATCM (Appendix 3 of the CEP Report, now in Annex A).

(76) The United Kingdom introduced Working Paper (XII SATCM/WP4) on Historic Site and Monument No. 74 (HSM 74), the wreckage of a wooden sailing vessel, South-West Coast of Elephant Island, South Shetland Islands. The UK noted that the initial designation of the site had included a large section of the coastline of Elephant Island. On the basis of improved knowledge about the wreckage, the UK paper provided three options for HSM 74: continue with the existing designation, reduce the area of the site, or remove the site from the list.

(77) The United Kingdom also raised the more generic issue of regularly reviewing the list of Historic Sites and Monuments, in particular to remove any sites that no longer exist.

(78) The Committee thanked the United Kingdom for its paper. On the generic issue of reviewing the list of Historic Sites or Monuments, the Committee agreed that the list should only contain sites that exist. It was also suggested that there was a need for criteria for determining which site or monument to include or retain on the list.

(79) It was noted that changes to the list of Historic Sites or Monuments may require changes in domestic legislation. It was therefore agreed that changes to the list, including any changes to HSM No. 74, would be more appropriately considered collectively after a general review.

(80) The Committee urged Members to individually review the list of Historic Sites or Monuments within their operational area. Where it was known that sites no longer exist members were asked to provide the information to CEP IV. The information should also be transmitted to the UK contact point Dr Neil Gilbert (*prs.fco@gtnet.gov.uk*) who undertook to prepare a Paper on this issue for CEP IV.

(81) New Zealand introduced Working Paper (XII SATCM/WP11) that addressed part (a) of the terms of reference (CEP II Report Para 80) of the intersessional contact group on protected areas to develop guidelines for:

- implementation of the framework for protected areas set forth in Article 3 of Annex V, drawing on the conceptual scheme in Recommendation 1 of Working Paper 37; and
- ways to apply the concepts of environmental risk, quality and feasibility for identifying, selecting and proposing protected areas.

(82) The paper contained proposed "Guidelines for Implementation of Article 3, Annex V of the Environmental Protocol – Antarctic Specially Protected Areas". New Zealand noted that the guidelines are intended to assist the Parties, SCAR, COMNAP, CCAMLR and the CEP in the assessment and definition of Antarctic Specially Protected Areas.

(83) The Committee thanked New Zealand for their very valuable and constructive work in co-ordinating the contact group. Several corrections were proposed which were incorporated in the revised version of the guidelines. COMNAP offered to post these guidelines on their website: www.comnap.aq. The Committee asked that the SATCM approve Resolution 1 (2000) containing these guidelines (Appendix 4 of the CEP Report, now in Annex C and F).

(84) New Zealand introduced Working Paper (XII SATCM/WP12) referring to part (b) of the terms of reference of the intersessional contact group. This considered further ways that the CEP might most effectively develop advice on proposed and revised management plans for Specially Protected Areas and the means by which Management Plans could be monitored. The paper contained a suggestion to utilise open-ended intersessional contact groups as a mechanism for assessing draft Management Plans in advance of each CEP meeting so as to prepare advice on the draft plans for the CEP.

(85) The Committee discussed whether one contact group should be established to revise all Management Plans or each of them should be considered by a separate group. It was agreed that separate open-ended intersessional working groups would be the best way of considering draft Management Plans. The proponent of the plan would normally act as convenor of the group. SCAR, COMNAP and CCAMLR confirmed their willingness to take part in such intersessional work. The Committee agreed to procedures to be followed when a draft management plan is submitted to the Committee. These are attached in Annex 4 of the CEP Report.

(86) New Zealand introduced Working Paper (XXII SATCM/WP13) which addressed part (c) of the terms of reference of the intersessional contact group. This tasked the group with considering the need for further elaboration of an Antarctic conservation strategy.

(87) The contact group concluded that further elaboration of an Antarctic conservation strategy is not needed at present, given the provisions of the Environmental Protocol and its five annexes.

(88) The Committee noted that, in its consideration of this matter, several other issues were raised and deserve further consideration. These included: the need to better understand the reasons for different approaches to implementing the Protocol; environmental monitoring; management of cumulative effects; managing of "novel" or emerging activities; the need to fully implement the protected area system in Antarctica, and the use of Antarctic Specially Managed Areas (ASMAs) where the activities of different parties occurred at the same site.

(89) The Committee endorsed the conclusion of the contact group that further elaboration of an Antarctic conservation strategy is not needed at present.

(90) In carrying out its work the contact group had prepared a complete list of the recommendations stemming from various protected areas workshops held by SCAR, Antarctic Treaty Parties and IUCN from 1992 until 1999, and the extent to which these had been implemented. It was agreed to append this Table 1 as Annex 5 to the CEP report, and to address this useful work in the future.

(91) New Zealand introduced Working Paper (XII SATCM/WP15) updating the Committee on its proposal for a Balleny Islands Specially Protected Area and highlighted its concerns with the process for designation of protected areas with a significant marine component under Article 6 of Annex V of the Protocol. A preliminary proposal had been tabled at CEP II and had been referred to SCAR, as well as CCAMLR for consideration in accordance with Decision 4 (1998)

which provides criteria for the provision of draft management plans with marine components to CCAMLR.

(92) New Zealand noted that the CCAMLR Commission had tasked its Scientific Committee and CCAMLR Working Group on Ecosystem Monitoring and Management (WG-EMM) with assessing the proposal during the 1999/2000 intersessional period.

(93) The recent meeting of WG-EMM had supported the scientific validity of creating the specially protected area around the Balleny Islands and had noted that the area was an outstanding representation of both marine and terrestrial biodiversity. The WG-EMM suggested that the boundary be adjusted to include the Balleny Seamount as it is likely to provide an important habitat for fish species and other associated biota.

(94) New Zealand reiterated that the protected area provisions of the Protocol allow for protection of both terrestrial and marine areas and that areas with a significant marine component cannot be designated without prior approval of CCAMLR (Protocol Article 6(2)). New Zealand proposed that the CEP ask the ATCM to encourage the CCAMLR Commission in its work on the development of a clear process for assessment and approval of marine protected areas under Annex V of the Protocol. The UK noted its concerns regarding this proposal.

(95) The observer from CCAMLR indicated that work was underway within CCAMLR to develop methodologies for its consideration of marine protected areas and how these could be developed to meet CCAMLR needs. This matter is still to be considered by the CCAMLR Scientific Committee and the Commission at the forthcoming meeting in late October 2000.

(96) The Committee recognised the value of a dialogue between the ATCM and CCAMLR with respect to review of proposals for potential marine protected areas.

(97) The need for close liaison with CCAMLR where appropriate was noted in the report of CEP II (paragraphs 13 and 14). This goes beyond marine protected areas and may include some real or perceived differences with definitions, for example, understanding the term of 'conservation'. Close co-ordination between the ATCM, the CEP and CCAMLR is needed to ensure harmonisation of measures aimed at conserving Antarctic marine living resources and protecting the Antarctic environment.

(98) New Zealand introduced Working Paper (XII SATCM/WP16), "Systematic Environmental Geographic Framework for Protected Areas under Annex V of the Environmental Protocol" and noted that this issue had been raised and discussed in the intersessional contact group on protected areas. The phrase 'systematic environmental geographic framework' is not defined in the Protocol and there is no such agreed framework. New Zealand further noted that a systematic approach to protected areas could help the CEP take a broader, more comprehensive and long term perspective on protected areas in Antarctica including incorporation of aspects such as priority areas and representativeness.

(99) The Committee noted that this was a complex issue that needed further thought and welcomed New Zealand's intention to continue its work with assistance from SCAR and others who may wish to contribute.

(100) SCAR introduced Working Paper (XII SATCM/WP19) on Antarctic Meteorites. SCAR expressed serious concerns regarding the potential for unrestricted collection of Antarctic meteorites by private expeditions. The SCAR delegates had agreed a recommendation to this effect at its recent meeting.

(101) The Committee supported the views expressed in the SCAR paper and noted that taking meteorites may constitute a violation of Article 3(2)(VI) of the Protocol in so far as it might lead to the degradation of, or substantial risk to areas of scientific significance. Some

Members suggested that collection of Antarctic meteorites might also be in violation of Article 7 of the Protocol. It was agreed that these were issues that needed legal clarification.

(102) The Committee gratefully accepted New Zealand's offer to study further the issues connected with the collection of meteorites. SCAR offered to participate in this process, and gather further scientific information. New Zealand was requested to report on the results of the study at CEP IV.

(103) Information Paper (XXII SATCM/IP8) was jointly submitted to the CEP by Argentina, Chile, Norway, Spain and UK, concerning the future management of the Deception Island.

(104) Argentina expressed the view that the creation of an ASMA on Deception Island is a very interesting co-operative project. However, at this stage, Argentina considers that it requires a pause for further thought.

Item 5: Environmental Monitoring

(105) COMNAP presented Working Paper (XII SATCM/WP22) updating the CEP on the work of COMNAP/SCAR on environmental monitoring and environmental impact assessment since CEP II. COMNAP/SCAR have published an Environmental Monitoring Handbook and CD-ROM version of this was circulated to each delegation. The handbook provides techniques for physical and chemical monitoring of station environmental impacts. COMNAP are now developing guidelines for designing environmental monitoring programmes at research stations. Other monitoring issues identified by COMNAP include:

- monitoring activities and the exchange of information at multiple operator sites, and
- co-ordination of monitoring data between operators.

(106) The observer from CCAMLR drew the Committee's attention to the work of the CCAMLR Ecosystem Monitoring Program (CEMP). This programme monitors the status of selected species at various localities and in various habitats around the Antarctic south of the polar front. It documents population changes in these species with time in relation to biological and environmental variability. As such CEMP data give an indication of the "Ecosystem Health". By now there is about sixteen years of data available which provides useful benchmarks for CCAMLR management decisions.

(107) The Committee noted this information with interest and indicated that the existence of CEMP data again illustrated the need for close liaison between the CEP and CCAMLR.

(108) Information Paper (XXII SATCM/IP13) "Environmental Radioactivity and Biomonitoring" was submitted to the Committee by SCAR. Peru informed the Committee that it was continuing its studies on this subject. Two more Information Papers concerning monitoring issues were submitted to the Committee: (XXII SATCM/IP27) and (XXII SATCM/IP28) from the Russian Federation regarding monitoring of the radiation conditions and chemical environmental parameters in the areas of Russian Antarctic Stations.

Item 6: State of the Antarctic Environment Report

(109) SCAR presented Information Paper (XII SATCM/IP14) updating the Committee on the Scoping Study for a State of the Antarctic Environment Report that it had been tasked to produce. Sweden requested more information on progress in this respect. SCAR announced that the full Scoping Study would be available at the CEP IV.

(110) New Zealand introduced Information Paper (XII SATCM/IP19) on the Ross Sea Region State of the Environment Report – An Update on Progress. Sweden thanked New Zealand for this valuable work.

Item 7: Emergency Response and Contingency Planning

(111) COMNAP presented Working Papers (XII SATCM/WP5) on its assessment of environmental emergencies arising from activities in Antarctica.

(112) The paper identified that fuel spills are the most common incidents with the greatest potential to cause environmental impacts. Most reported spills have been small and confined to a station or base or the adjoining waters. Further fuel spills in the marine environment are the least likely to occur but pose the greatest risk to wildlife.

(113) The Committee thanked COMNAP for this informative paper and agreed that it provides a valuable contribution to the consideration of human impacts in Antarctica. The Committee recommended that the SATCM urge Parties to fully implement Resolution 6 (1998) with respect to COMNAP guidelines on fuel transfer, fuel spill prevention and containment, emergency response action and contingency planning.

(114) IAATO presented Information Paper (XII SATCM/IP11) on assessment of environmental emergencies arising from tourism activities in Antarctica.

(115) The committee welcomed the IAATO Information Paper. COMNAP and IAATO were urged to continue recording environmental emergencies and to report this information periodically to the CEP.

Item 8: Data and Exchange of Information

(116) The Chair observed that this was an important item with many aspects, and that the XXIII ATCM had started work on the issue. The Committee decided to return to this item at CEP IV. It was agreed to request the CCAMLR secretariat to provide a paper for CEP IV on their experience with data management including consideration of annual reports.

Item 9: Election of Officers

(117) In accordance with Rules 16 and 20 of Rules of Procedure of the CEP, Dr. Olav Orheim was re-elected as the Chair of the CEP.

Item 10: Preparation for CEP IV

(118) The Committee agreed that the agenda of CEP III should also be the agenda of CEP IV. It was noted that in an effort to avoid duplication it would be expedient to subdivide agenda item 8 Data and Exchange of Information into two sub-items:

(8a) General matters and

(8b) Co-operation with other organisations in accordance with Article 11 of the Protocol.

This change would ensure that general co-operation with the organisations identified in Article 11 and not addressed elsewhere in CEP agenda could be consolidated. The SATCM was asked to approve the provisional Draft Agenda for CEP IV reproduced as Appendix 5(now in Annex M).

(119) The Committee asked the SATCM to confirm the following organisations as observers to CEP IV according to 4c Rule of Procedure: ASOC, IAATO, IHO, IUCN, UNEP and WMO. See decision 1 in Annex B.

Item 11: Adoption of the Report

(120) The Draft Report was adopted by the Members.

Item 12: Closing of the Meeting

(121) The Chairperson Dr. Olav Orheim closed the Meeting, at the same time expressing the Committee's great gratitude to the work of the rapporteurs, the secretariat and the interpreters. He further thanked the Netherlands Government for the excellent facilities and support that had been provided.

CEP Report Annex 1: Agenda and Final List of Documents

Item 1: Opening of the meeting

Item 2: Adoption of the Agenda

Item 3: Operation of the CEP

Item 4: Compliance with the Protocol on Environmental Protection

4 a) General matters

Paper No.	Title	Submitted by
IP 1	Annual Report of the Federal Republic of Germany pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Germany
IP 2	The tourism and the Antarctic environment, two components of the modern civilization	Romania
IP 3	Annual Report under the Protocol on Environmental Protection to the Antarctic Treaty, Sweden	Sweden
IP 6	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	South Africa
IP 7	Implementation of the Protocol on Environmental Protection to the Antarctic Treaty	United Kingdom
IP 9	Annual Report under the Protocol on Environmental Protection to the Antarctic Treaty	Japan
IP 12	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Norway
IP 15	ISO 14001 Environmental Management System – The New Zealand Antarctic Institute Experience	New Zealand
IP 16	Informe Anual de acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente, Uruguay	Uruguay
IP 21	Report of the Antarctic and Southern Ocean Coalition (ASOC)	ASOC
IP 22	An Evaluation of Progress towards Implementation of the Madrid Protocol	ASOC
IP 23	Chinese Antarctic Environmental Report – 1999/2000	China
IP 24	A Cybercartographic Atlas of Antarctica	Canada
IP 25	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Russian Federation
IP32	Report of the International Association of Antarctica Tour Operators	IAATO
IP33	Overview of Antarctic Tourism	IAATO
IP34	Implementación del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente por parte del Programa Antártico Argentino. Período 1999-2000.	Argentina
IP35	Implementation of the Protocol on Environmental Protection to the Antarctic Treaty	New Zealand
IP36	Report of the Republic of Bulgaria pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Bulgaria
IP37	Advancement in Peru's Commitments Undertaken pursuant to Resolution 4 (ATCM XXIII) on the Treatment of the following subject: Co-operation between the Parties in accordance with article 6 of the Protocol to the Antarctic Treaty on Environmental Protection	Peru
IP38	Annual Report Pursuant to the Enviromental Protocol to the Antarctic Treaty	Finland
IP39	List of Initial and Comprehensive Environmental Evaluations prepared by State Parties to the Environmental Protocol	Netherlands
IP40	Report of the CEP Observer to CCAMLR XVIII and SC-CAMLR XVIII 25 October to 5 November 1999	Australia
IP41	On the adherence to the Protocol on Environmental Protection to the Antarctic Treaty by Ukraine	Ukraine
IP43	The report on an ecological situation at the Ukrainian Antarctic station Akademik Vernadsky., 1996-2000	Ukraine

4 b) Consideration of Draft CEEs forwarded to the CEP in accordance with paragraph 4 of Article 3 of Annex I of the Protocol.

Paper No.	Title	Submitted by
WP 1	Draft Comprehensive Environmental Impact Evaluation for Recovering a Deep Ice Core in Dronning Maud Land, Antarctica	Germany
WP 24	Report of the Contact Group of the Committeee for Environmental Protection to Consider the Draft Comprehensive Environmental Evaluation for recovering a deep ice core in Dronning Maud Land, Antarctica	New Zealand

4c) Others Matters covered by Annex I (Environmental Impact Assessments)

Paper No.	Title	Submitted by
WP 2	Exchange of information on the application of Articles 3 and 8 as well as Annex I of the Protocol	Germany
WP 22 (also AI 5)	Recent Monitoring and EIA initiatives	SCAR/COMNAP
IP 10	Antarctic Strategic Environmental Assessment: Application to the growing Antarctic tourism industry	ASOC
IP 18	Follow-up to Final Comprehensive Evaluation (CEE) – Antarctic Stratigraphic Drilling East of Cape Roberts in Southwest Ross Sea, Antarctica	New Zealand
IP 20	Greenpeace 1999/2000 Southern Ocean Expedition: Initial Environmental Evaluation	ASOC
IP42	Impacts of Acoustic Techniques in the Marine Environment	SCAR

4d) Matters covered by Annex II (Conservation of Antarctic Flora and Fauna)

Paper No.	Title	Submitted by
WP 6	Diseases of Antarctic Wildlife	Australia
WP 17	Considerations about the protection of native Antarctic flora and fauna	Argentina
WP 18	Specially protected species	SCAR
WP 20	Wildlife diseases	SCAR/COMNAP
IP26	Fauna Inventory of the Site of Special Scientific Interest 7 "Haswell Island" (Mirny station area)	Russian Federation

4e) Matters covered by Annex III (Waste Disposal and waste management)

Paper No.	Title	Submitted by
IP 4	Inventory of Location of Past Scientific Activities of Germany in Antarctica – ongoing studies	Germany
IP 17	Limpieza de Sitios Terrestres de Eliminación de Residuos y Sitios de Trabajo en E.C.A.R.E., en conformidad con el Anexo III, Artículo 1, Párrafo 5, del Protocolo sobre Protección del Medio Ambiente	Uruguay
IP29	Environmental protection activities at the Russian Antarctic station Bellingshausen	Russian Federation
IP30	Environmental protection activities at the Russian Antarctic station Molodezhnaya	Russian Federation
IP31	Environmental protection activities at the Russian Antarctic station Progress in 1999-2000	Russian Federation

4f) Matters covered by Annex IV (Prevention of Marine Pollution)

Paper No.	Title	Submitted by
IP 5	Prevention of Marine Pollution	IHO

4g) Matters covered by Annex V (Area protection and management)

Paper No.	Title	Submitted by
WP 3	Antarctic Protected Areas System: Revised Management Plans for Specially Protected Area No. 14 Lynch Island, South Orkney Islands and for Specially Protected Area No. 19 Lagotellerie Island, Marguerite Bay, Graham Land	United Kingdom

WP 4	Historic Sites and Monuments: Sailing vessel wreckage, south-west coast of Elephant Island, South Shetland Islands	United Kingdom
WP 7	Antarctic Protected Areas System: Revised Management Plan for Clark Peninsula, Site of Special Scientific Interest No. 17	Australia
WP 8	Antarctic Protected Areas System: Extension of expiry dates for management plans for Sites of Special Scientific Interest No. 25 (Marine Plain) and No. 16 (North-Eastern Bailey Peninsula)	Australia
WP 9	Management Plan for Site of Special Scientific Interest No. 8	Poland
WP 10	Management Plan for Site of Special Scientific Interest No. 34	Poland
WP 11	Report on the open ended intersessional contact group on protected areas: Terms of Reference (a) – development of guidelines for protected areas	New Zealand
WP 12	Report on the open ended intersessional contact group on protected areas: Terms of Reference (b) – Advice on management plans	New Zealand
WP 13	Report on the open ended intersessional contact group on protected areas: Terms of Reference (c) – Consideration of the need for further elaboration of an Antarctic Conservation Strategy	New Zealand
WP 14	Antarctic Protected Areas System: Revised Management Plan for Site of Special Scientific Interest No. 22 Yukidori Valley, Langhovde, Lützow-Holm Bay	Japan
WP 15	Update on Proposal for a Balleny Islands Specially Protected Area	New Zealand
WP 16	Systematic Environmental Framework for Protected Areas Under Annex V of the Environmental Protocol	New Zealand
WP 19	Antarctic Meteorites	SCAR
WP 21	Draft Management Plan for Specially Protected Area No. 20 – New College Valley, Cape Bird, Ross Island	New Zealand
WP 23	Extension of Expiry Date for Designation of Site of Scientific Interest No. 24, Summit of Mt Melbourne, North Victoria Land	New Zealand
WP 25	Extension of Expiry Dates for Sites of Special Scientific Interest	The United Kingdom
IP 8	Deception Island – Future Management	Argentina, Chile, Norway, Spain and UK

Item 5: Environmental Monitoring

Paper No.	Title	Submitted by
WP 22 (also AI 4c)	Recent Monitoring and EIA initiatives	SCAR/COMNAP
IP 13	Environmental Radioactivity and biomonitoring	SCAR
IP27	Monitoring of the radiation conditions in the areas of Russian Antarctic stations	Russian Federation
IP28	Monitoring of chemical environmental parameters in the areas of Russian Antarctic stations	Russian Federation

Item 6: State of the Antarctic Environment Report

Paper No.	Title	Submitted by
IP 14	Scoping Study for A State of the Antarctic Environment Report	SCAR
IP 19	Ross Sea Region State of the Environment Report – An update on progress	New Zealand

Item 7: Emergency Response and Contingency Planning

Paper No.	Title	Submitted by
WP 5	Revised working paper on an assessment of environmental emergencies arising from activities in Antarctica	COMNAP
IP 11	An assessment of Environmental Emergencies arising from Activities in Antarctica	IAATO

Item 8: Data and Exchange of Information

Item 9: Election of Officers

Item 10: Preparation for CEP IV

Item 11: Adoption of the Report

Item 12: Closing of the Meeting

CEP Report Annex 2: Addresses of the national contact points

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CEP Report Annex 3: Operational procedures for establishing intersessional contact groups for consideration of draft CEES

Note: these operational procedures do not replace the over-riding Guidelines for the CEP's Handling of CEEs, as set out in Annex 4 of the Final Report of CEP II. These procedures are only intended to provide practical guidance on the implementation of the Guidelines.

1. At the same time a Draft CEE is circulated to Members via diplomatic channels, the proposer should notify the CEP Chair preferably by e-mail that a Draft CEE has been circulated, and indicate, if available, the web address on which the report can be accessed.
2. The originator of a Draft CEE should post it on its web site in the language(s) it is made available in. Links to this web site will be established on the CEP web site. If the proposer does not have a web site on which it is able to post the Draft CEE, an electronic version of the report, if available, should be forwarded to the Chair of the CEP who will immediately post it on the CEP web site.
3. The CEP Chair notifies the CEP contact points that the Draft CEE is available and of its web address. The notification should include the comment that any Party that wants CEP to consider an issue or issues concerning the draft CEE should notify the CEP Chair as soon as possible.
4. A Party that indicated that it wants the CEP to consider a draft CEE should as soon as possible indicate the issue(s) it wants examined, propose Terms of Reference (ToR) and propose their member of an open ended intersessional contact group.
5. On such notification the CEP Chair will immediately inform all contact points and indicate that an open ended intersessional contact group has been proposed. The CEP Chair will at this time suggest a convenor for the group, suggest a set of ToRs and ask for nominations of members to the group.
6. The convenor of the open ended "Contact Group" could be the person proposed by a Party requesting an issue to be considered. It should preferably not be from the Party proposing the draft CEE. The notification to the members should have a time limit of 15 days for them to object or offer comments, suggestions or proposals concerning:
    i. the proposed convenor
    ii. the proposed terms of reference, which should include, *inter alia*, the following generic issues:
        - The extent to which the CEE conforms to the requirements of Article 3 of Annex I of the Environmental Protocol.
        - Whether the conclusions of the draft CEE are adequately supported by the information contained within the document.
        - The clarity, format and presentation of the draft CEE.

    If the Chair does not receive a reply within 15 days it will be considered that the Member agrees to the establishment of the group, the proposed convenor and the proposed ToRs.

    If the chair receives objections or comments to i) or ii) listed above within the 15 day limit the Chair shall as appropriate circulate a revised suggestion for one or both items. The 15 day limit applies for Members to respond.
7. If more than one Member proposes issues to be considered by the CEP, the ToRs should be amended to reflect the additional issues at the time such issues are raised. There should be a reasonable flexibility in the ToRs to allow for consideration of related

technical issues that arise in the work of the contact group. All comments submitted for the contact group should be immediately forwarded to all members of the contact group.

8. The right of a Party to raise an issue on a Draft CEE at the CEP or ATCM is not affected by its action in relation to the establishment - or non-establishment - of an open-ended intersessional contact group.

9. Hereafter the procedures follow items 5, 7, 8, 9 and 10 of the Guidelines for CEP Considerations of Draft CEEs (Annex 4 to the final report of CEP II). Item 6 is also handled by the convenor.

CEP Report Annex 4: Guidelines for CEP Consideration of New and Revised Draft Management Plans for Protected Areas

1. Draft management plans (new or revised) shall be submitted by the proponent to the CEP meeting for consideration.
2. At its meeting, the CEP shall establish, as needed, in accordance with Rule 9 of its Rules of Procedure, an open ended intersessional contact group to consider each draft management plan received.
3. A coordinator for each contact group shall be appointed by the CEP and should normally be from the Party proposing the draft management plan.
4. The contact group(s) shall operate in accordance with the guidelines noted in paragraph 9 of the report of CEP I.
5. In considering a draft management plan, contact groups shall examine the content, clarity, consistency and likely effectiveness of the draft management plan and should take into account the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas* (Resolution 2(1998)).
6. The outcome of each contact group's deliberations, including any recommendations, shall be reported to the next CEP meeting by the coordinator.

CEP Report Annex 5 : Summary of Recommendations of main Antarctic Protected Area (PA) Workshops held by SCAR, Antarctic Treaty Parties and IUCN

Implementation and other comments made by intersessional contacts are noted in italics, including whether the recommendation is directly relevant to the terms of reference (TOR) for this contact group.

SCAR/IUCN Workshop, Cambridge, 29 June – 2 July 1992 (Lewis and others 1992)

	Recommendation	Implementation (question marks indicate uncertainties)
1.	Ratification of Protocol and Annexes.	All ratified. Annex V not yet in force. *Further work outside scope of TOR*
2.	CEP rules of procedure to include development of PA system.	Rules implemented. *Recommendation overtaken. Further work outside scope of TOR.*
3.	Encourage proposals for new PA to achieve adequate geographical and comprehensive environmental representation.	Some new emphasis on protecting a wider range of values but representation is still biased (at least geographically). *Further work outside scope of TOR but it is hoped that guidelines under TOR (a) will encourage proposals.*
4.	SCAR to continue to receive and evaluate PA proposals in the form of draft management plans and advise CEP/ATCM.	Implemented. *Implicit in TOR (b).*
5.	PA proposals should not be rejected because of insufficient knowledge provided sufficient detail (and draft management plan) are included.	Implemented but not accepted throughout Treaty system? *Further work outside scope of TOR.*
6.	SCAR should utilise revised 1977 ecosystem classification system as the environmental – geographic framework (Annex V) until an improved and agreed system, including comprehensive assessment criteria (e.g. wilderness, aesthetic), is adopted by an ATCM.	Did SCAR utilise it? An improved environmental – geographic framework is not yet agreed. *Relevant to TOR (a). Classification matrix found helpful but not sufficient at Tromso and Peru workshops.*
7.	SCAR and IUCN to continue to advise on PA, planning and design, research to enhance protection and distribution of a SCAR handbook on preparation of management plans.	Collaboration and advice continues? SCAR produced guidelines adopted at XXII ATCM on preparation of management plans for ASPAs. *No guide yet on ASMAs. Further work outside scope of TOR.*
8.	PA boundaries should be defined by natural features where appropriate, fixed by GPS where possible, and standardised signs should be erected at them.	Partly reflected in Annex V *and guidelines (TOR (a)). Signs are not standardised or commonplace. Further work outside scope of TOR.*
9.	Management plans should identify values, management objectives, and activities to be observed. COMNAP support should be sought.	Guidelines adopted at XXII ATCM contain these aspects. When the ATCM approves management plans, Parties and associated organisations (e.g. COMNAP) implement them. *Further work outside scope of TOR..*
10.	When existing PAs are reclassified in accordance with Annex V, new management plans should be prepared.	Implemented and underway. *Further work outside scope of TOR..*
11.	Standard methodology for site surveillance, monitoring and co-operative management.	SCAR reporting form adopted by XXII ATCM. Co-operative management has improved *but more work needed. Further work outside scope of TOR.*
12.	Issue of permit to enter PAs to require compliance with management plan; permits should be subject to review.	Standard practice in most countries but difficult to enforce everywhere. *Further work outside scope of TOR..*
13.	Parties inspect PAs at not more than five year intervals to ensure use in accordance with management plans; inspections to be co-ordinated.	Practice being adopted but backlog exists. *Further work outside scope of TOR..*

14.	Protection measures for Historic Sites and Monuments.	Implemented. *Further work outside scope of TOR.*
15.	Historic and scientific values of abandoned work sites to be considered before clean-up sanctioned.	Generally implemented. *Further work outside scope of TOR.*
16.	Conservation principles for assessment and management of tourist operations be considered.	*IAATO has prepared such principles but responsibility for management resides with Treaty Parties. Not all tourist operators belong to IAATO. Further work outside scope of TOR.*
17.	Research into and monitoring of tourist activities and impacts to facilitate planning and management.	Some research and monitoring is and has been undertaken. *Further work outside scope of TOR.*
18.	Establishment of PA database to allow access to management plans and site data to be considered.	Some relevant databases have been established at national sites. Wider establishment still under discussion at ATCMs and CEP. *Further work outside scope of TOR.*
19.	Information in four languages to be made available to all visitors to ensure compliance with conservation measures.	*Not implemented in all languages. Documents important for protection of Antarctica should be translated into as many visitors' languages as possible, especially for operations near protected areas (e.g. Recommendation XVIII-1 has been translated into the four official languages plus Italian, Chinese, Japanese and German). Further work outside scope of TOR.*
20.	Parties to ensure that expeditions shall oblige pilots, captains, officers, crew and passengers to comply with conservation measures and PA regulations.	Generally implemented. *Further work outside scope of TOR.*
21.	CEP should develop an information strategy for data collection etc associated with PA management.	Under preliminary discussion. *Further work outside scope of TOR.*
22.	Parties to consider opportunities for applying international PA designations to areas of exceptional and universal conservation value and explore the possibility of 'Antarctic Heritage Landscapes'.	Discussed at subsequent workshops and briefly in ATCM's and CEP. *Indirectly relevant in part to TOR (a).*

Treaty Parties – NGO Workshop, Tromso, 28 May 1998 (Njaastad 1998)

	Recommendation	Implementation
1.	That the ATCPs, the CEP, SCAR and CCAMLR, take urgent steps to identify possible new protected areas in the following categories: areas kept inviolate from human interference (Annex V, Article 3(2a)); representative examples of ecosystems (Annex V, Article 3 (2b)).	Recommendation A.3 applies here. *Meaning of "representative" examined in TOR task (a). Partly relevant to TOR part (a).*
2.	That the CEP, in collaboration with SCAR and IUCN, should develop new systems for classifying protected areas in Antarctica making good use of existing knowledge and methods (and taking account of all types of area referred to in Annex V, Article 3.2).	Similar to A.6 and A.22. Not yet agreement or formal development in Treaty system. *Recommendation consistent with TOR part (a).*
3.	That the ATCPs through the CEP examine ways of establishing and maintaining a database on Antarctic protected areas, which could be made accessible electronically.	Similar to A.18. *Further work outside scope of TOR.*
4.	That the ATCPs, through the CEP, undertake a gap analysis based on the values for site protection identified in Article 3 of Annex V, in order to make recommendations for new protected areas.	Argentine paper at Peru workshop useful but author considered more systematic work was required. *Further work outside scope of TOR.*

5.	That the ATCPs, the CEP, SCAR and COMNAP should consider means by which adopted management plans and the Guidelines on the Preparation of Management Plans can be made as widely available as possible.	Overlap with A.18, 19 and B.3. Under discussion. *Further work outside scope of TOR.*
6.	That the CEP should develop criteria for the five year review of management plans as required by Article 6 (3) of Annex V, and establish a standardised reporting system for the exchange of information as required by Article 10 (1c) of Annex V.	See A.11. Discussed at CEP II, Peru workshop. *Implicit in TOR (b) and also (a).*
7.	That the CEP should consider how it can best review plans for ASPAs proposed because of their wilderness, aesthetic or historic values given that consideration of such values lies outside the relevant competence of SCAR and CCAMLR.	Information papers by UK and NZ at CEP I and II provided background. *TOR (b) implicitly includes this.*
8.	That the CEP consider establishing a sub-group(s) to address elements of the protected areas system, and select appropriate convenors for such cub-groups.	Intersessional group for EIA useful model of intersessional subgroups. Discussed at Peru workshop and CEP II. *Part of TOR (b).*
9.	That the Terms of Reference of and sub-group be determined by the CEP.	Accepted *and required by CEP rules of procedure.* Discussed at Peru workshop and CEP II. *Implicit part of TOR (b).*
10.	That the CEP should examine the timelines for the submission and processing of proposed management plans with a view to improving the process, where possible.	UK paper at Peru workshop. *Implicit part of TOR (b).*

Treaty Parties – NGO workshop, Lima, 22 – 23 May 1999 (Peru 1999)

	Recommendation	Implementation
1.	That the CEP elaborates the existing framework for protected areas in Antarctica, which draws on the schema (identified).	Overlap with A.6, B.2? *ICG TOR (a).*
2.	That the CEP considers the need for further elaboration of an Antarctic conservation strategy.	*TOR (c)* (This paper).
3.	That in selecting new protected areas, a range of tools be used, including analysis of environmental risk, quality and feasibility.	*TOR (a).*
4.	When preparing and periodically reviewing protected area management plans [for which it has been assigned responsibility], the Party compile inventories of the values found in those areas, and assess the effectiveness of protection for the designated assemblages. In addition consider whether there is inappropriate duplication between areas, and whether there are other assemblages which need inclusion in the protected area.	Advice to CEP II. *Further work outside scope of TOR.*

IUCN Antarctic cumulative impacts workshop, Washington, 18-21 September 1996 (De Poorter, M and Dalziell, JC (Editors) 1996).

	Recommendation	Implementation
5.	The use of ASMAs and ASPAs should be encouraged as a tool to manage cumulative impacts.	*Further work outside scope of TOR.*

6.	International cooperation is essential and should be strongly encouraged in the establishment and management of protected areas.	*Implicit in TOR.*
7.	In the management of these areas, steps should be taken to avoid or minimise the increased risk of cumulative impacts [arising] from the possibility that protected areas attract further scientific activities.	*Further work outside scope of TOR.*
8.	"Pristine" areas should be identified and consideration given to designations under Annex V to achieve the appropriate level of protection of them (which could include exclusion of activities).	*Further work outside scope of TOR.*

CEP Report Appendices

Appendix 1: CEP Advice to the XII SATCM on the draft CEE contained in (XII SATCM/WP1)

With regard to the draft Comprehensive Environmental Evaluation for recovering a deep ice core in Dronning Maud Land, Antarctica, (XII SATCM/WP1) the Committee for Environmental Protection,

Having fully considered the draft CEE circulated by Germany, as reported in paragraphs 20 to 30 in the report of CEP III, Annex, and having

provided comments at the meeting to Germany on specific elements of the draft CEE,

considered that, in general, the draft CEE was well structured and had provided an appropriate assessment of the impacts of the proposed project; and

considered that the draft CEE was consistent with the requirements of Annex I of the Protocol.

Recommends that the SATCM Endorse the views of the CEP.

Appendix 2: Antarctic Protected Areas System Revised Management Plans for Specially Protected Areas and Sites of Special Scientific Interest (Measure)

(See Annex A, Measure 1 and Annex E)

Appendix 3: Antarctic Protected Areas System: Extension of expiry dates for certain Sites of Special Scientific Interest (Measure)

(See Annex A, Measure 2)

Appendix 4: Guidelines for Implementation of the Framework for Protected Areas set forth in Article 3, Annex V of the Environmental Protocol (Resolution)

(See Annex C, Resolution 1, and Annex F)

Appendix 5: CEP IV Draft Agenda

(See Annex M)

Annex E: Management Plans

Management Plan for Specially Protected Area No. 14

LYNCH ISLAND, SOUTH ORKNEY ISLANDS

1. Description of values to be protected

Lynch Island (latitude 60°39'10" S, longitude 45°36'25" W; 0.1 km²), Marshall Bay, South Orkney Islands, was originally designated as a Specially Protected Area through Recommendation IV-14 (1966, SPA No. 14) after a proposal by the United Kingdom. It was designated on the grounds that the island "supports one of the most extensive and dense areas of grass (*Deschampsia antarctica*) known in the Treaty Area and that it provides an outstanding example of a rare natural ecological system". These values were amplified and extended by Recommendation XVI-6 (1991) when a management plan for the site was adopted. This pointed out that in addition to the luxuriant growth of Antarctic hair grass *Deschampsia antarctica*, "the only other Antarctic flowering plant, Antarctic pearlwort (*Colobanthus quitensis*), is also abundant". It was further noted that while the cryptogamic vegetation is typical of the region, several species of moss found on the island (*Polytrichastrum alpinum* (=*Polytrichum alpinum*) and *Muelleriella crassifolia*) are unusually fertile for their southerly location. The shallow loam-like soil associated with the grass swards was noted to contain a rich invertebrate fauna. A rare enchytraeid worm (species as yet unidentified) was also found in moist moss in rock crevices on the northern side of the island. These values noted in the original designation and contained in the original management plan are reaffirmed in this revised management plan.

Further values not referred to originally, but mentioned in scientific descriptions of Lynch Island, are also considered important as reasons for special protection of the Area. These values are:

It is possibly the only known location in Antarctica where *Polytrichastrum alpinum* develops sporophytes in profusion annually;

Polytrichum strictum (=*Polytrichum alpestre*) occasionally produces male inflorescences in local abundance – a rare occurrence in this species in Antarctica;

It is one of few sites where the grass *Deschampsia* is known to grow directly on *Polytrichum-Chorisodontium* moss banks;

The rare moss *Plagiothecium ovalifolium* occurs in moist shaded rock crevices near the shore, although most of these sites have been affected by recent Antarctic fur seal (*Arctocephalus gazella*) activity;

The population density of the arthropod community associated with *Deschampsia* on Lynch Island appears unusually high, with some measurements suggesting it is one of the highest in the world. The site also shows unusual diversity for an Antarctic site;

One arthropod species (*Globoppia loxolineata*) is near the northernmost limit of its known distribution, and specimens collected from Lynch Island exhibited unusual morphological characteristics compared to specimens collected elsewhere in the South Orkney – Antarctic Peninsula region;

Chromobacterium bacteria, yeasts and fungi are found in higher densities than on Signy Island, thought to be a result of the lower acidity of the soils associated with *Deschampsia* and the more favourable microclimate at Lynch Island;

The shallow gravelly loam-like soil beneath the dense swards of *Deschampsia* may represent one of the most advanced soil types in the Antarctic.

Lynch Island is 2.4 km from Signy Island, the location of Signy Research Station (UK), and about 200 m from Coronation Island, the largest of the South Orkney Islands. The Area has been afforded

special protection for most of the modern era of scientific activity in the region, with entry permits having been issued only for compelling scientific reasons. Thus, the island has not been subjected to frequent visits, scientific research or sampling.

Since 1983, the numbers of Antarctic fur seals in the South Orkney Islands has increased significantly, with consequent destruction of accessible areas of vegetation where the seals come ashore. Some vegetated areas on Lynch Island have been damaged, although at the time of the most recent inspection (17 February 1999) it was observed that the most luxuriant areas of grass on the northern and north-western slopes had not yet been affected. However, accessible *Polytrichum* and *Chorisodontium* moss banks and *Deschampsia* on the north-eastern and eastern sides of the island have been extensively damaged. Notwithstanding this localised destruction, to date the primary values of the island as noted above have not been significantly compromised by either human or seal access to the island. The Area therefore has potential value as a reference site against which to measure changes in comparable ecosystems which are experiencing substantial changes as a result of Antarctic fur seal activities.

The coastline boundaries of the Area have not changed in this management plan, but the Area is better defined to include the whole island above the low tide water level, excluding offshore islets and rocks.

2. Aims and objectives

Management at Lynch Island aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- protect the plant communities, especially those associated with the *Deschampsia | Colobanthus*, against direct disturbance by Antarctic fur seals;
- allow scientific research on the ecosystem in the Area provided it is for compelling reasons which cannot be served elsewhere;
- maintain the Area as a potential reference site against which to measure and compare changes occurring as a result of disturbance by Antarctic fur seals at nearby sites where their access is unrestricted;
- ensure that the flora and fauna are not adversely affected by excessive sampling within the Area;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area;
- allow visits for management purposes only in support of the aims of the management plan.

3. Management activities

The following management activities shall be undertaken to protect the values of the Area:

- A map showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently at Signy (UK) and Orcadas (Arg.) research stations, where copies of this management plan shall also be made available;
- A sign showing the location and boundaries of the Area with clear statements of entry restrictions should be placed on a prominent rock near the access beach on the eastern end of the northern side of the island (Map 2) to help avoid inadvertent entry;
- The values for which the Area is protected are at risk of destruction by Antarctic fur seals, which have shown a significant increase in numbers in the South Orkney Islands. At Lynch Island active management may be required in order to exclude Antarctic fur seal access to vegetated areas. This may involve the construction of fences or walls at appropriate locations;
- Markers, signs, or other structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer necessary;

- Visits shall be made as necessary (no less than once every three years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map 1: Lynch Island Specially Protected Area No. 14 in relation to the South Orkney Islands, showing the location of Signy Research Station (UK), and the location of the other protected areas in the region (Moe Island SPA No. 13, Southern Powell Island SPA No. 15, and North Coronation Island SPA No. 18). Inset: the location of the South Orkney Islands in Antarctica.

Map 2: Lynch Island SPA No. 14 topographic map. Map specifications

Projection: Lambert Conformal Conic; Standard parallels: 1st 60° 40′ 00″ S; 2nd 63° 20′ 00″S;

Central Meridian: 45° 26′ 20″ W; Latitude of Origin: 63° 20′ 00″ S; Spheroid: WGS84; Datum: Mean Sea Level. Horizontal accuracy of control points: ±1 m. Vertical contour interval 10 m, horizontal and vertical accuracy expected to approximately ±1 m.

Map 3: Lynch Island SPA No. 14 vegetation map. Map specifications as for Map 2.

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

Lynch Island (latitude 60°39′10″ S, longitude 45°36′25″ W; area: 0.1 km²) is a small island situated at the eastern end of Marshall Bay in the South Orkney Islands, about 200 m south of Coronation Island and 2.4 km north of Signy Island (Map 1). The 500 m x 300 m island has low cliffs of up to 20 m in height on the south, east and west sides, dissected by boulder-filled gullies. The northern side has a low cliff below a rock terrace at about 5-8 m altitude, above which moderate slopes rise to a broad plateau at about 40-50 m, with a maximum altitude of 57 m. A beach at the eastern end of the northern coast affords easy access to relatively gentle slopes leading to the central plateau area. The coastal cliffs generally make access to the upper island by other routes difficult, although access is feasible via one or two of the gullies on the eastern and northern sides.

The designated Area comprises the entire island above the low tide level, at which the coastline is defined as the boundary of the Area (Map 2). Boundary markers have not been installed because the coast itself is a clearly defined and visually obvious boundary feature.

No meteorological data are available for Lynch Island, but conditions are broadly expected to be similar to those experienced at Signy Research Station. However, anecdotal observations suggest that significant microclimatic differences exist on Lynch Island, as the more profuse growth of plant communities would seem to attest. The island is exposed to the south-west and to katabatic and föhn winds descending from Coronation Island to the north. However, in other respects the island is relatively sheltered from regional northerly, easterly and southerly winds by Coronation Island, Cape Hansen and Signy Island respectively. The föhn effect can briefly raise local air temperatures by as much as 10°C at Signy Island. Lynch Island has often been observed to receive sunshine when the surrounding region is shrouded in low cloud. The angle of solar incidence is also relatively high on the northern side of the island because of its general slope and aspect. The above factors may be important reasons for the abundance of the two flowering plants found on the island.

The bedrock of Lynch Island consists of quartzo-feldspathic and micaceous schists of the Scotia metamorphic complex, but is poorly exposed and equivalent rocks are much better displayed in the Cape Hansen area, to the east on Coronation Island. Three main soil types have been identified on Lynch Island:

(i) an acidic (pH 3.8 – 4.5) moss peat, formed by the tall turf-forming mosses *Chorisodontium aciphyllum* and *Polytrichum strictum* (=*Polytrichum alpestre*), occurs mainly at the north-eastern end

of the island. This peat reaches a depth of about 50 cm and is similar to peat on Signy Island where it reaches a depth of 2 m. Where the peat depth exceeds about 30 cm there is permafrost. In a few places where the substratum is moist, shallow peat of 10-15 cm depth (pH 4.8 ffi 5.5) has accumulated beneath the carpet-forming mosses *Warnstorfia laculosa* (=*Calliergidium austro-stramineum*) and *Sanionia uncinata* (=*Drepanocladus uncinatus*).

(ii) a shallow, gravelly loam-like soil resembling tundra brown soil occurs beneath dense swards of the grass *Deschampsia antarctica*. It is seldom more than about 30 cm in depth (pH 5.0 – 5.8) and probably represents one of the most advanced soil types in the Antarctic.

(iii) A glacial till with material ranging from fine clay (pH 5.2 – 6.0) and sand to gravel and larger stones. This covers the summit plateau and occurs in rock depressions throughout the island, as well as on parts of the rock terrace. On the plateau cryoturbation has in several places sorted the material into patterned features with small stone circles and polygons on level ground and stone stripes on sloping ground. At the north-eastern end of the island, the deposition of limpet shells (*Nacella concinna*) by gulls (*Larus dominicanus*) has resulted in a more calcareous mineral soil in rock depressions with a pH of 6.5 - 6.8.

Small temporary melt-streams occur on the slopes in summer, but there are no permanent streams or pools, and only a few small late-lying snow patches occur on the southern side of the island.

Cryptogamic and phanerogamic vegetation typical of the maritime Antarctic is found over much of the island (Map 3). The most significant aspect of the vegetation is the abundance and reproductive success of the two native Antarctic flowering plants, the Antarctic hair grass (*Deschampsia antarctica*) and Antarctic pearlwort (*Colobanthus quitensis*), found especially on the northern slopes (Map 3). Both species flower in profusion and seed viability appears to be much greater than on Signy Island. Lynch Island possesses the largest stands of *Deschampsia* and the greatest abundance of *Colobanthus* known in the South Orkney Islands and one of the most extensive anywhere in the Antarctica Treaty Area.

On the rock terrace and moist slope rising above the northern coast, the grass forms extensive swards of up to 15 m x 50 m. These swards range from continuous stands of relatively luxuriant plants on the moister sites and ledges to small, yellowish, more isolated plants on the drier, stonier and more exposed terrain. *Colobanthus* is generally associated, but here the plants do not coalesce to form closed patches. This is one of very few sites where *Deschampsia* is known to grow directly on *Polytrichum-Chorisodontium* moss banks. Elsewhere on the island, the grass and, to a lesser extent, the pearlwort are frequent associates in other communities, especially stands of denser fellfield vegetation where there is quite high cover afforded by various mosses and lichens (particularly towards the western end of the northern terrace).

Shallow but occasionally extensive (about 50 m^2) banks of *Chorisodontium aciphyllum* and *Polytrichum strictum* are frequent at the north-eastern end of the island and, to a lesser extent, on the southern side. These are typical of the moss banks which occur on Signy Island and elsewhere in the northern maritime Antarctic, with several fruticose and crustose lichens growing epiphytically on the moss surface. In small moist depressions, there are carpets of *Warnstorfia laculosa* and *Sanionia uncinata*, with some *Warnstorfia sarmentosa* (=*Calliergon sarmentosum*) and *Cephaloziella varians* (= *C. exiliflora*). On wet soil and rock ledges, *Brachythecium austro-salebrosum* is common.

On the drier, more windswept, stonier soils and rock surfaces – notably in the plateau area – a typical open fellfield community of many bryophyte and lichen taxa form a complex mosaic. The dominant species in this locality are the lichens *Usnea antarctica* and *U. aurantiaco-atra* (=*U. fasciata*) and the moss *Andreaea depressinervis*; *Sphaerophorus globosus* and other species of *Alectoria, Andreaea, Cladonia*, and *Stereocaulon* are also common, while *Himantormia lugubris* and *Umbilicaria antarctica* are infrequent. Crustose lichens are abundant on all rock surfaces. The mosses and macrolichens in this area are loosely attached on thin soils and are easily damaged. Large thalli of *Usnea* spp. and *Umbilicaria antarctica* are found on moist sheltered boulders and rock faces, especially on the southern side of the island.

Communities of crustose lichens occur on the cliffs above the high water mark, especially where the rock is influenced by breeding or roosting birds. The distribution of several species forms distinctive zones in relation to inundation by sea spray and exposure to wind. The best developed communities

of brightly coloured ornithocoprophilous taxa occur at the western end of the island where *Caloplaca* spp., *Haematomma erythromma, Mastodia tesselata, Physcia caesia, Xanthoria candelaria, X. elegans,* and species of *Buellia* and *Verrucaria* are frequent. The uncommon halophilous moss *Muelleriella crassifolia* also occurs within the spray zone around the island.

The only rare moss recorded on Lynch Island is *Plagiothecium ovalifolium,* found in moist, shaded rock crevices near the shore. However, the island is possibly the only site known in the Maritime Antarctic where the moss *Polytrichastrum alpinum* develops sporophytes in profusion each year; this occurs among *Deschampsia, Colobanthus* and cryptogams on the northern side of the island; elsewhere in the Antarctic sporophytes are in some years very rare. Also, *Polytrichum strictum* produces male inflorescences in local abundance, a rare phenomenon in this species in the Antarctic. While the thalloid liverwort *Marchantia berteroana* is locally common on Signy Island, Lynch Island is one of very few other localities where it is known in the South Orkney Islands. Several cryptogamic species of very restricted distribution in the Antarctic, but which are locally common on Signy Island and the mainland of Coronation Island only a few hundred metres away, have not been observed at Lynch Island.

The microinvertebrate fauna associated with the rich *Deschampsia* swards described thus far comprises 13 taxa: three springtails (*Cryptopygus antarcticus, Friesea woyciechowskii* and *Isotoma* (*Folsomotoma*) *octooculata* (=*Parisotoma octooculata*), one mesostigmatid mite (*Gamasellus racovitzai*), two cryptostigmatid mites (*Alaskozetes antarcticus* and *Globoppia loxolineata*), and seven prostigmatid mites (*Apotriophtydeus* sp., *Ereynetes macquariensis, Nanorchestes berryi, Stereotydeus villosus,* and three species of *Eupodes*). The number of taxa identified is likely to increase with greater sampling. The community is dominated by the Collembolla, especially *Cryptopygus antarcticus* (84% of all arthropods extracted), with relatively large numbers of *I. octooculata*; the principal mite was an undetermined species of *Eupodes. Globoppia loxolineata* is near the northernmost limit of its known distribution. In general, the population density of the arthropod community of grass stands on Lynch Island appears unusually high, with some measurements suggesting it is one of the highest in the world. It also shows considerable diversity for an Antarctic site, although this observation was based on a small number of sample replicates and further sampling would be required to establish densities with greater reliability: this is difficult to achieve on Lynch Island given the very limited extent of communities available for sampling.

Lynch Island was the first site in the Antarctic where a terrestrial enchytraeid was found (in soil beneath a moss *Hennediella antarctica* on a rock ledge above the northern shore); only in a few other sites in the South Orkney Islands have these worms been found – although few samples have been gathered and the species has yet to be identified. Of the tardigrade fauna, most of the 16 individuals isolated from a sample of *Brachythecium* were *Hypsibius alpinus* and *H. pinguis* with some *H. dujardini*, while of 27 isolated from a *Prasiola crispa* sample, almost all were the latter species with a few that were other species of *Hypsibius.*

The mineral and organic soils of Lynch Island have a slightly higher pH than corresponding soils on nearby Signy Island. This higher base and nutrient status, together with the more favourable microclimate, is reflected in larger numbers of bacteria (including *Chromobacterium*), yeasts and fungi than occur in comparable soils on Signy Island. Bacterial numbers in the *Polytrichum* peat on Lynch Island are about eight times, and in the *Warnstorfia* peat about six times, greater than in corresponding Signy Island peats; yeasts and fungi are similarly much more abundant. Soil associated with the two flowering plants yielded several nematophagous fungi: in *Deschampsia* soil *Acrostalagmus goniodes, Cephalosporium balanoides* and *Dactylaria gracilis*; in *Colobanthus* soil, *Cephalosporium balanoides, Dactylaria gracilis, Dactylella stenobrocha* and *Harposporium anguillulae* were found. The basidiomycete fungi *Galerina antarctica* and *G. longinqua* occur on moist moss.

The island has no penguin colonies or substantial breeding colonies of other birds. Groups of chinstrap (*Pygoscelis antarctica*), Adélie (*P. adeliae*) and gentoo (*P. papua*) penguins and, sometimes, blue-eyed cormorants (*Phalacrocorax atriceps*) often congregate at the north-eastern and the western ends of the island. Several pairs of brown skuas (*Catharacta lonnbergii*) and at least two pairs of kelp gulls (*Larus dominicanus*) were observed in the early 1980s to nest at the north-eastern corner. A small colony of Antarctic terns (*Sterna vittata*) may also occur in this vicinity, although in February 1994 breeding was not observed. Cape petrels (*Daption capense*) and snow petrels (*Pagodroma nivea*)

breed on the higher cliffs at the eastern end and along the north-western coast of the island. A few pairs of snow petrels and Wilson's storm petrels (*Oceanites oceanicus*) nest on ledges and beneath boulders on the south side of the island.

Weddell seals (*Leptonychotes weddellii*), crabeater seals (*Lobodon carcinophagus*), occasional leopard seals (*Hydrurga leptonyx*), and small groups of southern elephant seals (*Mirounga leonina*) are regularly seen on the coast and on ice floes in the vicinity; none have been known to breed on Lynch Island. Since the early 1980s increasing numbers of Antarctic fur seals (*Arctocephalus gazella*), virtually all being immature non-breeding males, have been observed on Lynch Island, some gaining access up the more gentle north-eastern slopes to vegetated areas, where they have caused local, but severe, damage to *Polytrichum-Chorisodontium* moss banks and other communities.

Seal access to the island is principally from a beach on the NE coast. Once seals have gained access, there are no further substantial geographical impediments to their more extensive travel over the island. Groups of seals have been observed near the summit. Destruction of swards of *Deschampsia*, the feature for which the Area is primarily protected, was first reported in 1988. At the time of the most recent inspection (February 1999) it was observed that the most luxuriant areas of *Deschampsia* and *Colobanthus* on the northern and north-western slopes had not yet been affected. Accessible areas of vegetation in the eastern and north-eastern sides of the island, particularly *Polytrichum* and *Chorisodontium* moss banks, had been severely damaged by Antarctic fur seals, while *Deschampsia* had either been damaged or had died (Map 3).

6(ii) Restricted and managed zones within the Area
None.

6(iii) Structures within and near the Area
There are no structures present in the Area apart from several cairns marking sites used for topographical survey. A sign notifying the specially protected status of Lynch Island was erected on a prominent rock outcrop above the recommended landing beach in February 1994, but this was destroyed by strong winds. The same site should be used for a stronger replacement sign.

A small refuge is present at Shingle Cove, 2 km east, around Cape Hansen on Coronation Island. Signy Research Station (UK) is 6.4 km south at Factory Cove, Borge Bay, on Signy Island.

6(iv) Location of other protected areas within close proximity of the Area
The nearest protected areas to Lynch Island are North Coronation Island (SPA No.18) which lies about 5 km to the north, Moe Island (SPA No. 13) which is about 10 km SSW, and Southern Powell Island (SPA No. 15) which is about 35 km to the east (Map 1).

7. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by an appropriate national authority. Conditions for issuing a Permit to enter the Area are that:

- it is issued only for compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardise the ecological or scientific values of the Area;
- any management activities are in support of the aims and objectives of the management plan;
- the actions permitted are in accordance with the management plan;
- the Permit, or an authorised copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- permits shall be issued for a stated period.
- The appropriate authority should be notified of any activities/measures undertaken that were not included in the authorised Permit.

7(i) Access to and movement within the Area
Vehicles are prohibited within the Area and access shall be by small boat or by helicopter. Landings from the sea should be at the beach on the eastern end of the northern coast of the island (Map 2), unless specifically authorised by Permit to land elsewhere, or when landing at this location is impractical because of adverse conditions. Landing of helicopters within the Area shall be at the designated location on the rock platform (8 m) on the north-western end of the island (Map 2). Use of helicopter smoke grenades is prohibited unless absolutely necessary for safety, and all grenades should be retrieved. No special restrictions apply to the sea or air routes used to move to and from the Area.

Movement within the Area shall be on foot. Pilots, air or boat crew, or other people on aircraft or boats, are prohibited from moving on foot beyond the immediate vicinity of their landing site unless specifically authorised by Permit. All movement should be undertaken carefully so as to minimise disturbance to the soil and vegetated surfaces, walking on rocky terrain if practical, but taking care not to damage or dislodge lichens. Pedestrian traffic should be kept to the minimum consistent with the objectives of any permitted activities, and every reasonable effort should be made to minimise trampling effects.

7(ii) Activities that are or may be conducted in the Area, including restrictions on time or place

- Scientific research that will not jeopardise the ecosystem or scientific values of the Area, and which cannot be served elsewhere;
- Essential management activities, including monitoring;

7(iii) Installation, modification or removal of structures
Structures shall not be erected within the Area except as specified in a Permit. All scientific equipment installed in the Area must be approved by Permit and clearly identified by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit.

7(iv) Location of field camps
Camping should be avoided within the Area. However, when absolutely necessary for purposes specified in the Permit, camping is allowed at the designated site at the north-western end of the island (Map 2).

7(v) Restrictions on materials and organisms which can be brought into the Area
No living animals, plant material or microorganisms shall be deliberately introduced into the Area and the precautions listed in 7(ix) below shall be taken to prevent accidental introductions. No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless specifically authorised by Permit for specific scientific or management purposes. Anything introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of any introduction into the environment is minimised. If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*. The appropriate authority should be notified of anything released and not removed that was not included in the authorised Permit.

7(vi) Taking or harmful interference with native flora or fauna
Taking or harmful interference with native flora or fauna is prohibited, except by Permit issued in accordance with Annex II to the Protocol on Environmental Protection to the Antarctic Treaty. Where taking or harmful interference with animals is involved, the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica* should be used as a minimum standard.

7(vii) Collection or removal of anything not brought into the Area by the Permit holder
Collection or removal of anything not brought into the Area by the Permit holder shall only be in accordance with a Permit and should be limited to the minimum necessary to meet scientific or management needs. Permits shall not be granted if there is a reasonable concern that the sampling proposed would take, remove or damage such quantities of soil, native flora or fauna that their

distribution or abundance on Lynch Island would be significantly affected. Anything of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit Holder or otherwise authorised, may be removed unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case the appropriate authority should be notified.

7(viii) Disposal of waste
All wastes, including all human wastes, shall be removed from the Area. Human wastes may be disposed of into the sea.

7(ix) Measures that are necessary to ensure that the aims and objectives of the management plan can continue to be met

- Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples for analysis or review, or for protective measures.
- Any specific sites of long-term monitoring shall be appropriately marked.
- To help maintain the ecological and scientific values of Lynch Island special precautions shall be taken against introductions. Of concern are microbial, invertebrate or plant introductions from other Antarctic sites, including stations, or from regions outside Antarctica. All sampling equipment or markers brought into the Area shall be cleaned or sterilised. To the maximum extent practicable, footwear and other equipment used or brought into the Area (including backpacks, carry-bags and tents) shall be thoroughly cleaned before entering the Area.

7(x) Requirements for reports
Parties should ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the management plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organising the scientific use of the Area.

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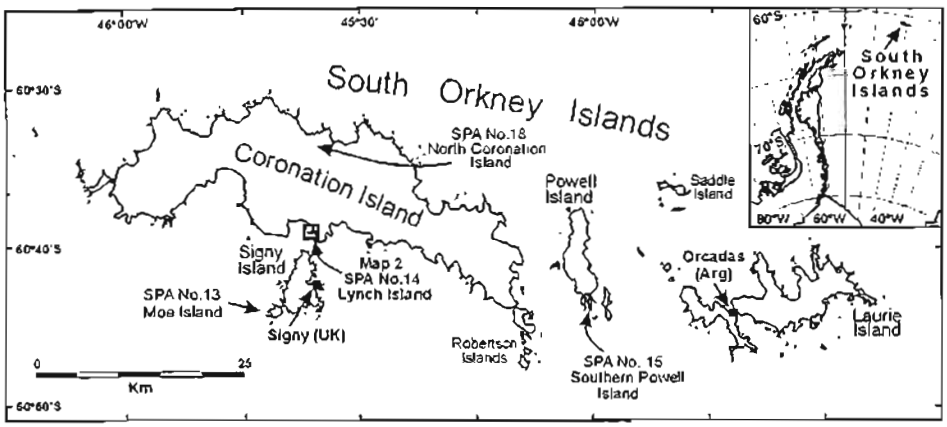
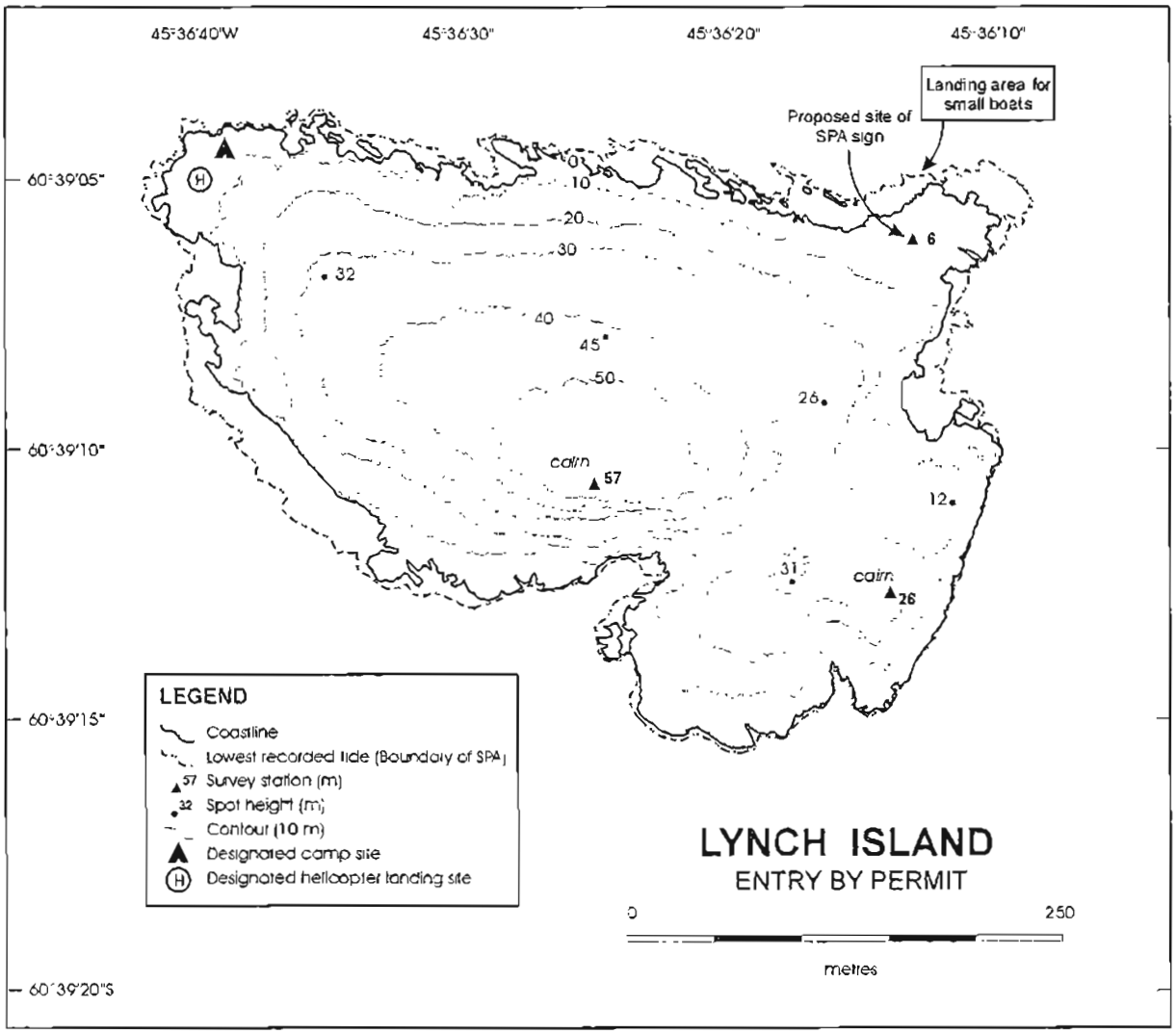
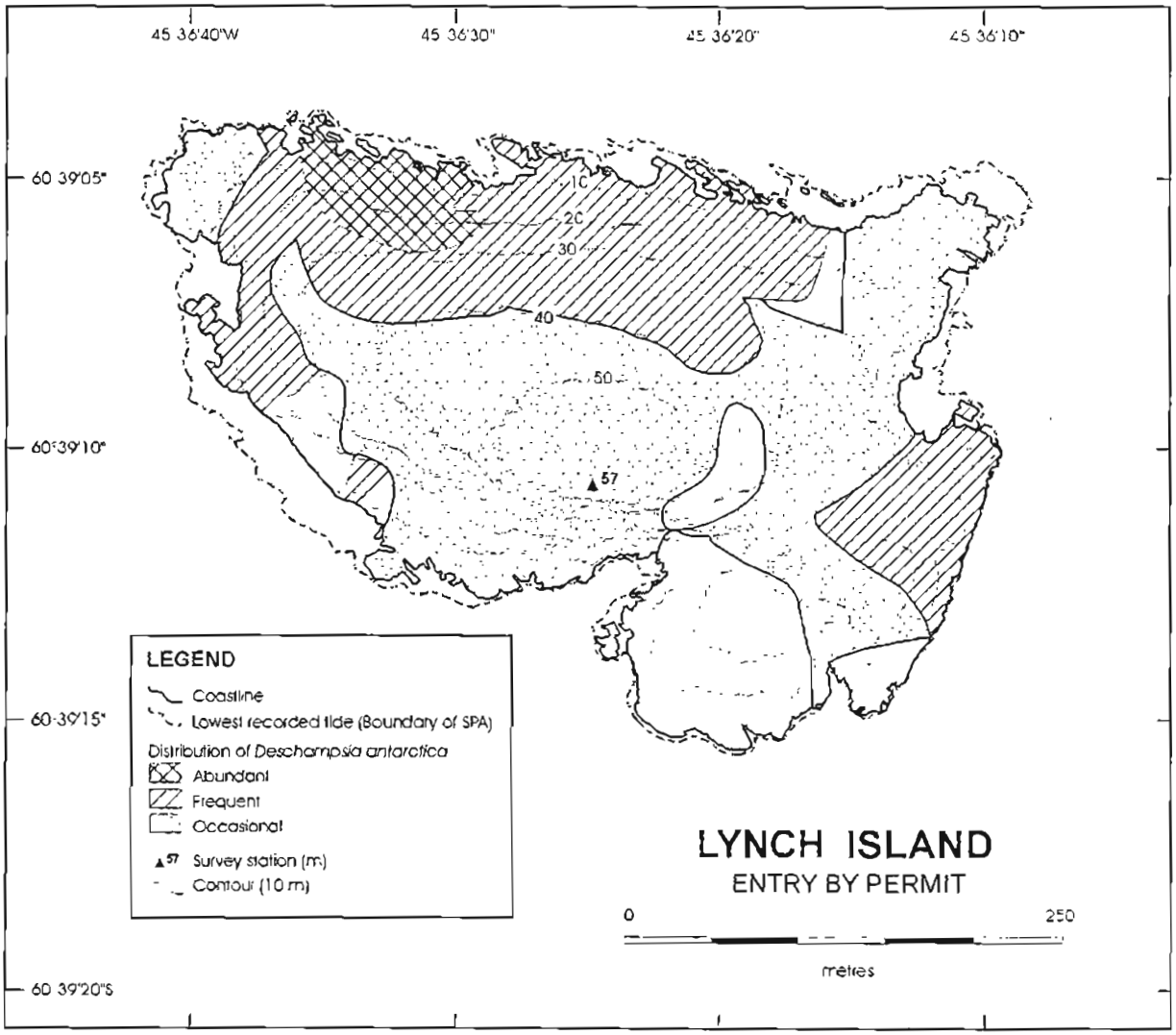


Map 1. Lynch Island (SPA No. 14), South Orkney Islands, location map. Inset: location of the South Orkney Islands.

Map 2. Lynch Island (SPA No. 14) topographic map.



Map 3. Lynch Island (SPA No. 14) vegetation map.



Management Plan for Specially Protected Area No. 19

LAGOTELLERIE ISLAND, MARGUERITE BAY, GRAHAM LAND

1. Description of values to be protected

Lagotellerie Island (Latitude 67°53'20" S, Longitude 67°25'30" W, 1.58 km^2), Marguerite Bay, Graham Land, was originally designated as a Specially Protected Area through Recommendation XIII-11 (1985, SPA No. 19) after a proposal by the United Kingdom. It was designated on the grounds that the island "contains a relatively diverse flora and fauna typical of the southern Antarctic Peninsula region; that of particular interest is the abundance of the only two Antarctic flowering plants *Deschampsia antarctica* and *Colobanthus quitensis* which form stands up to 10 m^2; that these are amongst the largest stands known south of the South Shetland Islands, being only 90 km north of their southern limit; that here both species flower profusely and the seeds have a greater viability than those produced in the South Orkney or South Shetland Islands; that numerous mosses and lichens also form well-developed communities on the island; that a few of the mosses are fertile, a rare phenomenon in most Antarctic localities; that the invertebrate fauna is rich and that the island is one of the southernmost sites for the apterous midge *Belgica antarctica*; that the shallow loamy soil developed beneath these swards and its associated invertebrate fauna and microbiota are probably unique at this latitude; that there is a colony of about 1000 Adélie penguins (*Pygoscelis adeliae*) and one of the farthest south colonies of a few dozen blue-eyed cormorants (*Phalacrocorax atriceps*) at the south-east corner of the island and that numerous pairs of brown and south polar skuas (*Catharacta lonnbergii* and *C. maccormicki*) breed on the island.". (It is probable the original reference to 1000 Adélie penguins was meant to be 1000 pairs).

These values were reiterated in Recommendation XVI-6 (1991) when a management plan for the site was adopted, and are largely reaffirmed again in the present management plan. In addition, Lagotellerie Island is notable for the occurrence of *Deschampsia antarctica* at the highest recorded altitude south of 56° S, with scattered small plants observed at heights of up to 275 m. The island therefore has a particular scientific value for study of the influence of altitudinal gradient on biological viability for plant species represented at this site. The values associated with the penguin and skua colonies are now considered to be their ecological interrelationship with the other biological features of exceptional value noted above. Fossiliferous strata present at the eastern end of the island are of particular geological value, as such formations are not commonly exposed in the Antarctic Peninsula Volcanic Group.

The island is 3.25 km west of the southern end of Horseshoe Island, 29 km NW of General San Martín Station (Arg.), almost 70 km east from Teniente Luis Carvajal (Chile) and 46 km SE from Rothera Research Station (UK). The island has not been subject to frequent visits, scientific research or sampling.

The boundary of the Area is defined in this management plan to include the whole island, and offshore islets within 200 m of the coast, above the low tide water level.

2. Aims and objectives

Management at Lagotellerie Island aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance and sampling in the Area;
- preserve the ecosystem of the Area for its potential as a largely undisturbed reference area;
- allow scientific research on the ecosystem in the Area provided it is for compelling reasons which cannot be served elsewhere, in particular research which is expected to improve knowledge of the features and communities identified of special value, and which gathers baseline data on the island's features for which information is poor or not available;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area;

- allow visits for management purposes in support of the aims of the management plan.

3. Management activities

The following management activities are to be undertaken to protect the values of the Area:

- Maps showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently at any operational research station located within 50 km of the Area, where copies of this Management Plan shall also be made available.
- Signs showing the location and boundaries of the Area and listing entry restrictions should be placed at the access beaches on the northern coast and eastern promontory of the island to help avoid inadvertent entry.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer necessary.
- Visits shall be made as necessary (no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map 1: Lagotellerie Island Specially Protected Area No. 19, Marguerite Bay, location map, showing the location of General San Martín Station (Arg.), the station Teniente Luis Carvajal (Chile), Adelaide Island, Rothera Research Station (UK) and nearby SSSI No. 9 at Rothera Point, also on Adelaide Island, and the location of the other protected areas in the region (Dion Islands (SPA No. 8) and Avian Island (SPA No. 21)). 'Base Y' (UK) (Historic Monument No. 63) on Horseshoe Island is shown. Inset: the location of Lagotellerie Island along the Antarctic Peninsula.

Map 2: Lagotellerie Island (SPA No. 19) topographic map.

Map specifications: Projection: Lambert Conformal Conic;

Standard parallels: 1st 63° 20' 00" S; 2nd 76° 40' 00"S; Central Meridian: 65° 00' 00" W;

Latitude of Origin: 70° 00' 00" S; Spheroid: WGS84; Datum: Mean Sea Level;

Vertical contour interval 20 m. Horizontal and vertical accuracy expected to be better than ±5 m.

Map 3: Lagotellerie Island (SPA No. 19) geological sketch map.

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

Lagotellerie Island (Latitude 67°53'20" S. Longitude 67°25'30" W; area 1.58 km²), is situated in Marguerite Bay, Fallières Coast, Graham Land, 46 km SE of Rothera Point on Adelaide Island, 11 km south of Porquois Pas Island and 3.25 km west of the south end of Horseshoe Island. Lagotellerie Island is 2 km by 1.3 km, oriented generally in an E-W direction. Two year-round scientific research stations operate in the vicinity: General San Martín (Argentina; Latitude 68°08' S, Longitude 67°06' W) which is 29.5 km SSE, and Rothera Research Station (UK; Latitude 67°34' S, Longitude 68°07' W) which is 46 km to the NW. A summer-only station, Teniente Luis Carvajal (Latitude 67°46' S, Longitude 68°55' W), has been operated by Chile at the southern end of Adelaide Island since 1985. Lagotellerie Island was first mapped by Jean-Baptiste Charcot during the Deuxième Expédition Antarctiques Française in 1908-10. There are no records of further visits until the 1940s, when the island was visited occasionally by American, Argentine and British field parties from nearby scientific stations. The island has not been the subject of any major scientific investigations and is thus largely undisturbed by human activities.

The designated Area comprises the entire main island, and offshore islets within 200 m of the coast, above the low tide water level, which is defined as the boundary of the Area (Map 2). Boundary markers have not been installed because the coast itself is a clearly defined and visually obvious boundary. Signs should be installed on the northern coast and at the penguin colony on the SE promontory of the island, as described in Section 6(iii) below.

Lagotellerie Island is steep-sided and rocky, with about 13% permanent ice cover, most of which is on the southern slopes. The island rises to twin peaks of 268 m and 288 m separated by a broad saddle at around 200 m, with precipitous cliffs up to this height on the south, west and east sides. The upper northern slopes also have steep cliffs, intersected by gullies, screes and traversed by broad rock terraces. The lower northern slopes are more gentle, particularly on the eastern half of the island, with a broad rocky terrace at an elevation of about 15 m which is formed of frost-shattered raised beach debris.

The bulk of Lagotellerie Island is formed of quartz diorite of unknown age, cut by pink, coarse-grained granodiorite and numerous basic and felsic dykes (Map 3). At the eastern end of the island the plutonic rocks are in fault contact with folded, mildly hornfelsed volcanic rocks of Jurassic–Cretaceous age. These consist of agglomerates, andesitic lavas and tuffs of the Antarctic Peninsula Volcanic Group, with plant remains – probably Jurassic – present in shaly beds interbedded with tuff. Such fossiliferous strata are not commonly exposed in the Antarctic Peninsula Volcanic Group, and are therefore of particular geological importance.

Locally extensive areas of coarse sand and gravel derived from weathered quartz-diorite occur on slopes, ledges, gullies and depressions; the most extensive accumulations are on the saddle between the two summits where the soil is sorted into well-developed stone polygons, circles and stripes. On the broad rock terraces closed stands of moss and grass have developed a relatively rich loamy earth up to 25 cm in depth. Glacial erratics are common on the island.

The island has a relatively diverse flora and luxuriant development of plant communities, representative of the southern maritime Antarctic region. The rich terrestrial biology of Lagotellerie Island was first noted by Herwil Bryant, biologist at East Base (US, on Stonington Island; now Historic Monument No. 55), during a visit in 1940-41 when he observed growths of moss, the Antarctic hair grass *Deschampsia antarctica*, and "a small flowering plant" (almost certainly the Antarctic pearlwort *Colobanthus quitensis*), in a small gully – believed to be that found at the north-eastern end of the island – which he considered of such unusual richness for the region that he unofficially referred to it as "Shangri-la Valley". He did not describe the less luxuriant but more extensive communities of *Deschampsia antarctica* and *Colobanthus quitensis* found on the higher north-facing slopes of the island. These slopes and terraces also provide favourable microclimatic conditions for growth, with a relatively long snow-free growing season, and support an abundance of *Deschampsia antarctica* and *Colobanthus quitensis*, the grass forming closed swards of up to 10 m^2 on some of the terraces. These are among the largest stands of these plants known south of the South Shetland Islands. Both species flower abundantly and the seeds have a greater viability than those produced in the South Orkney or South Shetland Islands, yet they are close to the southern limit of their range. Lagotellerie Island, however, is notable for the growth of *Deschampsia antarctica* at the highest altitude recorded south of 56° S, with scattered small plants observed at heights of up to 275 m. *Colobanthus quitensis* has been observed growing up to 120 m on the island.

Lagotellerie Island also has a rich cryptogamic flora, with small stands of well-developed communities containing several mosses and lichens which are rare at this latitude (notably the mosses *Platydictya jungermannioides* and *Polytrichastrum alpinum*, and lichens *Caloplaca isidioclada, Fuscoparmelia gerlachei* and *Usnea trachycarpa*). The number of bryophyte species thus far identified include 20 mosses and two liverworts (*Barbilophozia hatcheri* and *Cephaloziella varians*), and there are at least 60 lichen species. A comprehensive floristic survey of the island has not yet been undertaken, and numerous species, especially of crustose lichens, remain to be accurately determined.

Vegetation is best developed on a series of rock terraces at around 30-50 m a.s.l. on the northern side of the island. Here, both *Deschampsia* and *Colobanthus* are abundant, and closed grass swards form stands of several square metres. Associated with these, especially on the moister terraces, are usually the mosses *Brachythecium austro-salebrosum, Bryum spp., Pohlia nutans, Polytrichastrum alpinum*

and *Sanionia uncinata*, and liverworts *Barbilophozia hatcheri* and *Cephaloziella varians*. Many of these grass swards are used as nest sites by skuas.

In drier habitats, especially on scree and rock faces, there are locally dense stands dominated by the macrolichens *Usnea sphacelata* and *U. subantarctica*, with *Pseudephebe minuscula*, *Umbilicaria decussata*, and a large number of crustose taxa. Several lichens are associated with the grass and moss communities (e.g. *Cladonia* spp., *Leproloma* spp., *Leptogium puberulum*, *Ochrolechia frigida*, *Psoroma* spp.). Near the penguin and cormorant colonies several colourful nitrophilous lichens are abundant (e.g. *Buellia* spp., *Caloplaca* spp., *Fuscoparmelia gerlachei*, *Xanthoria* spp.).

Numerous lichens (notably *Caloplaca isidioclada*, *Pseudephebe minuscula*, *Usnea sphacelata*, *Umbilicaria decussata* and many crustose taxa) and a few mosses (notably *Grimmia refelxidens*) occur close to the summit of the island, as do scattered individual plants of *Deschampsia*. Few bryophytes produce sporophytes at far southern latitudes, but several mosses are fertile on Lagotellerie Island (e.g. *Andreaea regularis*, *Bartramia patens*, *Bryum amblyodon*, *B. pseudotriquetrum*, *Grimmia reflexidens*, *Hennediella heimii*, *Pohlia nutans*, *Schistidium antarctici*, *Syntrichia princeps*).

Specific studies of the invertebrate fauna have not been conducted on Lagotellerie Island. However, at least six species of arthropod have been recorded: *Alaskozetes antarcticus*, *Gamasellus racovitzai*, *Globoppia loxolineata* (Acari), *Cryptopygus antarcticus*, *Friesea grisea* (Collembola), and *Belgica antarctica* (Diptera, Chironomidae). Several species of nematophagous fungi have been isolated from the soils associated with mosses and *Deschampsia* on Lagotellerie Island (*Cephalosporium balanoides*, *Dactylaria gracilis*, *Dactylella ellipsospora*), species widely distributed in similar habitats throughout the Antarctic and also commonly found in temperate soils.

Bryant reported several small pools present on the island in the early 1940s, which presumably are the same as, or close to, those observed more recently on the extensive flat low-lying ground on the northern side of the island. He recorded the pools contained many phyllopod crustaceans identified as *Branchinecta granulosa*. Rocks in one of the pools were coated in a bright green filamentous alga, on which the mites *Alaskozetes antarcticus* were observed. *A. antarcticus* was also common under pebbles on the pool floor. Other microorganisms of the trochelminth type were observed living in the algae, with a pink rotifer identified as *Philodina gregaria* being especially numerous. Small tufts of a grey-green alga were observed on large pebbles close to the pool bottom. The algae have not been described in more detail, although the presence of *Prasiola crispa* has been noted. More recent observations in the early 1980s suggested there were no permanent freshwater bodies on the island, but temporary runnels in summer were found, with some brackish pools in rock depressions near the northern coast. An inspection visit on 12 January 1989 again noted the presence of several small melt pools of around 5-10 m^2, some with fringing wet moss carpets, and suggested these were probably the habitat of *Belgica antarctica*. No record has been found of any more comprehensive freshwater surveys on the island.

A small Adélie penguin (*Pygoscelis adeliae*) colony occupies the eastern promontory of the island (Map 2). Numbers have varied from a low of perhaps 350-400 pairs based on an estimate made in December 1936 to a high of 2402 pairs recorded in an accurate nest count in November 1955. The colony was regularly used as a source of eggs for personnel stationed at the nearby British Base Y on Horseshoe Island between 1955-60. It was reported that some 800 eggs were taken during 1955. The number of breeding pairs dropped to around 1000 in 1959 and 1960. Adélie penguin colonies are known to exhibit high interannual change in numbers as a result of a variety of natural factors, and in March 1981 it was observed that all of the approximately 1000 chicks in the colony had died. A chick count made in February 1983 suggested the colony consisted of approximately 1700 pairs, which is considered accurate to within 15-25%.

A small colony of blue-eyed cormorants (*Phalacrocorax atriceps*) has been observed on the eastern promontory of the island, which is one of the most southerly breeding sites reported for the species. Some 200 immature birds were observed close to the island, within view of the colony, on 16 January 1956. The colony was reported to consist of 10 nests on 17 February 1983. However, the colony was not seen in the January 1989 inspection on Lagotellerie Island. Brown and south polar skuas (*Catharacta loenbergi* and *C. maccormicki*) are also present, with 12 nests reported in 1956, when it was noted that many of the chicks were definitely south polar skua (*C. maccormicki*). It was estimated in 1958 that five pairs nested around the penguin colony and that both species occurred. A group of

59 non-breeding birds of both species was recorded on 12 January 1989 mid-way along the northern side of the island. Two Wilson's storm petrel (*Oceanites oceanicus*) nests were recorded on 14 January 1956. A kelp gull (*Larus dominicanus*) nest, with eggs, was recorded in the 'Shangri-La Valley' by Bryant in December 1940.

The inspection visit in January 1989 reported 12 Weddell seals (*Leptonychotes weddellii*) hauled out on a small shingle beach at the base of a rocky spit on the north coast, but no other seals were seen. However, southern elephant (*Mirounga leonina*) and Antarctic fur (*Arctocephalus gazella*) seals are commonly observed in Marguerite Bay and it is possible that they also haul out at accessible parts of the island.

The most significant environmental impact at Lagotellerie Island appears to have been from the practice of egg harvesting to feed personnel at bases operating nearby in the period 1955-60. The only evidence of human activity currently thought to exist on the island are the remains of a survey mast on the summit. The inspection visit of January 1989 reported there was no evidence of any recent physical or biological change on the island and it was concluded that the Area was continuing to serve the purpose for which it was designated.

6(ii) Restricted and managed zones within the Area
None.

6(iii) Structures within and near the Area
The remains of a mast erected for survey purposes in the 1960s are present on the summit of the island. No other structures are known to exist on the island. Signs marking the Area have yet to be installed. It is proposed to install two signs: one on the SE promontory close to the penguin colony, another on a prominent access point on the northern coast.

6(iv) Location of other protected areas within close proximity of the Area
The nearest protected areas to Lagotellerie Island are the Dion Islands (SPA No. 8) about 55 km west, Avian Island (SPA No. 21) 65 km west, and Rothera Point (SSSI No. 9) 46 km to the NW (Map 1). Several Historic Sites and Monuments are located in the vicinity: 'Base Y' (UK) on Horseshoe Island (HSM No. 63); 'Base E' (UK) (HSM No. 64) and buildings and artefacts at and near East Base (US) (HSM No. 55), both on Stonington Island; and installations of San Martín Station (Argentina) at Barry Island (HSM No. 26).

7. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by an appropriate national authority. Conditions for issuing a Permit to enter the Area are that:

- it is issued only for compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardise the ecological or scientific values of the Area;
- any management activities are in support of the aims and objectives of the Management Plan;
- the actions permitted are in accordance with the Management Plan;
- the Permit, or an authorised copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- permits shall be issued for a stated period.
- The appropriate authority should be notified of any activities/measures undertaken that were not included in the authorised Permit.

7(i) Access to and movement within the Area
Vehicles are prohibited within the Area and access shall be by small boat or by helicopter. Access from the sea should be to the northern coast of the island (Map 2), unless specifically authorised by Permit to land elsewhere or when landing along this coast is impractical because of adverse conditions. Access into the Area at the 200 m section of NE coast immediately below the "Shangri-la Valley", which contains the richest vegetation growth on the island, is strongly discouraged at all times (Map

2). No special restrictions apply to the sea or air routes used to move to and from the Area. These restrictions apply equally to persons wishing to access the Area via sea ice in the winter.

Overflight of the eastern end of the island over the penguin / cormorant colony is prohibited below 750 m (2500 feet) (Map 2). Landing of helicopters within the Area shall be at the designated location on the broad rock / permanent snow platform about half-way along the NW coast at about 15 m altitude, and 200 m inland from the sea (Map 2). Use of helicopter smoke grenades is prohibited within the Area unless absolutely necessary for safety, and all grenades should be retrieved.

Movement within the Area shall be on foot. Pilots, helicopter or boat crew, or other people on helicopters or boats, are prohibited from moving on foot beyond the immediate vicinity of their landing site unless specifically authorised by Permit. All movement should be undertaken carefully so as to minimise disturbance to the soil and vegetated surfaces, walking on rocky terrain if practical. Pedestrian traffic should be kept to the minimum consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise trampling effects.

7(ii) Activities that are or may be conducted in the Area, including restrictions on time or place

- Scientific research that will not jeopardise the ecosystem or scientific values of the Area and which cannot be served elsewhere;
- Essential management activities, including monitoring;

7(iii) Installation, modification or removal of structures

Structures shall not be erected within the Area except as specified in a Permit. All scientific equipment installed in the Area must be approved by Permit and clearly identified by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit.

7(iv) Location of field camps

When necessary for purposes specified in the Permit, temporary camping is allowed at the designated site on the broad rock / permanent snow platform about half-way along the NW coast at about 15 m altitude, and 200 m inland from the sea (Map 2).

7(v) Restrictions on materials and organisms which can be brought into the Area

No living animals, plant material or microorganisms shall be deliberately introduced into the Area and the precautions listed in 7(ix) below shall be taken to prevent accidental introductions. In view of the presence of breeding bird colonies on the island, no poultry products, including products containing uncooked dried eggs, shall be taken into the Area. No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless specifically authorised by Permit for specific scientific or management purposes. Anything introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of any introduction into the environment is minimised. If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*. The appropriate authority should be notified of anything released and not removed that was not included in the authorised Permit.

7(vi) Taking or harmful interference with native flora or fauna

Taking or harmful interference with native flora or fauna is prohibited, except by Permit issued in accordance with Annex II to the Protocol on Environmental Protection to the Antarctic Treaty. Where taking or harmful interference with animals is involved, the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica* should be used as a minimum standard.

7(vii) Collection or removal of anything not brought into the Area by the Permit holder

Collection or removal of anything not brought into the Area by the Permit holder shall only be in accordance with a Permit and should be limited to the minimum necessary to meet scientific or management needs. Permits shall not be granted in instances where it is proposed to take, remove or damage such quantities of soil, native flora or fauna that their distribution or abundance on Lagotellerie Island would be significantly affected. Anything of human origin likely to compromise

the values of the Area, which was not brought into the Area by the Permit Holder or otherwise authorised, may be removed unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case the appropriate authority should be notified.

7(viii) Disposal of waste
All wastes, including all human wastes, shall be removed from the Area. Human wastes may be disposed of into the sea.

7(ix) Measures that are necessary to ensure that the aims and objectives of the Management Plan can continue to be met

- Permits may be granted to enter the Area to carry out monitoring and site inspection activities, which may involve the small-scale collection of samples for analysis or review, or for protective measures.
- Any specific long-term monitoring sites shall be appropriately marked.
- To help maintain the ecological and scientific values of Lagotellerie Island special precautions shall be taken against introductions. Of concern are microbial, invertebrate or plant introductions from other Antarctic sites, including stations, or from regions outside Antarctica. All sampling equipment or markers brought into the Area shall be cleaned or sterilised. To the maximum extent practicable, footwear and other equipment used or brought into the Area (including backpacks, carry-bags and tents) shall be thoroughly cleaned before entering the Area.

7(x) Requirements for reports
Parties should ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organising the scientific use of the Area.

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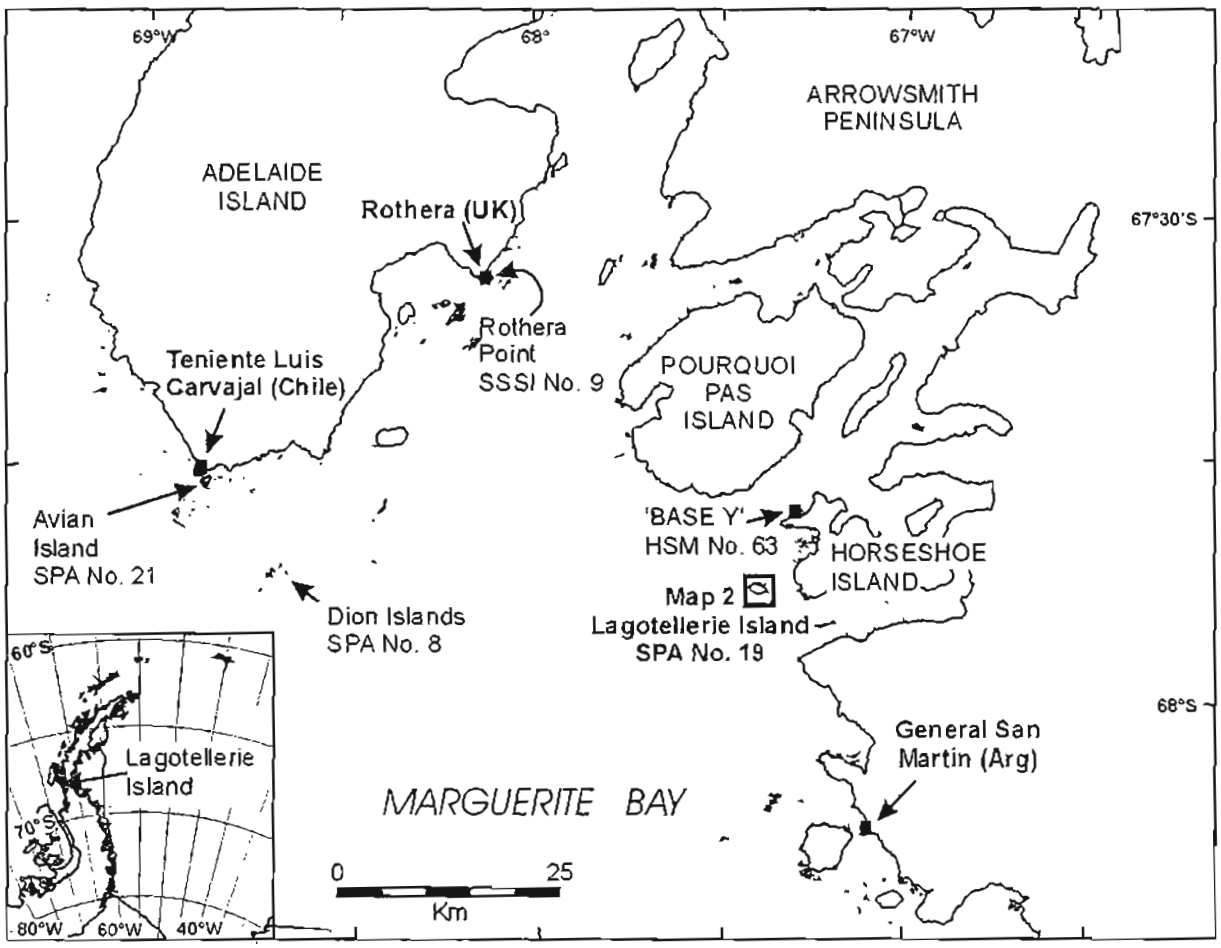
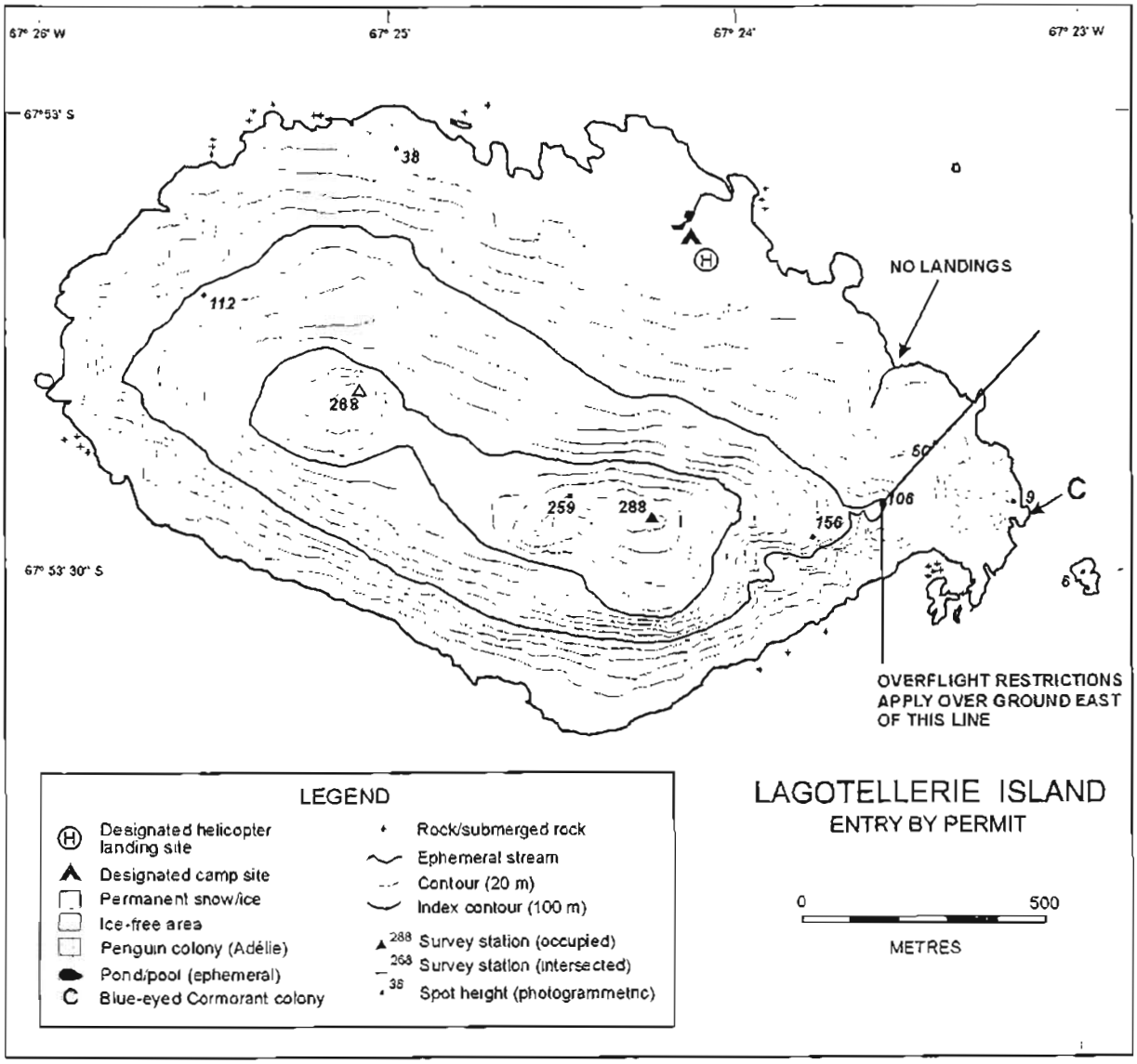
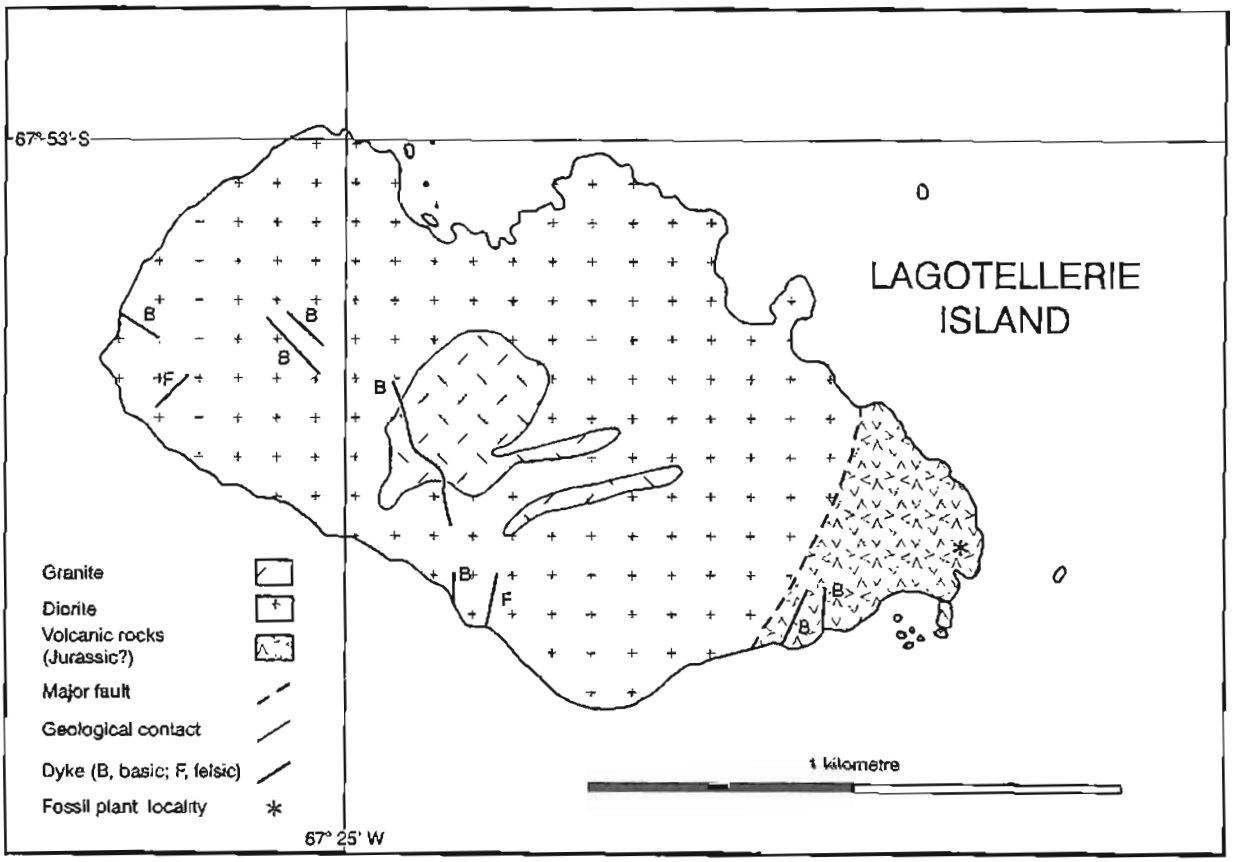


Map 1. Lagotellerie Island (SPA No. 19), Marguerite Bay, location map. Inset: location of Lagotellerie Island on the Antarctic Peninsula.



Map 2. Lagotellerie Island (SPA No. 19) topographic map.



Map 3. Lagotellerie Island (SPA No. 19) geological sketch map (note: sketch based on earlier data than Map 2).

Management Plan for Specially Protected Area (SPA) No. 20

NEW COLLEGE VALLEY, CAPE BIRD, ROSS ISLAND

1. Description of values to be protected

An area of 0.33 km² at Cape Bird was originally designated in Recommendations XIII-8 (1985, SSSI No. 10, Caughley Beach) and XIII-12 (1985, SPA No. 20, New College Valley) after proposals by New Zealand on the grounds that these areas contain some of the richest stands of mosses and associated microflora and fauna in the Ross Sea region of Antarctica. This is the only area on Ross Island where protection is specifically given to these 'cold' ground plants. SPA No. 20 was originally enclosed within SSSI No. 10 in order to provide more stringent access conditions within this part of the Area. SSSI No. 10 and SPA No. 20 have been merged in the current plan, and a Restricted Zone provides the more stringent access conditions within the former SPA. The boundaries of the Area have been revised in view of improved mapping and to follow more closely the ridges enclosing the catchment of New College Valley. Caughley Beach itself was adjacent to, but never a part of, the original Area, and for this reason the entire Area has been renamed as New College Valley, which was within both of the original sites.

Mosses (bryophytes) are the most highly evolved terrestrial plant life in this region, restricted to small, localised areas of water-flushed ground. In addition to rich moss cushions and carpets up to 20m², a diverse range of algal species inhabit streams in the Area, and collembolans (*Gomphiocephalus hodgsoni*) and mites (*Nanorchestes antarcticus* and *Stereotydeus mollis*) are plentiful on water surfaces and underneath rocks. The absence of lichens makes the species assemblage in this Area unique on Ross Island.

The proximity of the Cape Bird Hut (New Zealand) and the possibility of visits by tourists to Cape Bird means that this vulnerable area could easily be damaged by human impact if not provided with adequate protection. Designation of this Area is designed to ensure examples of this habitat type are adequately protected from casual visitors and overuse from scientific investigations. The susceptibility of mosses to disturbance by trampling, sampling, pollution or alien introductions is such that the Area requires long-term special protection. The ecosystem at this site is of exceptional scientific value for ecological investigations and the Restricted Zone is valuable as a reference site for future comparative studies.

2. Aims and objectives

Management at New College Valley aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- preserve a part of the natural ecosystem as a reference area for the purpose of future comparative studies;
- allow scientific research on the ecosystem, in particular on plants, algae and invertebrates in the Area, while ensuring protection from over-sampling;
- allow other scientific research provided it is for compelling reasons which cannot be served elsewhere;
- minimise the possibility of introduction of alien plants, animals and microbes into the Area;
- allow visits for management purposes in support of the aims of the management plan.

3. Management activities

The following management activities are to be undertaken to protect the values of the Area:

- Signs showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently, and a copy of this Management Plan shall be kept available, in all of the research hut facilities located within 10 km of the Area.
- Signs showing the location, boundaries and clearly stating entry restrictions shall be placed at appropriate locations at the boundaries of the Area and the Restricted Zone within to help avoid inadvertent entry.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition.
- Visits shall be made as necessary (no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.
- National Antarctic Programmes operating in the region are encouraged to consult together with a view to ensuring these steps are carried out.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map A: New College Valley, Cape Bird, Ross Island, regional topographic map. Map specifications: Projection - Lambert conformal conic. Standard parallels - 1st 76° 40' 00" S; 2nd 79° 20' 00"S. Central Meridian - 166° 30' 00" E. Latitude of Origin - 78° 01' 16.211" S. Spheroid - WGS84.

Map B: New College Valley protected area topographic map. Specifications are the same as those for Map A. Contours prepared at 1:2500 with a positional accuracy of ± 1.25 m (horizontal) and ± 1.25 m (vertical).

Figure 1: Perspective view of Cape Bird. The perspective is from an elevation of 350 m, 3.8 km out from the Area at a bearing of 190° SW. The perspective is from almost directly over Inclusion Hill looking north toward Cape Bird.

Figure 1a: An alternative perspective shows the preferred aircraft approach path from approximately 200 m offshore. The perspective is from an altitude of 420 m (1378 ft), 4 km out from the Area at a bearing of 210° SW.

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

Cape Bird is at the NW extremity of Mt. Bird (1800 m), an inactive volcanic cone which is probably the oldest on Ross Island. New College Valley is located south of Cape Bird on ice-free slopes above Caughley Beach, which lies between two Adélie penguin colonies known as the Cape Bird Northern and Middle Rookeries (Maps A and B). The Area, comprising veneered glacial moraines at the fore of the Cape Bird Ice Cap, consists of seaward dipping olivine-augite basalts with scoriaceous tops erupted from the main Mt. Bird cone.

The NW corner of the north boundary of the Area is approximately 100 m south of the Cape Bird Hut, while the southern boundary is about 700 m north of Middle Rookery (Map A). The north boundary of the Area extends NW upslope and eastward toward a prominent terminal moraine ridge 20 m from the Cape Bird Ice Cap. The boundary follows this ridge SE until the ridge disappears where it joins the glacier, from where the boundary continues SE following the glacier edge to the southern boundary. The south boundary is a straight line crossing the broad southern flank of New College Valley, and is marked at either end by two cairns, one in the western corner of the Area and the other on the hilltop 100 m from the Cape Bird Ice Cap glacier edge. The west boundary of the Area follows the top of the coastal cliffs of Caughley Beach for a distance of 650 m.

Northwest-facing New College Valley carries meltwater from the Cape Bird Ice Cap during the summer. Streams in the Area are fed by melt from persistent summer snow drifts and have eroded

their own shallow gullies and channels. The ground is largely covered by stones and boulders of volcanic origin which have been reworked by glacial action.

The Area contains some of the more extensive ephemeral stream course distributions of the moss *Hennediella heimii* (formally *Bryum antarcticum*) on Ross Island. Surveys have shown that this moss, together with much lower occurrences of two other species – *Bryum subrotundifolium* (formally *Bryum argenteum*) and *Bryum pseudotriquetrum* – are confined almost entirely to the stream courses across the steep till and scoria covered slopes. The Area includes the full course of three stream systems that contain significant growths of algae, together with the mosses. The mosses are generally associated with algal growths, namely rich, red-brown oscillatorian felts and occasional reddish-black growths of *Nostoc commune*.

The microfauna consists of abundant populations of Collembolans (*Gomphiocephalus hodgsonii*) and mites (*Nanorchestes antarcticus* and *Stereotydeus mollis*) found on water surfaces and beneath rocks. Nematodes, rotifers, tardigrades and protozoa are also found within the Area.

Skuas (*Catharacta maccormicki*) frequently rest on Caughley Beach and overfly, land and nest within the Area. Adélie penguins (*Pygoscelis adeliae*) from the nearby colonies do not nest in the Area, but have been observed occasionally to traverse across New College Valley.

6(ii) Restricted and managed zones within the Area

An area of New College Valley is designated a Restricted Zone in order to preserve part of the Area as a reference site for future comparative studies, while the remainder of the Area (which is similar in biology, features and character) is more generally available for research programmes and sample collection. The Restricted Zone encompasses ice-free slopes within New College Valley above Caughley Beach some of which are north-facing with snow drifts which provide a ready supply of melt water to foster moss and algal growth.

The NW corner of the Restricted Zone is 60 m to the south and across a small gully from the NW corner of the Area. The north boundary of the zone extends 500 m upslope from the NW corner, following a faint but increasingly prominent ridge SE to a point in the upper catchment of New College Valley marked by a cairn approximately 60 m from the ice terminus of the Cape Bird Ice Cap. The Restricted Zone boundary extends 110 m SW across the valley to a cairn marking the SE corner of the zone. The south boundary of the Restricted Zone extends in a straight line from this cairn 440 m NW down a broad and relatively featureless slope to the west boundary of the Area. A cairn is placed 40m upslope from the SW corner of the Restricted Zone to mark the lower position of the south boundary.

Access to the Restricted Zone is allowed only for compelling scientific and management (such as inspection and review) purposes that cannot be served by visits elsewhere in the Area.

6(iii) Structures within and near the Area

Structures known to exist in the Area include a United States Navy Astrofix marker, cairns marking the boundaries of the Area and the Restricted Zone, a signpost situated at the northern end of the Area and an approximately one meter square wooden frame marking the site of an experimental oil spill from 1982. The Cape Bird Hut is located 150 m north of the western corner of the Area (Map B). A water tank and associated hosing servicing the hut were removed from the Area in the 1995-96 season.

6(iv) Location of other protected areas within close proximity of the Area

The nearest protected areas are: Lewis Bay, Mount Erebus (SPA 26), approximately 25 km SE; Tramway Ridge (SSSI No.11) 30 km SSE; Cape Crozier (SSSI No. 4) 75 km SE; Cape Royds (SSSI No.1) and Cape Evans (SPA No. 25) 35 km and 45 km south on Ross Island respectively; and Beaufort Island (SPA No. 5) 40 km to the north.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by appropriate national authorities. Conditions for issuing a Permit to enter the Area are that:

- outside of the Restricted Zone, it is issued only for scientific study of the ecosystem, or for compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection or review;

- access to the Restricted Zone is allowed only for compelling scientific or management reasons that cannot be served elsewhere in the Area;
- the actions permitted are not likely to jeopardise the ecological or scientific values of the Area or other permitted activities;
- any management activities are in support of the objectives of the Management Plan;
- the actions permitted are in accordance with the Management Plan;
- the Permit, or a copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- the Permit shall be issued for a stated period.

7(i) Access to and movement within the Area
Vehicles are prohibited within the Area and access shall be by foot. Helicopters are prohibited from landing within the Area. A helicopter landing site is located outside the Area below the cliffs on Caughley Beach, 100 m west of the west boundary of the Area. Between October and February the preferred flight path is an approach from the south above Middle Rookery. Flights north of the helicopter pad may be necessary under certain wind conditions but should follow the recommended aircraft approach and departure routes. See Figures 1 and 1a and Map A for the recommended aircraft approach routes into and out of Cape Bird. Overflight of the Area lower than 50 m (ffi150 ft) above ground level is prohibited. Hovering over the Area is not permitted lower than 100m (ffi300 ft) above ground level. Use of helicopter smoke grenades within the Area is prohibited.

Access into the Area should preferably follow the path from the Cape Bird Hut (New Zealand). Visitors should avoid areas of visible vegetation and care should be exercised walking in areas of moist ground, particularly the stream course beds, where foot traffic can easily damage sensitive soils, plant and algal communities, and degrade water quality: walk around such areas, on ice or rocky ground. Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise effects.

Access to regions south of the Area from the Cape Bird Hut should be made by a route below the cliffs along Caughley Beach.

7(ii) Activities that are or may be conducted in the Area, including restrictions on time or place
- Scientific research that will not jeopardise the ecosystem of the Area;
- Essential management activities, including monitoring and inspection.

7(iii) Installation, modification or removal of structures
No structures are to be erected within the Area except as specified in a Permit. All scientific equipment installed in the Area must be authorised by Permit and clearly identified by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit.

7(iv) Location of field camps
Camping within the Area is prohibited.

7(v) Restrictions on materials and organisms which can be brought into the Area
No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions. No live poultry shall be brought into the Area. Dressed poultry should be free of disease or infection before shipment to the Antarctic and, if introduced into the Area for food, all parts and waste of poultry shall be completely removed from the Area, and incinerated or boiled for long enough to kill any potentially infective bacteria or viruses. No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted. All materials introduced shall be

for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimised.

7(vi) Taking or harmful interference with native flora or fauna
This is prohibited, except in accordance with a Permit. Where animal taking or harmful interference is involved, this should, as a minimum standard, be in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.

7(vii) Collection or removal of anything not brought into the Area by the Permit holder
Material may be collected or removed from the Area only in accordance with a Permit and should be limited to the minimum necessary to meet scientific or management needs. Material of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit holder or otherwise authorised, may be removed from any part of the Area, including the Restricted Zone, unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case the appropriate authority should be notified.

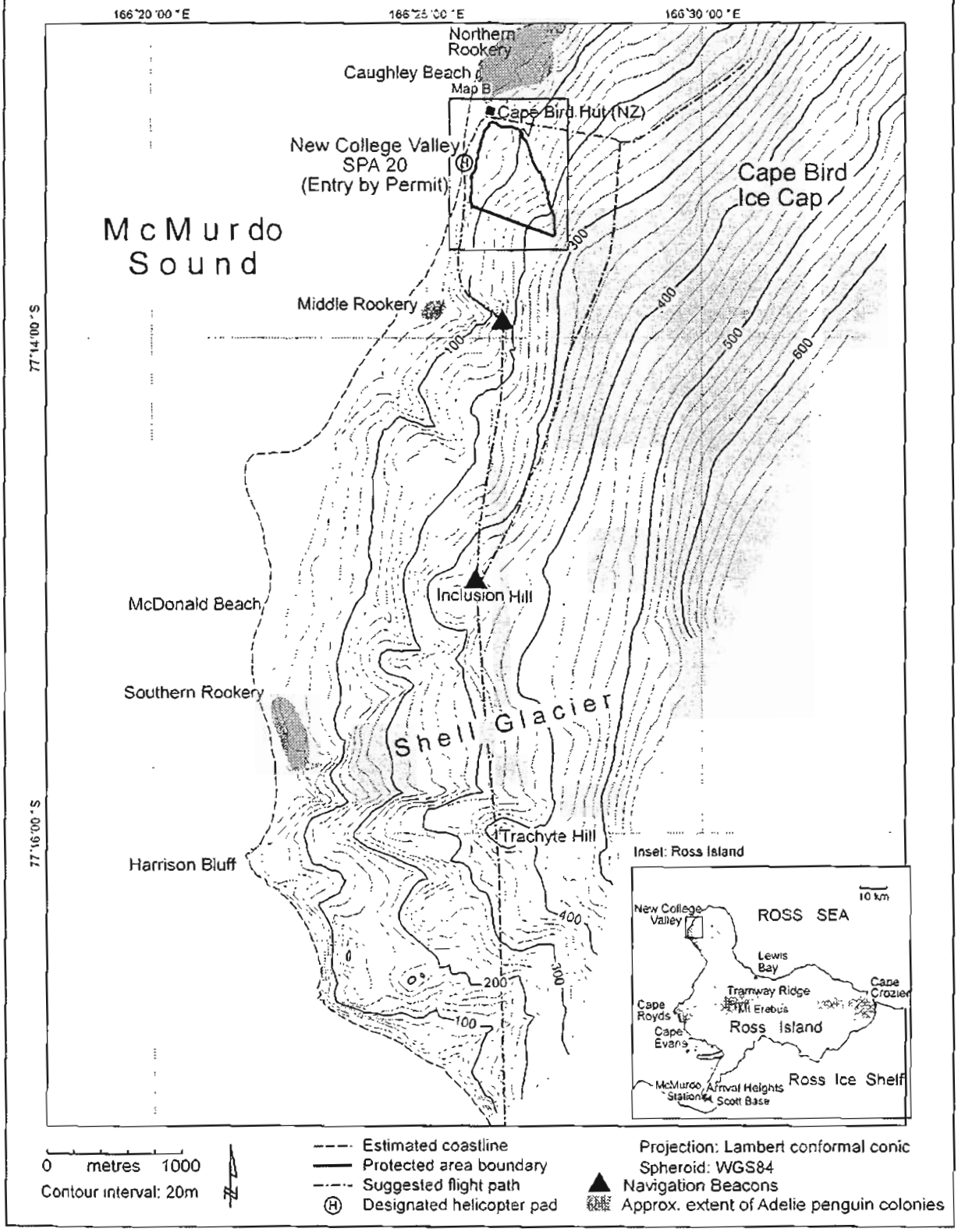
7(viii) Disposal of waste
All wastes, including all human wastes, shall be removed from the Area.

7(ix) Measures that are necessary to ensure that the aims and objectives of the Management Plan can continue to be met

- Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of small samples for analysis or review, to erect or maintain signposts or for management activities.
- Any specific sites of long-term monitoring shall be appropriately marked.
- To help maintain the ecological and scientific values of the isolation and relatively low level of human impact at the Area visitors shall take special precautions against introductions. Of particular concern are microbial or vegetation introductions sourced from soils at other Antarctic sites, including stations, or from regions outside Antarctica. To minimise the risk of introductions, visitors shall thoroughly clean footwear and any equipment to be used in the area — particularly sampling equipment and markers — before entering the Area.

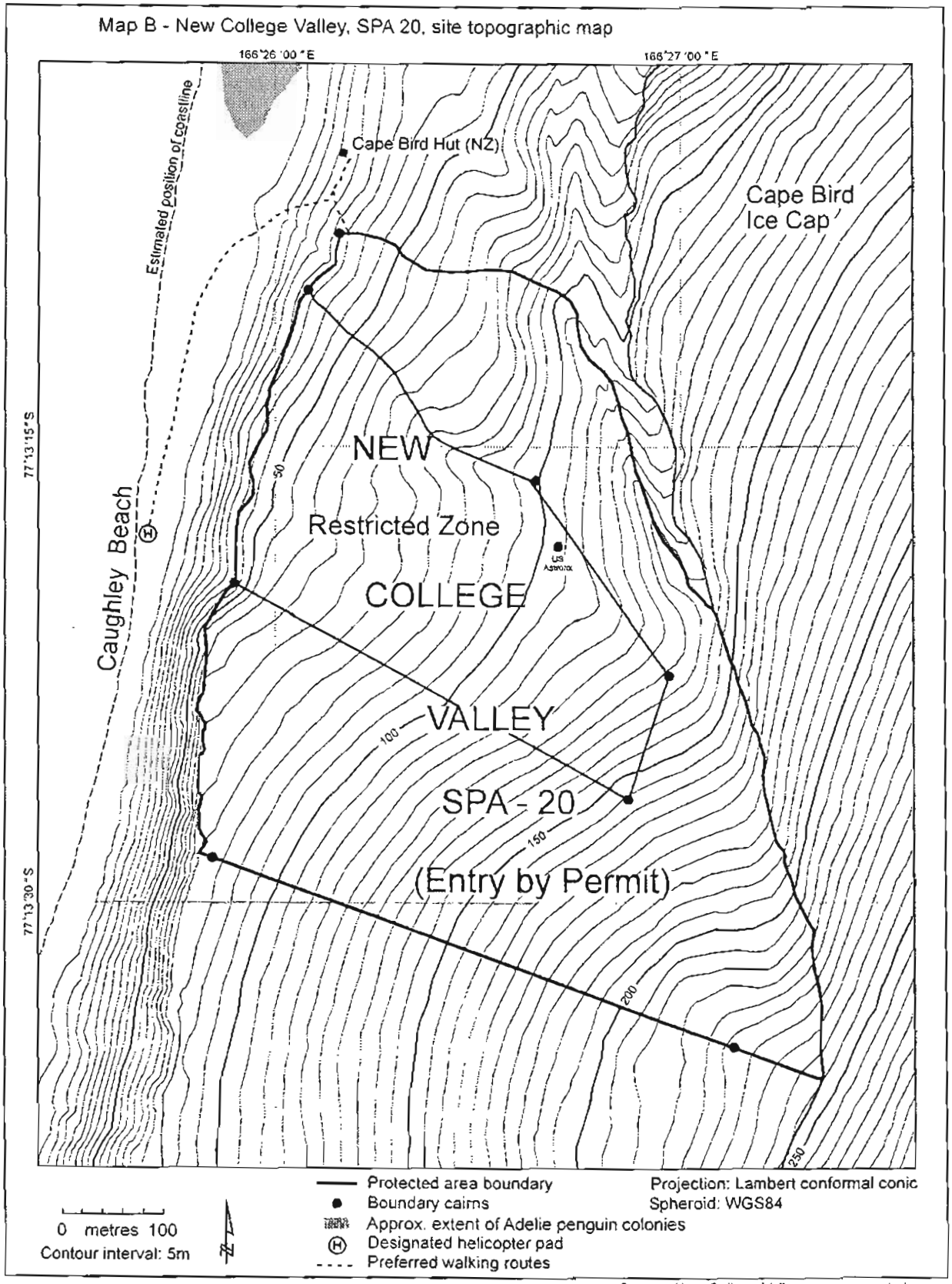
7(x) Requirements for reports
Parties should ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage to be used both in any review of the management plan and in organising the scientific use of the Area.

Map A - New College Valley SPA 20, Cape Bird, Ross Island, regional topographic



Source: New College Valley management plan

Map B - New College Valley, SPA 20, site topographic map



Source: New College Valley management plan

Figure 1 - New College Valley, Cape Bird, Perspective View

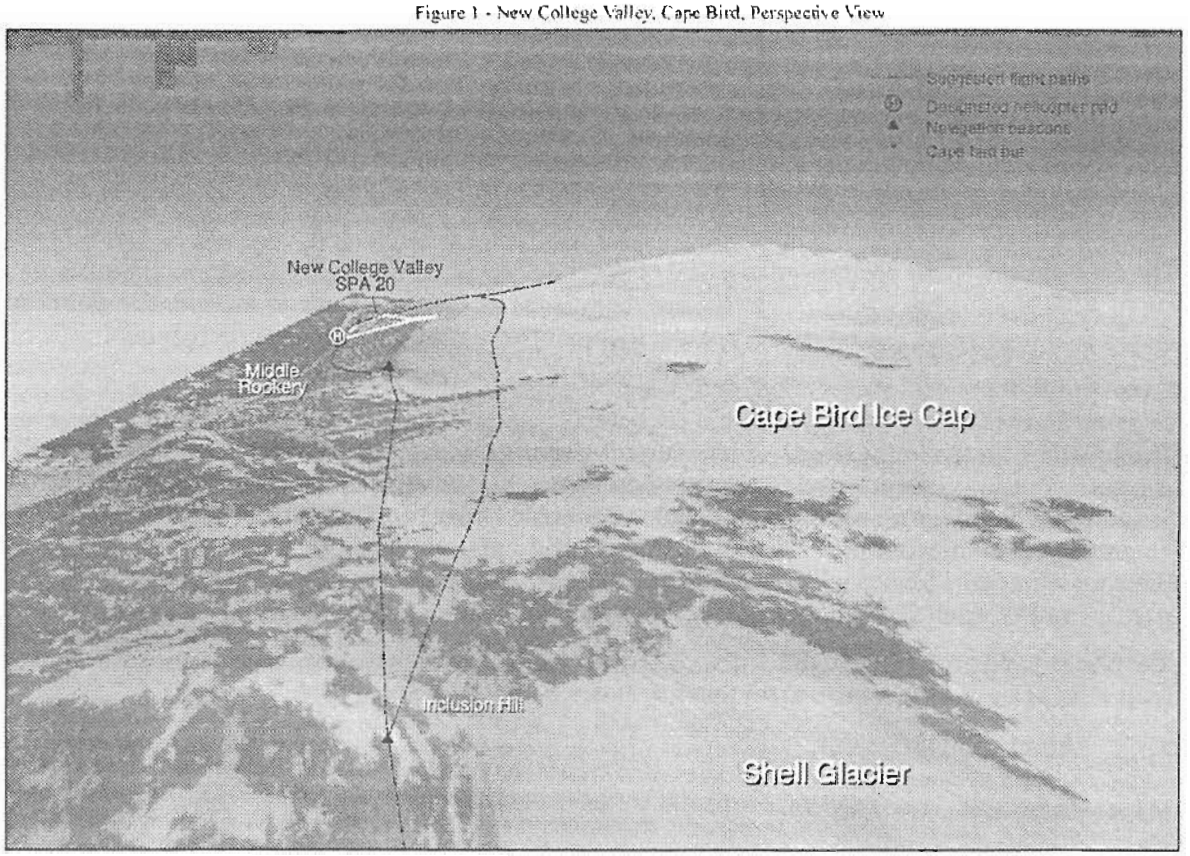
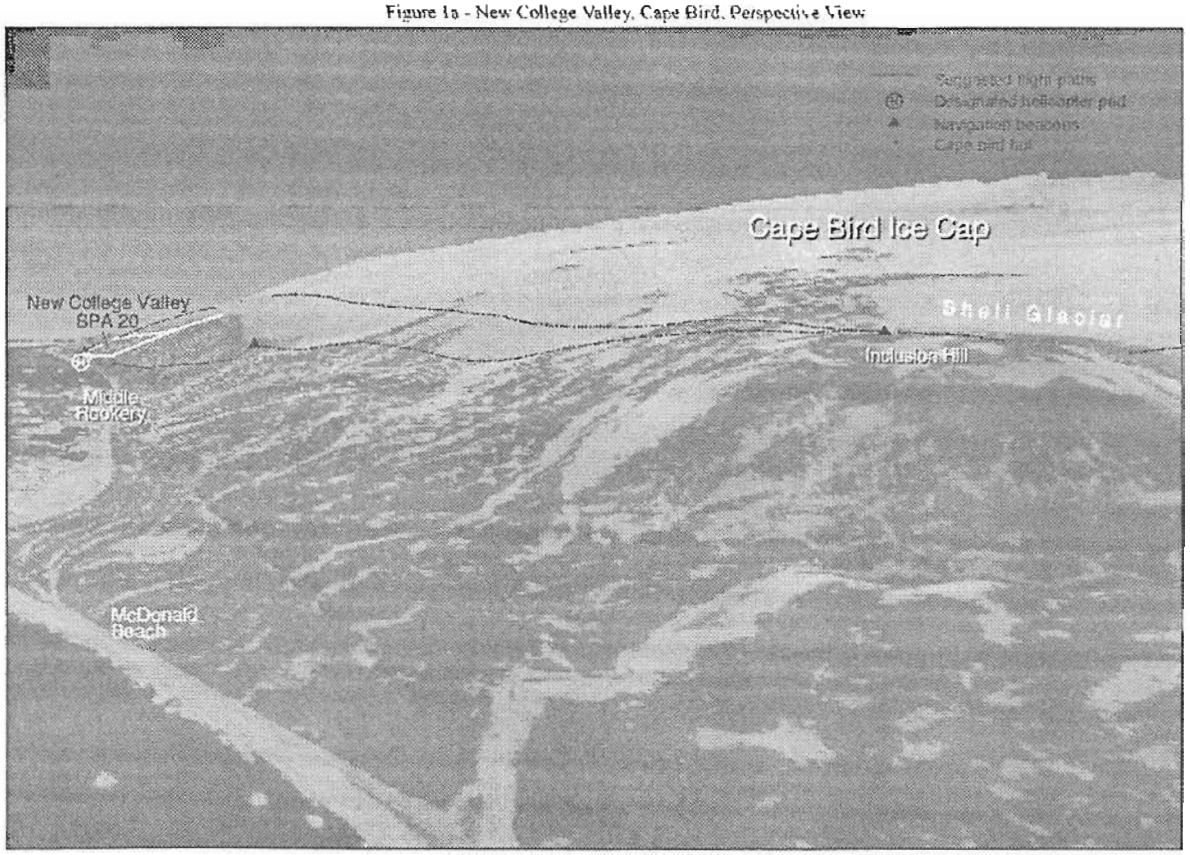


Figure 1a - New College Valley, Cape Bird, Perspective View



Management Plan for Site of Special Scientific Interest No. 8

WESTERN SHORE OF ADMIRALTY BAY, KING GEORGE ISLAND, SOUTH SHETLAND ISLANDS

1. Description of Values to be Protected

The area was originally designated as a Site of Special Scientific Interest in Recommendation X-5 (1979, SSSI No. 8) after a proposal by Poland, because of its diverse avian and mammalian fauna and locally rich vegetation, providing a representative sample of maritime Antarctic ecosystem.

These grounds are still relevant. Research has now shown that the colonies of Adélie Penguin (*Pygoscelis adeliae*) and Gentoo Penguin (*Pygoscelis papua*) are the largest on the island. There are also breeding areas of other birds - Giant Petrel (*Macronectes giganteus*), Cape Pigeon (*Daption capense*), Wilson's Storm Petrel (*Oceanites oceanicus*), Black-bellied Storm Petrel (*Fregetta tropica*), Sheathbill (*Chionis alba*), McCormick's Skua (*Catharacta maccormicki*), Antarctic Skua (*Catharacta antarctica*), Dominican Gull (*Larus dominicanus*), and Antarctic Tern (*Sterna vittata*). Furthermore, there are numerous sites at which Elephant Seals (*Mirounga leonina*), Fur Seals (*Arctocephalus gazella*) and Weddell Seals (*Leptonychotes weddelli*) haul out or breed.

The values to be protected are those associated with the exceptional assemblage of animals and the long-term scientific studies on them that have been undertaken since 1976.

2. Aims and Objectives

Management of the Area aims to:

- protect all bird colonies and seal breeding areas against unnecessary and potentially damaging human activities, and
- undertake any essential management activities necessary to protect the scientific value of the site.
- protect long-term research

3. Management Activities

Ensure that the biologically the Area is adequately monitored and that sign boards and boundary markers are serviced.

4. Period of Designation

The Area is designated for an indefinite period.

5. Maps

Map A shows the location of King George Island in Antarctica.

Map B shows the Western shore of Admiralty Bay, Site of Special Scientific Interest (SSSI) No. 8, in relation to King George Island.

Map C shows the Area in greater detail.

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

The area consists of land on the western shore of Admiralty Bay (Map C). The westerly boundary extends from Patelnia (Telefon) Point (62°13'55"S, 58°28'45"W), NNW to The Tower (a distinctive peak above Tower Glacier, 366.9 m at 62°12'50"S, 58°29'00"W), then continuing in a straight line to encompass the base of Jardine Peak (62°10'05"S, 58°29'45"W). This line then runs NE to the sea (Admiralty Bay) where it bisects the coast immediately north of Rakusa Point (62°09'45"S,

58°27'25"W). Thereafter the Area is all the land which is bounded by the coastline south towards Demay Point (62°12'50"S, 58°25'15"W), then SW along the coast to Patelnia (Telefon) Point.

The western edge of the Area is adjacent to the Warsaw Icefield, with the north-western corner being ice-free in the vicinity of Jardine Peak. Outside of the northern boundary is a small area of ice-free land. Steep cliffs overlook a narrow beach and the waters of Ezcurra Inlet in the north-western section of the ice-free area; and in the north-eastern section there are occasional shallow beaches which extend to the sea, where H. Arctowski station is located, 400 m. outside of the Area. Three small glaciers, Ecology, Baranowski, and Tower, descend from the Warsaw Icefield onto these shores.

There are markers on the northern edge of the Area where the site has a boundary on land, immediately south of H. Arctowski station. The western boundary is not delineated by virtue of fact that it traverses a high (ca. 350 m) mobile icefield. The coastline defines the Area's eastern and southern stretches.

Twelve bird species regularly nest in the Area: Adélie Penguin (*Pygoscelis adeliae*) - 18838 nests in 1988/89 and 15151 nests in 1994/95; Chinstrap Penguin (*Pygoscelis antarctica*) - 3353 nests in 1988/89 and 2545 nests in 1994/95; Gentoo Penguin (*Pygoscelis papua*) - 2239 nests in 1988/89 and 2287 nests in 1994/95; Giant Petrel (*Macronectes giganteus*) - 315 nests in 1988/89 and 201 nests in 1994/95; Cape Pigeon (*Daption capense*) - 43 nests in 1988/89 and 290 nests in 1994/95; Wilson's Storm Petrel (*Oceanites oceanicus*); Black-bellied Storm Petrel (*Fregetta tropica*); Sheathbill (*Chionis alba*) - 9 nests in 1988/89 and 2 nests in 1994/95; McCormick's Skua (*Catharacta maccormicki*) - 38 nests (together with *C. antarctica) in* 1988/89 and 64 territories in 1994/95; Dominican Gull (*Larus dominicanus*) - 52 nests in 1988/89 and 46 nests in 1994/95; Antarctic Tern (*Sterna vittata*) - 188 nests in 1988/89 and 132 nests in 1994/95.

Moreover 4 alien bird species from South America have been observed, as stray visitors but which stayed in the Area only temporarily: Black-necked Swan (*Cygnus melanocoryphus*), South Georgia Pintail (*Anas georgica*), White-rumped Sandpiper (*Calidris fuscicollis*), Wilson's Phalarope (*Pharalopus tricolor*).

Continuing long-term ecological studies in this area are aimed principally at penguins and associated species.

Elephant Seals (*Mirounga leonina*), Fur Seals (*Arctocephalus gazella*) and Weddell Seals (*Leptonychotes weddelli*) haul out at numerous sites. Leopard Seals (*Hudrurga leptonyx*) and Crabeater Seals (*Lobodon carcinophagus*) are frequently seen on the ice floes during the winter. Breeding of Elephant Seals and Weddell Seals are observed in the Area.

The ice-free areas within the Area (20% of its surface) are formed by recent and raised pebble-cobble beaches, recent and sub-recent moraines, mountainous peninsula, rocky islets and spurs. The terrain is heavily shaped by glacial, nival and coastal marine processes.

The Area vegetation is typical of the Maritime Antarctic. Ice-free terrain (20% of its surface) is only partly occupied by plants and thus the landscape is of a semi-desert character. Dry areas and rocks are dominated by lichens. Locally, flowering plants such as *Deschampsia* and *Colobanthus* are important, these species occupying fairly large areas particularly in the vicinity of H. Arctowski station and constitute one of the largest areas covered by these species in the Antarctic. In the immediate vicinity of H. Arctowski station, there is an alien grass, *Poa* sp. The vegetation from 0 to 60 m a.s.l. is dominated by *Bryophyta* and flowering plants, and above 60 m a.s.l. by lichens.

6(ii) Restricted zones within the Area
There are no prohibited zones within the Area, but access to bird breeding areas should be restricted during the breeding season (September to March) and damage to vegetation should be avoided by restricting access to the marked path.

6(iii) Location of structures within the Area
The following are the structures in the Area (Map C):

- P. J. Lenie field camp (United States of America); consisting of a small hut (for four persons), on the beach between Llano Point and Sphinx Hill which has been in use during the summer since 1977

- a caravan (belonging to Poland) functioning as a summer field laboratory for two persons, south of Demay Point.

6(iv) Location of other Protected Areas within close proximity
The Western shore of Admiralty Bay, SSSI No. 8, is a part of Antarctic Specially Managed Area (ASMA), Admiralty Bay, King George Island (South Shetland Islands).

SSSI No. 5, Fildes Peninsula and SSSI No. 33, Ardley Island, lie about 27 km west of western shore of Admiralty Bay. SSSI No. 13, Potter Peninsula, lies about 15 km to the west and SSSI No. 34, Lions Rump, lies about 20 km to the east.

7. Permit Conditions

Permits may be issued only by appropriate national authorities as designated under Annex V Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty.

Conditions for issuing a permit for the Area are that:

- it is issued only for scientific study of the ecosystem, or for compelling scientific reasons that cannot be served elsewhere,
- the actions permitted will not jeopardize the natural ecological system or scientific values of the Area,
- any management activities are in support of the objectives of the Management Plan,
- the actions permitted are in accordance with this Management Plan,
- the permit, or a copy, must be carried within the Area,
- a report is supplied to the authority named in the Permit, and
- the Permit shall be valid for a stated period.

7(i) Access to and movement within the Area
The access to the Area is restricted to the northern end, near H. Arctowski station. Access from the sea is only permitted by inflatable boats. No access to the beach area between Llano Point and Sphinx Hill from the sea is permitted, except to resupply the P. J. Lenie field camp, or in an emergency. Access from the sea to areas further south is permitted but the visitors should at all times avoid disturbance to birds and seals or damage of vegetation.

Landing of helicopters within the Area is permitend only on the glaciers, except in an emergency. Helicopters are allowed to land at *H. Arctowski* station only, on a special designed helipad. No helicopter or fixed wing aircraft is permitted to fly over the Area below 250 m altitude above the highest point. All helicopters should maintain a distance of at least 500 m from the Area during take-off and landing at *H. Arctowski* station. To avoid flying over bird colonies, approach from and towards the sea, or over Warsaw Icefield, is recommended.

Pedestrian routes are designated (Map C) and marked within the Area. Persons on foot should at all time avoid disturbance to birds, seals and damage of vegetation.

Vehicles are prohibited in the Area.

7(ii) Activities which are or may be conducted within the Area; including restrictions on time and place

- Scientific research which cannot be conducted outside the Area, and which will not damage or interfere with any aspect of the Area's biological, geological, or aesthetic values.
- Essential management activities, including monitoring.

7(iii) Installation, modification or removal of structures
No further structures are to be erected in the Area, or scientific equipment installed, except for essential scientific or management activities, as specified in the Permit.

7(iv) Location of the field camps
Parties should not normally camp in the Area. Both P. J. Lenie field camp and the Polish caravan provide research accommodation, by agreement. The caravan can accommodate up to two persons.

7(v) Restrictions on materials and organisms which may be brought into the Area
No living animals or plant material shall be deliberately introduced into the Area.

Poultry product shall not be taken into the Area. Any chemical which may be introduced for compelling scientific purposes specified in the Permit, shall be removed from the Area at, or before, the conclusion of the activity for which the permit was granted.

Fuel, food and other materials are not to be stored in the Area except in support of activities for which the Permit has been granted. All such materials should be kept to a minimum, made secure against the elements and removed when no longer required.

7(vi) Taking or harmful interference with native flora and fauna
Taking or harmful interference is prohibited, except in accordance with a Permit. When animal taking or harmful interference is involved this should be in accordance with the SCAR Code of Conduct for Use of Animal for Scientific Purpose in Antarctica, as a minimum standard.

7(vii) Collection and removal of anything not brought into the Area by the Permit holder
Material may be collected or removed from the Area only in accordance with a Permit. This includes rock specimens, whale bones, artefacts of the whaling industry, and any item belonging to or attached to any aspect of the historical uses of Admiralty Bay which are not specifically described herein.

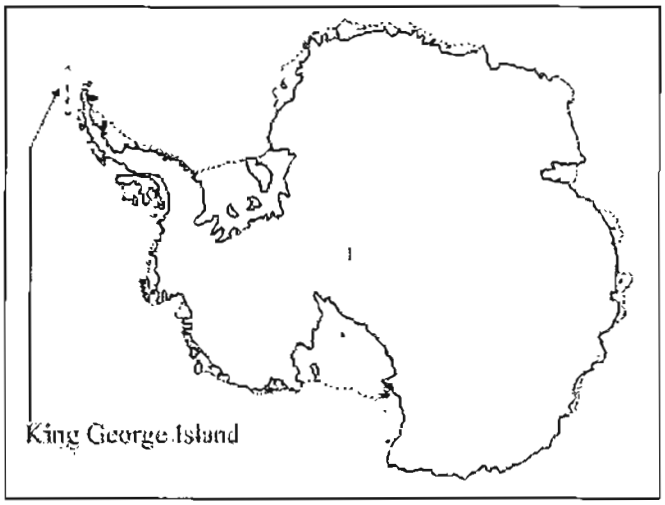
Debris of human origin may be removed from the beaches of the Area. Exceptionally, dead specimens of fauna or flora may be removed for laboratory examination without a Permit.

7(viii) Disposal of waste
All waste shall be removed from the Area, with the exception that human waste should be deposited in the sea.

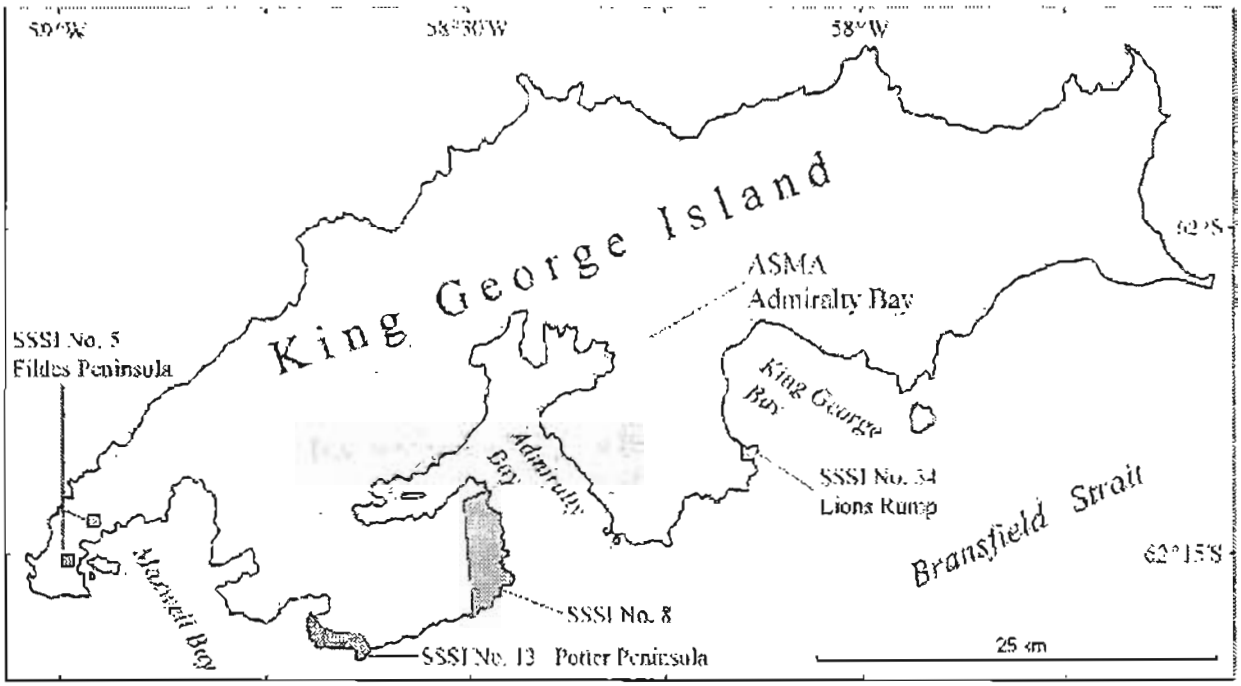
7(ix) Measures that may be necessary to ensure that the aims and objects of the Management Plan continue to be met
The Permit, or a copy, must be carried within the Area.

Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of small samples for analysis or audit, or to erect or maintain signposts, or other protective measures.

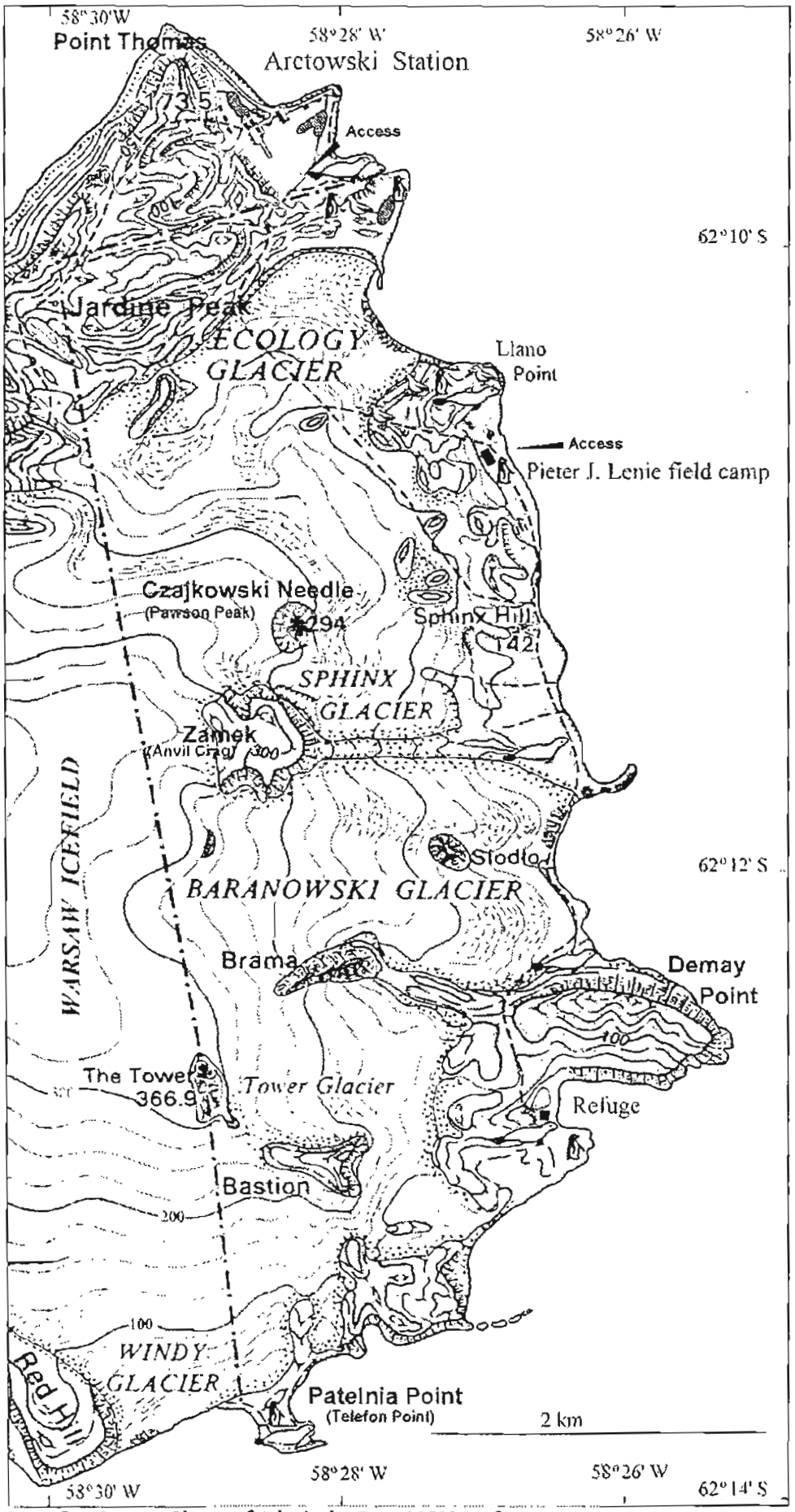
7(x) Requirements for reports
The principal Permit Holder for each issued Permit shall submit a report of activities conducted in the Area. The Visit Report form suggested by SCAR provides a suitable model. This report shall be submitted to the authority named in the Permit as soon as practicable, but no later than 6 months after the visit has taken place. Such reports should be stored indefinitely and made accessible to interested Parties, SCAR, CCAMLR and COMNAP if requested, to provide the documentation of human activities within the Area, which could be utilized for good management.



Map A. Location of King George Island.



Map B.Western shore of Admiralty Bay, SSSI No. 8, in relation to Antarctic Specially Managed Area (ASMA) and other SSSI`s on King George Island.



Map C. Western Shore of Admiralty Bay, SSSI No. 8.

Management Plan for Site Of Special Scientific Interest No. 17

CLARK PENINSULA, BUDD COAST, WILKES LAND

Clark Peninsula was designated as a Site of Special Scientific Interest in 1985 (ATCM Recommendation XIII-8): put forward by Australia. The Area is approximately 9.75 square kilometres in area and is adjacent to the Windmill Islands Group on the Budd Coast, Wilkes Land, Eastern Antarctica. (Maps A and B.) Scientific research within the Area has focused on the plant communities but has also included studies of the Area's penguin colonies. The Area has served as a valuable comparative site for similar plant communities and penguin colonies closer to Casey Station which are subject to greater disturbance.

1. Description of Values to be Protected

Excluding the Antarctic Peninsula, the largely undisturbed terrestrial ecosystem of Clark Peninsula supports one of the most extensive and best-developed plant communities on continental Antarctica. The Area has rich associations of macrolichens and bryophytes that occupy very specific ecological niches. Within the relatively complex plant communities, 33 species of bryophytes and macrolichens have been found with 11 cryptogamic sociations being identified. This vegetation forms a continuum of ecological variation along environmental gradients of soil moisture, soil chemistry, and microclimate. As such, the Area has intrinsic ecological value and scientific importance, particularly to botanists, microbiologists, soil scientists and glacial geomorphologists.

Within the Area, moss and lichen communities are used as control plots to monitor the environmental impacts of nearby Casey Station. The Area provides baseline data with which to compare changes in similar plant communities in the immediate surroundings of Casey Station. The cryptogamic plant communities are also being monitored in relation to short-term microclimate fluctuation and long-term climate change in the region since deglaciation 8000-5000 years BP.

Significant and relatively undisturbed breeding populations of Adélie penguin (*Pygoscelis adeliae*), South polar skuas (*Catharacta maccormicki*), Wilson's storm petrels (*Oceanites oceanicus*), and Snow petrels (*Pagodroma nivea*), are established at Whitney and Blakeney Points within the Area. These populations provide valuable comparative data for assessing and measuring human impacts and disturbance of penguin colonies on nearby Shirley Island close to Casey Station.

The Area supports an exceptional vegetation cover for continental Antarctic ice free localities, with a wide range of vegetation communities. The Area requires protection because of its ecological importance, its significant scientific value, and the limited geographical extent of the ecosystem. The Area is vulnerable to disturbance through trampling, sampling, pollution or alien introductions, while being sufficiently distant from Casey Station to avoid immediate impacts and disturbances from activities carried out there. It is because of the scientific and ecological values, and the values of the Area for long term monitoring, that it should continue to be protected.

2. Aims and Objectives

Management at Clark Peninsula aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing undue human disturbance;
- conserve a part of the natural ecosystem as a reference area for the purpose of comparative studies and to assess direct and indirect effects of Casey Station;
- allow scientific research on the ecosystem and elements of the ecosystem, both geological and biological, while ensuring protection from over-sampling and disturbances;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management Activities

The following management activities will be undertaken to protect the values of the Area:

- signs illustrating the location and boundaries, with clear statements of entry restrictions, shall be placed at appropriate locations at the boundaries of the Area to help avoid inadvertent entry;
- information on the location of the Area (stating special restrictions that apply) shall be displayed prominently, and a copy of this Management Plan shall be kept available, at the adjacent abandoned Wilkes Station, the "Wilkes Hilton" (unofficial name) Refuge Hut on Stonehocker Point, "Jack's Donga" (unofficial name) Refuge Hut, and at Casey Station and will be provided to all visiting ships;
- markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer required;
- the Management Plan shall be reviewed at least every five years and updated as required.

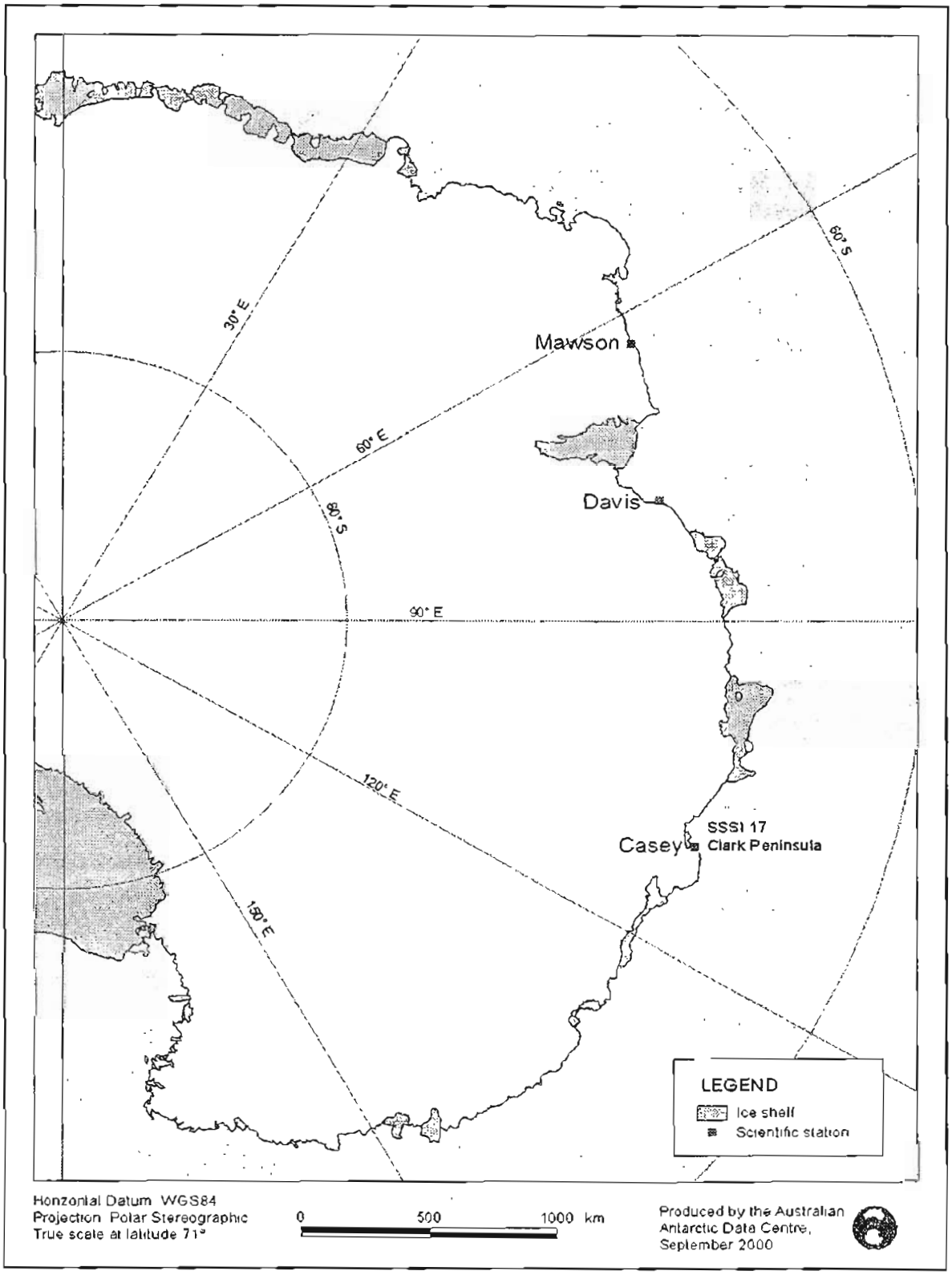
4. Period of Designation

Designated for an indefinite period.

5. Maps

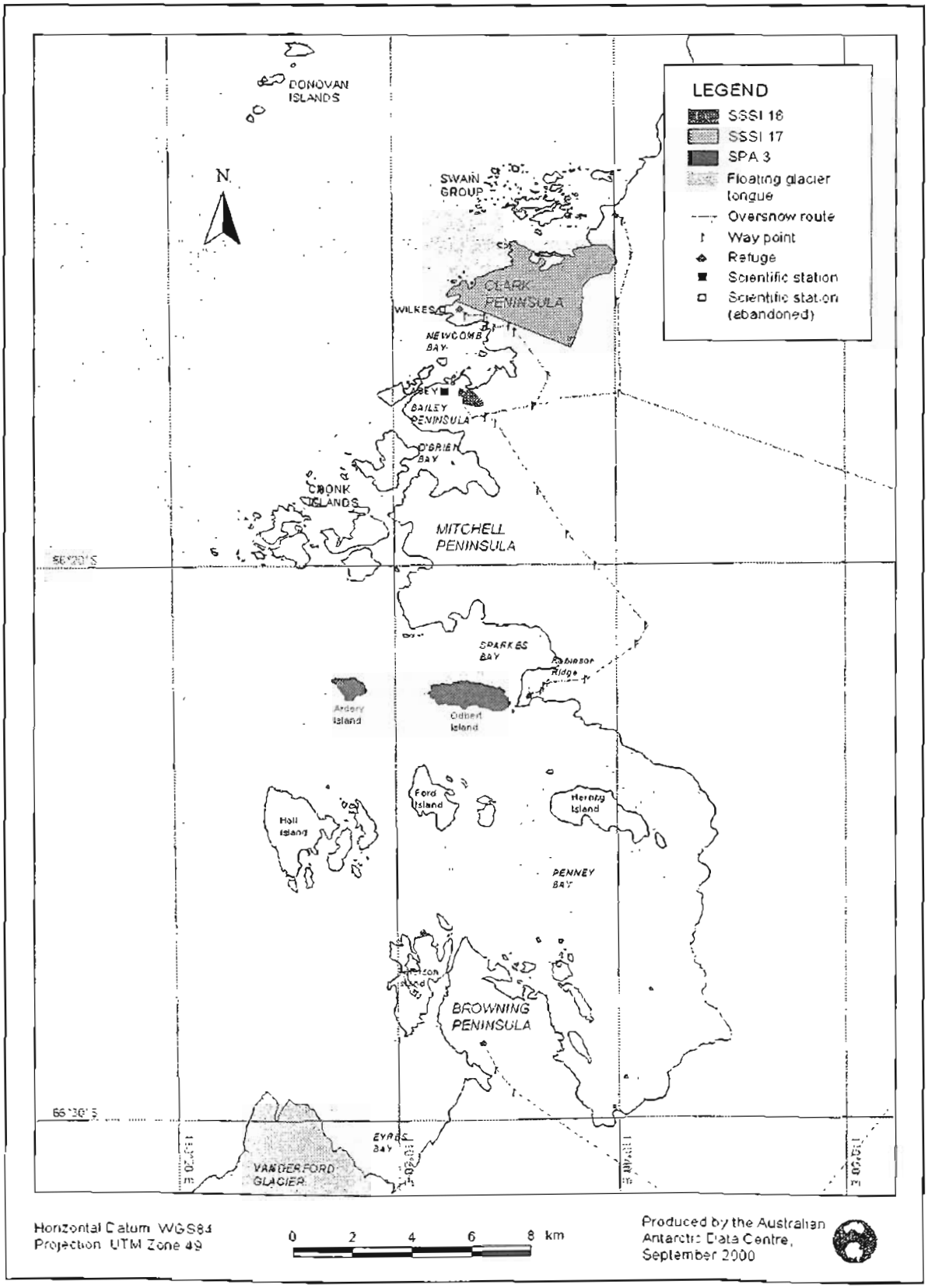
Map A: East Antarctica, showing location of Clark Peninsula.
Projection: Polar Stereographic
Horizontal Datum: WGS84. True scale of latitude 71°.

MAP A East Antarctica, Location of Clark Peninsula
Site of Special Scientific Interest, No. 17.



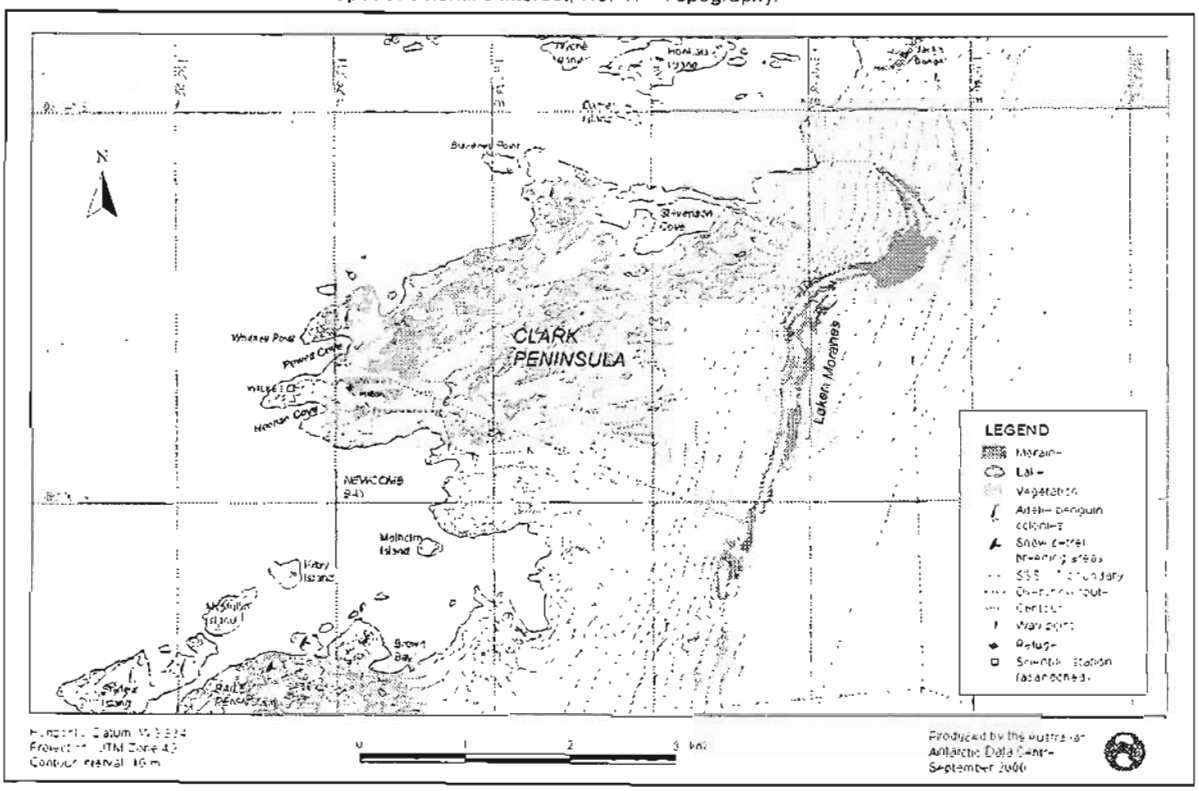
Map B: Windmill Islands, showing location of Clark Peninsula.
Projection: UTM Zone 49
Horizontal Datum: WGS84.

MAP B Clark Peninsula Site of Special Scientific Interest in Windmill Islands, East Antarctica.



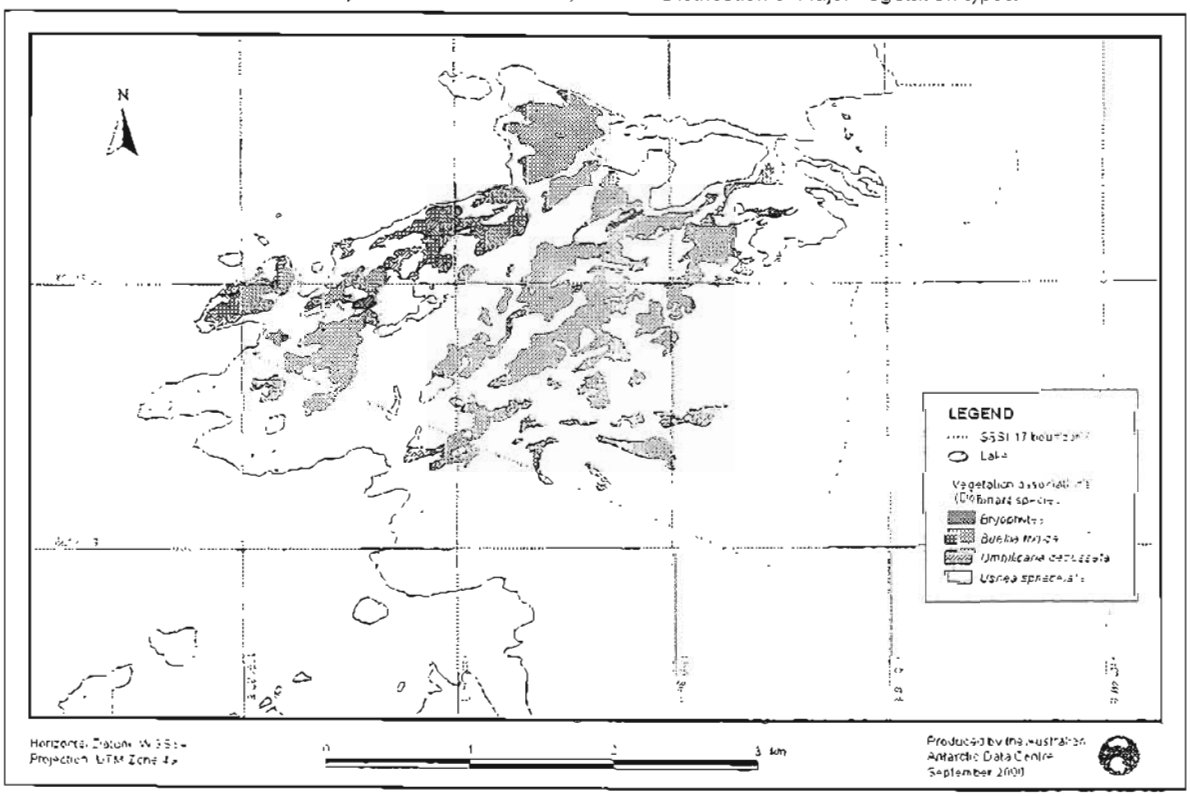
Map C: Topographic map of the Area.
Projection: UTM Zone 49 Horizontal Datum: WGS84.
Contour Interval: 10 m.

MAP C Clark Peninsula Site of Special Scientific Interest, No. 17 Topography.



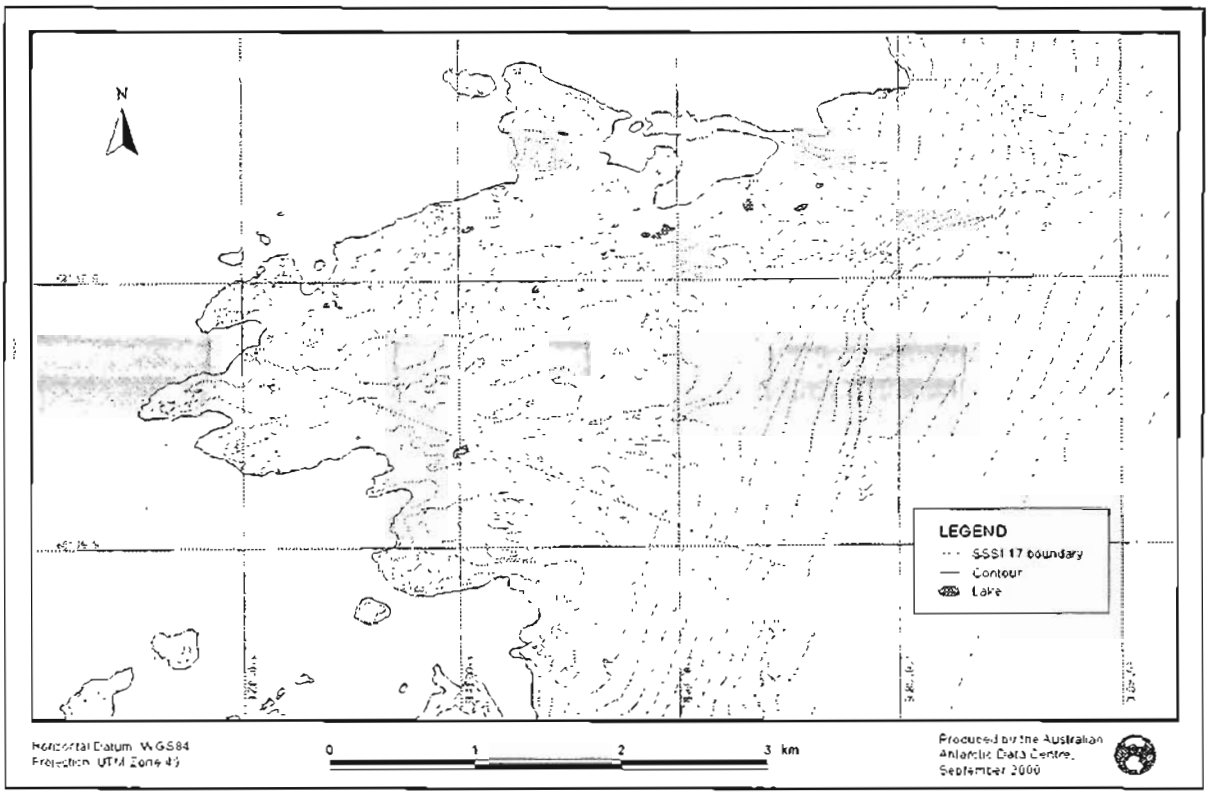
Map D: Vegetation map of the Area.
Projection: UTM Zone 49 Horizontal Datum: WGS84.

MAP D Clark Peninsula Site of Special Scientific Interest, No 17 Distribution of major vegetation types.



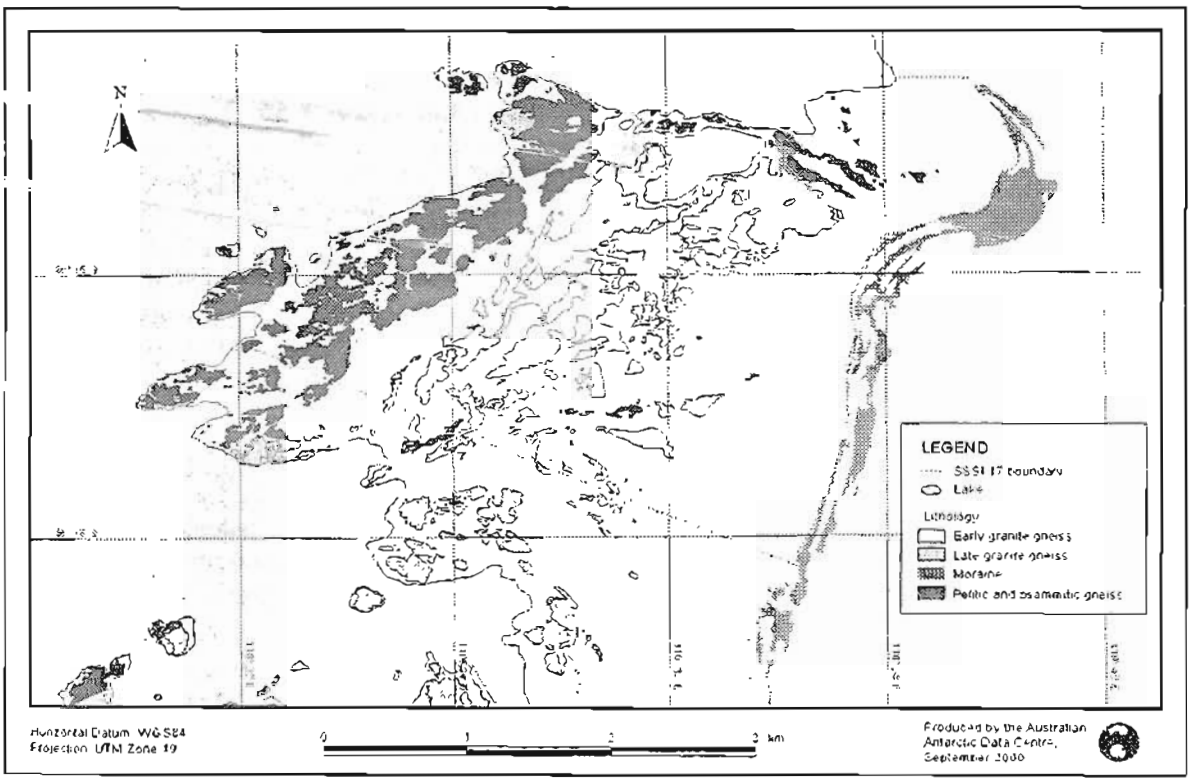
Map E: Distribution of lakes of the Area.
Projection: UTM Zone 49 Horizontal Datum: WGS84.

MAP E Clark Peninsula Site of Special Scientific Interest, No. 17. Distribution of lakes.



Map F: Geology of the Area.
Projection: UTM Zone 49 Horizontal Datum: WGS84.

MAP F Clark Peninsula Site of Special Scientific Interest, No. 17 Geology.



6 Description of the Area

6(i) Geographical co-ordinates, boundary markers and natural features
Clark Peninsula, an area of rock exposures and permanent ice and snow fields, is situated on the north side of Newcomb Bay at the east end of Vincennes Bay, opposite Windmill Islands region, on Budd Coast, Wilkes Land, in latitude 66°15'S and longitude 110°36'E. The Area is approximately 9.75 square kilometres in area. (Map C.)

The Area comprises all the land on Clark Peninsula within the southern boundary line connecting the east side of Powell Cove at a point which originates at latitude 66.254424° South, longitude 110.53330° East, to trigonometrical station G7 at latitude 66.25809° South, longitude 110.55664° East thence to a point to the east-south-east on Løken Moraine. The eastern boundary is the westernmost limit of Løken Moraines as far north as a point due east of Blakeney Point, and thence to the coast, returning along the coast to the point of origin. The boundary of the Area will be indicated by prominent markers, and is shown on Map C.

Topographically, the Clark Peninsula comprises low lying, rounded ice-free rocky outcrops (maximum altitude approximately 40 metres), rising in the east to the Løken Moraines (altitude approximately 130 metres). Intervening valleys are filled with permanent snow or ice, or glacial moraine and exfoliated debris and contain water catchment areas.

The Windmill Islands represent one of the easternmost outcrops of a Mesoproterozoic low-pressure granulite facies terrain that extends west to the Bunger Hills and further to the Archaean complexes in Princess Elizabeth Land, to minor exposures in the east in the Dumont D'Urville area and in Commonwealth Bay. The total outcrop areas do not exceed more than a few square kilometres.

The rocks of the Windmill Islands area comprise a series of migmatitic metapelites and metapsammites interlayered with mafic to ultramafic and felsic sequences with rare calc-silicates, large partial melt bodies (Windmill Island supacrustals), undeformed granite, charnockite, gabbro, pegmatite, aplites and late dolerite dykes. Clark Peninsula distinguishes the northern transition of a metamorphic grade transition which separates the northern part of the Windmill Islands area from the southern part.

On Clark Peninsula outcrops of metapelitic rock and leucocratic granite gneiss are dominant. The metapelitic rock is generally foliated, migmatized and fine to medium grained. Mineralogy of the metapelitic rock involves biotite-sillimanite and biotite-sillimanite±cordierite. The sillimanite is strongly lineated in the foliation and the cordierite is generally pinnitized. The early granite gneiss is white, medium grained and foliated, it comprises two felsic to intermediate intrusions which predate and/or are synchronous with the deformation in the Windmill Islands. The larger intrusion, which occupies most of central Clark Peninsula is a quartz, K-feldspar, biotite, white mica and opaque-bearing granitic augen gneiss. Small outcrops of mafics and metapsammite occur. The rock beds lie in a south-west north-east orientation. The geology of Clark Peninsula is shown at Map F.

Gravels and soils appear to be derived from marine sediments deposited in the Pleistocene with a thin cover of weathered rock. Subfossil penguin colonies are common along the central ridge running south-west to north-east on Clark Peninsula and at Whitney Point and Blakeney Point. In the vicinity of abandoned penguin colonies, the soils, derived from penguin guano, are fine and silty with relatively high percentage of organic matter. Melt streams and pools and small lakes are prevalent in summer. The distribution of pools and lakes on Clark Peninsula is shown at Map E.

Conditions on Clark Peninsula, in comparison with many other continental Antarctic areas, are favourable enough to have induced relatively stable, complex, well developed, and species rich vegetation. The ice-free rocks support an extensive cover of lichen and in lower lying areas mosses predominate. Principal factors responsible for the distribution of vegetation on Clark Peninsula are exposure to wind, availability of water and the presence of abandoned penguin colonies which have a marked influence on the distribution and abundance of species.

To the north-east of the Peninsula, well-developed *Umbilicaria decussata, Pseudephebe minuscula, Usnea sphacelata* communities dominate. Further from the coast, *U. sphacelata* is dominant and forms extensive carpets over the metamorphic rocks and gravel beds in association with *P. minuscula* and *U. decussata,* together with scattered bryophytes. The bryophytes comprise, *Bryum*

pseudotriquetrum, Grimmia antarctici and *Ceratodon purpureus*. Within these communities, well-developed bryophyte patches dominate in moist, sheltered sites and locally form closed stands comprising a moss turf up to almost 30 cm depth.

In the north-western and western coastal areas where penguin colonies are present, *Xanthoria mawsonii, Candelariella flava* and *Buellia frigida* are more common. On the abandoned penguin colonies in the southern coastal areas, this community type contains a higher proportion of *U. decussata* and *U. sphacelata*.

In the centre of Clark Peninsula the vegetation is dominated by *U. decussata, P. minuscula, B. soredians* and *B. frigida*, with scattered occurrences of *Pleopsidium chlorophanum*.

The vegetation distribution of Clark Peninsula is shown at Map D.

The microflora comprises algae, with *Botrydiopsis constricta* and *Chlorella conglomerata* dominating, together with bacteria, yeasts and filamentous fungi.

Adélie penguins (*Pygoscelis adeliae*) are abundant within the Area, with colonies present at Whitney and Blakeney Points. Approximately 5,500 breeding pairs were counted in 1999 at Whitney Point, and 4,600 breeding pairs were present at Blakeney Point in 1991. The penguin population has shown a long-term increase since studies commenced in 1959/60. This is in contrast to nearby Shirley Island, opposite Casey Station, where the breeding population of Adélie penguins has remained stable since 1968.

Wilson's storm petrels (*Oceanites oceanicus*), South polar skuas (*Catharacta maccormicki*)and Snow petrels (*Pagodroma nivea*) breed within the Area.

Terrestrial invertebrate microfauna consists of protozoa, nematodes, mites, rotifers and tardigrades. The invertebrates are mainly confined to the moss beds, lichen stands and moist soils.

The climate of the Windmill Islands area is frigid-Antarctic. Meteorological data from Casey Station on nearby Bailey Peninsula show mean temperatures for the warmest and coldest months of 0.3 and –14.9°C, respectively, with extreme temperatures ranging from 9.2 to –41°C. The climate is dry with a mean annual snowfall of 195 mm year^{-1} (rainfall equivalent). There is an annual average of 96 days with gale-force winds, which are predominantly easterly in direction, off the polar ice cap. Snowfall is common during the winter, but the extremely strong winds scour the exposed areas of the Peninsula of snow. On most hill crests on Clark Peninsula snow gathers in the lee of rock outcrops and in depressions in the substratum. Further down the slopes snow forms deeper drifts.

6(ii) Special Zones within the Area
There are no special zones within the Area.

6(iii) Location of Structures within and adjacent to the Area
The only structures known to exist in the Area are a severely deteriorated wood and canvas hide, known as "Wannigan," located on "Lower Snow Slope" (unofficial name) on the eastern portion of Whitney Point. This hide was constructed in 1959 for behavioural studies of penguins. There are a number of boundary markers along the southern boundary, and survey markers within the Area.

The "Wilkes Hilton" Refuge Hut is located approximately 200 metres south of the southern boundary. Approximately one kilometre to the south-west is the abandoned Wilkes Station on Stonehocker Point. Another Refuge Hut, "Jack's Donga" is located approximately 1.5 kilometres north of the northern boundary of the Area.

6(iv) Location of other Protected Areas in the vicinity
Nearby protected areas to Clark Peninsula are: North-east Bailey Peninsula, Site of Special Scientific Interest No. 16, 66°17'S, 110°33'E, 2.5 km, south-west of Clark Peninsula, across Newcomb Bay, adjacent to Casey Station; and Specially Protected Area, No. 3, Ardery Island, 66°22'S, 110°27'E, and Odbert Island, 66°22'S, 110°33'E, Budd Coast lying in Vincennes Bay, 13 km south of the former Wilkes Station.

7. Permit Conditions

Entry into the Area is prohibited except in accordance with a permit issued by an appropriate National Authority.

A permit to enter the Area may only be issued for scientific research, or for essential management purposes consistent with the Management Plan's objectives and provisions, and providing that the actions permitted will not jeopardise the ecological or scientific values of the Area or interfere with existing scientific studies.

Conditions that must be included in the permit are provisos that the permit or an authorised copy shall be carried within the Area, and that the permit specify the period for specific activities. Additional conditions, consistent with the Management Plan's objectives and provisions, may be included by the issuing Authority.

7(i) Access to and Movement within or over the Area
Access into the Area should, except in emergency/exceptional circumstances be from "Wilkes Hilton" Refuge Hut in the south-west, "Jack's Donga" Refuge Hut in the north-east, or from the over snow route between Casey Station and "Jack's Donga" by descending the western slope of Løken Moraines in the vicinity east of Stevenson Cove, see Map C.

Access from Casey to abandoned Wilkes Station is via a well-defined marked cane route outside the southern boundary of the Area. As the Casey-Wilkes route is very close to the boundary, pedestrian and vehicular traffic should take care not to stray northward of it. See Map C.

Vehicles are not allowed within the Area (except for emergency) and access should be by foot. Helicopters (except in emergencies or for essential management activities) are not allowed to land within the Area. Persons authorised to enter the Area should, to the maximum extent possible, avoid walking on visible vegetation. Care should be exercised walking in areas of moist ground, where foot traffic can easily damage sensitive soils, plant or algae communities, and degrade water quality. Persons should walk around such features, on ice or rocky ground. Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise effects.

Persons should avoid disturbance of penguin populations and individuals, and not approach penguins within 40 metres during the breeding season, October to April, unless this is an integral part of the permitted research activity.

7(ii) Activities which are or may be conducted within the Area, including restrictions on time and place
The following may be conducted within the Area:

- scientific research programs consistent with the Management Plan for the Area, including the values for which the Area has been designated, and which will not jeopardise the ecosystem of the Area;
- essential management activities, including monitoring;
- sampling, which should be the minimum required for the approved research programs.

7(iii) Installation, modification or removal of structures
No structures are to be erected within the Area, or scientific equipment installed, except for essential scientific or management activities, and as authorised in a permit. All scientific equipment installed in the Area must be clearly identified by country, name of principal investigator, year of installation and expected date of completion of the study. Details are to be included in the visit report. All such items should be made of materials that pose minimum risk of contamination of the Area and must be removed at the completion of the study.

7(iv) Location of field camps
Camping is not allowed within the Area and field parties should camp at either "Wilkes Hilton" Refuge Hut or "Jack's Donga" Refuge Hut (see Map C).

7(v) Restrictions on materials and organisms that may be brought into the Area
No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions.

No poultry or poultry products shall be taken into the Area.

No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radionuclides or stable isotopes, which may be introduced for scientific or management purposes and which have been authorised, shall be removed from the Area at or before the conclusion of the activity.

Fuel is not to be stored in the Area unless required for essential purposes connected with the authorised activity. Permanent depots are not permitted.

All material introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction to the environment is minimised.

7(vi) Taking of or harmful interference with native flora and fauna
Taking of, or harmful interference with native flora and fauna is prohibited, except in accordance with a permit. Where authorised, the activity shall, as a minimum standard, be in accordance with the requirements of the Protocol on Environmental Protection to the Antarctic Treaty, 1991, Annex II, Article 3.

7(vii) Collection and removal of anything not brought into the Area by the permit holder
Material may only be collected or removed from the Area as authorised and should be limited to the minimum necessary to meet scientific or management needs.

Material of human origin likely to compromise the values of the Area, which was not brought into the Area by the permit holder or otherwise authorised, may be removed unless the impact of the removal is likely to be greater than leaving the material *in situ*. If material is to be removed the appropriate Authority must be notified and approval obtained.

7(viii) Disposal of waste
All wastes generated by persons in the Area, including human faeces and urine, shall be removed from the Area, and none deposited within the Area.

7(ix) Measures that may be necessary to ensure that the aims and objectives of the Management Plan can continue to be met
The following may be necessary to ensure the objectives of the Management Plan are met:

- permits may be granted to enter the Area to carry out biological monitoring and Area inspection activities, which may involve the collection of samples for analysis or review; the erection or maintenance of scientific equipment and structures, and signposts; or for other protective measures.
- any specific sites of long-term monitoring shall be appropriately marked and a GPS position obtained for lodgement with the Antarctic Data Directory System through the appropriate National Authority.
- to help maintain the ecological and scientific values of the plant communities found in the Area, visitors shall take special precautions against introductions. Of particular concern are microbial or vegetation introductions sourced from soils at other Antarctic sites, including Stations, or from regions outside Antarctica. To minimise the risk of introductions, before entering the Area, visitors shall thoroughly clean footwear and any equipment, particularly sampling equipment and markers to be used in the Area.

7(x) Requirements for reports
The principal permit holder for each permit issued should submit to the appropriate National Authority a visit report describing the activities undertaken. Such reports should be submitted as soon as possible and include the types of information contained in the SCAR Visit Report form or as required by national laws. The Authority should maintain a record of such activities and make this accessible to interested Parties.

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Management Plan for Site of Special Scientific Interest No. 22

YUKIDORI VALLEY, LANGHOVDE, LÜTZOW-HOLM BAY

1. Description of values to be protected

The Yukidori Valley (69°14'30"S, 39°46'00"E) is located in the middle part of Langhovde on the east coast of Lützow-Holm Bay, continental Antarctica, which is about 20 km south of the Japanese Syowa Station (69°00'22"S, 39°35'24"E) on the Ongul Islands (Map 1). The Valley is 2.0-2.5 km long from east to west, 1.8 km wide and contains a prominent melt stream and two lakes (Map 2). A typical continental fellfield ecosystem has developed in this Valley. Field surveys of geological and biological sciences have been carried out in Langhovde since 1957 of the IGY period and a long-term monitoring program started in the Yukidori Valley area in 1984. More intensive studies have been carried after the Area was designated as SSSI No.22 in 1987. Permanent quadrats for monitoring lichen and moss vegetation have been established in this typical continental ecosystem in relation to long-term environmental change. Therefore, the Area requires protection in order that this long-term scientific monitoring program not be compromised.

The Area was originally designated in Recommendation XIV-5 (1987, SSSI No.22) after a proposal by Japan on the grounds that it contains a typical continental Antarctic fellfield ecosystem. Yukidori Valley is inhabited by several thousand snow petrels and the excrement of snow petrels is important as a major supply of nutrients for mosses and lichens.

These are still valid reasons for maintaining protection. Since 1984, the long-term monitoring program has continued in this Area, in particular to monitor temporal and spatial change in vegetation of mosses and lichens (Map 2).

The values to be protected are those associated with this typical continental Antarctic fellfield ecosystem and the long-term scientific studies that have been carried out since 1984. The Area contains fluvioglacial terraces in the lower part of the Valley and a dissected deltaic fan at the mouth of the stream.

2. Aims and objectives

Management at Yukidori Valley aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow a continuation of long-term monitoring programs;
- avoid major changes to the structure and composition of the terrestrial vegetation, in particular the moss and lichen banks.
- prevent unnecessary human disturbance to the snow petrels, as well as to the surrounding environment.

3. Management activities

The following management activities are to be undertaken to protect the values of the Area:

- Maps showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently at "Biological research hut" located outside of the western boundary of the Area, where copies of this management plan shall also be made available.
- Signs showing the location and boundaries of the Area and listing entry restrictions should be placed at the entry point at the western boundary of the Area to help avoid inadvertent entry.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer necessary.

4. Period of designation

Designated for an indefinite period.

5. Maps

Map 1: Sôya Coast, Lützow-Holm Bay, East Antarctica.

Map 2: Yukidori Valley, Langhovde and the boundary of the Site of Special Scientific Interest (SSSI No. 22).

Map 3: Simplified geological sketch map of Yukidori Valley.

Map 4: The biological research hut and surroundings.

6. Description of the Area

6(i) Geographical coordinates, boundary markers and natural features

Yukidori Valley (69°00'30"S, 39°46'00"E) is situated in the middle part of Langhovde, on the east coast of Lützow-Holm Bay, Continental Antarctica. The Area encompasses 2.0-2.5 km by 1.8 km, located between a tongue of the ice cap and sea at the western end of the Valley.

The location of the Area and its boundaries are shown on the attached maps (Map 2). It is described as all the land within the Area bounded by the following coordinates:

69°14'00"S, 39°44'20"E

69°14'00"S, 39°48'00"E

69°15'00"S, 39°48'00"E

69°15'00"S, 39°45'20"E

The boundary from the point 69°14'00"S, 39°44'20"E to the point 69°15'00"S, 39°45'20"E includes a part of Yatude Valley, the coast line and is delineated with ropes. The Yukidori Valley contains a prominent melt stream and two lakes. The stream flows from the ice cap towards the sea through V-shaped and U-shaped sectors of the Valley and enters Lake Yukidori, in the middle of the Valley, 125 m above sea level; it then flows from the south-west corner of the lake and runs through the lower valley formed by steep cliffs. Sorted stone circles with mean diameter of 1 m are situated on moraines near the northwestern part of Langhovde Glacier to the east of Lake Higasi-Yukidori, which is located at the head of the Valley, about 200 m above sea level abutting the edge of the ice cap. Poorly-developed stone circles are found on fluvioglacial deposits in the Yukidori Valley. Small talus aprons and talus cones are located around Lake Yukidori. In the lower reaches of the Yukidori Valley, at on altitude of about 20 m, fluvioglacial terraces 20 to 30 m wide stand 2 to 3 m high above the present channel bed. These flat terraces consist of rather fine sand and gravel. There is a dissected deltaic fan formed at the mouth of the stream. The Valley is underlain by well-layered sequences of late Proterozoic metamorphic rocks, consisting of garnet-biotite gneiss, biotite gneiss, pyroxee gneiss and hornblende gneiss with metabasite. The foliation of the gneisses strike N10°E and dips monoclinally to the east (Map 3).

Almost all of the plant species recorded from the Langhovde area occur within the Area. They include the mosses *Bryum pseudotriquetrum* (= *Bryum algens*), *Bryum argenteum*, *Bryum amblyodon*, *Ceratodon purpureus*, *Hennediella heimii*, *Pottia austrogeorgica*, *Grimmia lawiana* and lichens *Usnea sphacelata*, *Umbilicaria antarctica*, *Umbilicaria decussata*, *Pseudephebe minuscula*, and *Xanthoria elegans*. Four species of free living mites (*Nanorchestes antarcticus*, *Protereunetes minutus*, *Antarcticola meyeri*, *Tydeus erebus*), have been reported. There are over sixty species of microalgae, including species endemic to Yukidori Valley, *Cosmarium yukidoriense* and a variety of *Cosmarium clepsydra*. Several pairs of the south polar skua (*Catharacta maccormicki*) and several thousand snow petrels (*Pagodroma nivea*; note "Yukidori" is Japanese for the snow petrel) breed in the Area. The Area does not include any marine area.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area
The boundary of the Area near the hut is enclosed by ropes. The biological research hut was constructed in 1986 near the beach at the mouth of the Valley so that there would be minimal impact on the flora, fauna, and terrain of the Area. The location of hut is excluded from the Area. There are three sites for microclimatic observations in the lower, middle and upper reaches of the stream within the Area. In addition, a meteorological station is located near the hut, outside the Area. Microclimatic factors such as relative humidity and air temperatures at ground level, soil temperatures and temperatures at moss level are measured. Hexagon chambers made of acrylic fiber are installed at the vegetated area in the lower and middle reaches in order to assess vegetational and environmental changes. These sites are indicated in the attached maps.

6(iv) Location of other protected areas within close proximity of the Area
None.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by an appropriate national authority. Conditions for issuing a Permit to enter the Area are that:

- it is issued only for a compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review,
- the actions permitted will not jeopardize the ecological or scientific values of the Area;
- any management activities are in support of the aims and objectives of the management plan;
- the actions permitted are in accordance with this management plan;
- the Permit, or an authorized copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- permit shall be issued for a stated period.

The appropriate authority should be notified of any activities/measures undertaken that weren't included in the authorized Permit.

7(i) Access to and movement within the Area
Vehicles are prohibited within the Area and helicopter should not land within the Area. Only those pedestrians with compelling research activities are allowed to enter at the entry point (Map 4). No pedestrian routes are designated within the Area, but persons on foot should at all times avoid walking on vegetated areas or disturbance to birds and natural features.

7(ii) Activities that are or may be conducted in the Area, including restrictions on time or place
- Compelling scientific research which cannot be undertaken elsewhere and which will not jeopardize the ecosystem of the Area
- Essential management activities, including monitoring

7(iii) Installation, modification or removal of structures
No further structures are to be erected in the Area, or scientific equipment installed, except for essential scientific or management activities, as specified in the Permit.

7(iv) Location of field camps
Camping should be avoided within the Area.

7(v) Restrictions on materials and organisms which can be brought into the Area
No living animals, plant material or microorganisms shall be deliberately introduced into the Area and the precautions listed in 7(*ix*) below shall be taken to prevent accidental introductions. In view of the presence of breeding bird colonies in the Area, no poultry products, including products containing uncooked dried eggs, shall be taken into the Area. No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from

the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless specifically authorized by Permit for specific scientific or management purposes. Anything introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of any introduction into the environment is minimized. If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*. The appropriate authority should be notified of anything released and not removed that was not included in the authorized Permit.

7(vi) Taking or harmful interference with native flora or fauna
Taking or harmful interference with native flora or fauna is prohibited, except by Permit issued in accordance with Annex II to the Protocol on Environmental Protection to the Antarctic Treaty. Where taking or harmful interference with animals is involved, the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica* should be used as a minimum standard.

7(vii) Collection or removal of anything not brought into the Area by the Permit holder
Collection or removal of anything not brought into the Area by the Permit holder shall only be in accordance with a Permit and should be limited to the minimum necessary to meet scientific or management needs. Permits shall not be granted in instances where it is proposed to take, remove or damage such quantities of soil, native flora or fauna that their distribution or abundance in the Area would be significantly affected. Anything of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit Holder or otherwise authorized, may be removed unless the impact of removal is likely to be greater than leaving the material in situ: if this is the case the appropriate authority should be notified.

7(viii) Disposal of waste
All wastes, including all human wastes, shall be removed from the Area. Human wastes may be disposed of into the sea.

7(ix) Measures that are necessary to ensure that aims and objectives of the management plan can continue to be met

- Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the small-scale collection of samples for analysis or review, or for protective measures.
- Any specific long-term monitoring sites shall be appropriately marked.
- To help maintain the ecological and scientific values of Yukidori Valley special precautions shall be taken against introductions. Of concern are microbial, invertebrate or plant introductions from other Antarctic sites, including stations, or from regions outside Antarctica. All sampling equipment or markers brought into the Area shall be cleaned or sterilized. To the maximum extent practicable, footwear and other equipment used or brought into the Area (including backpacks, carry-bags and tents) shall be thoroughly cleaned before entering the Area.

7 (x) Requirements for reports
Parties should ensure that the principal holder for each Permit issued submits to the appropriate, the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the management plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organizing the scientific use of the Area.

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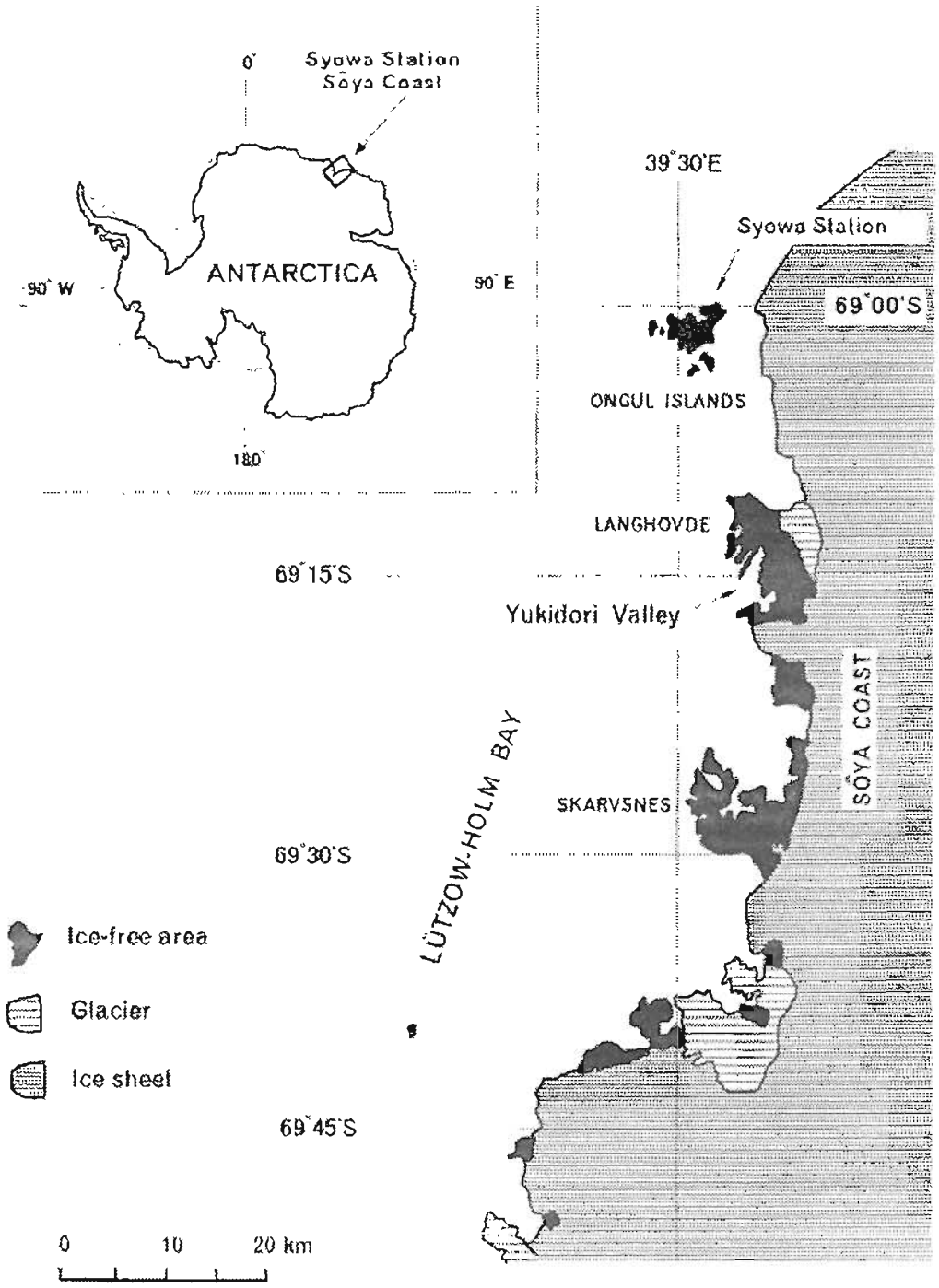
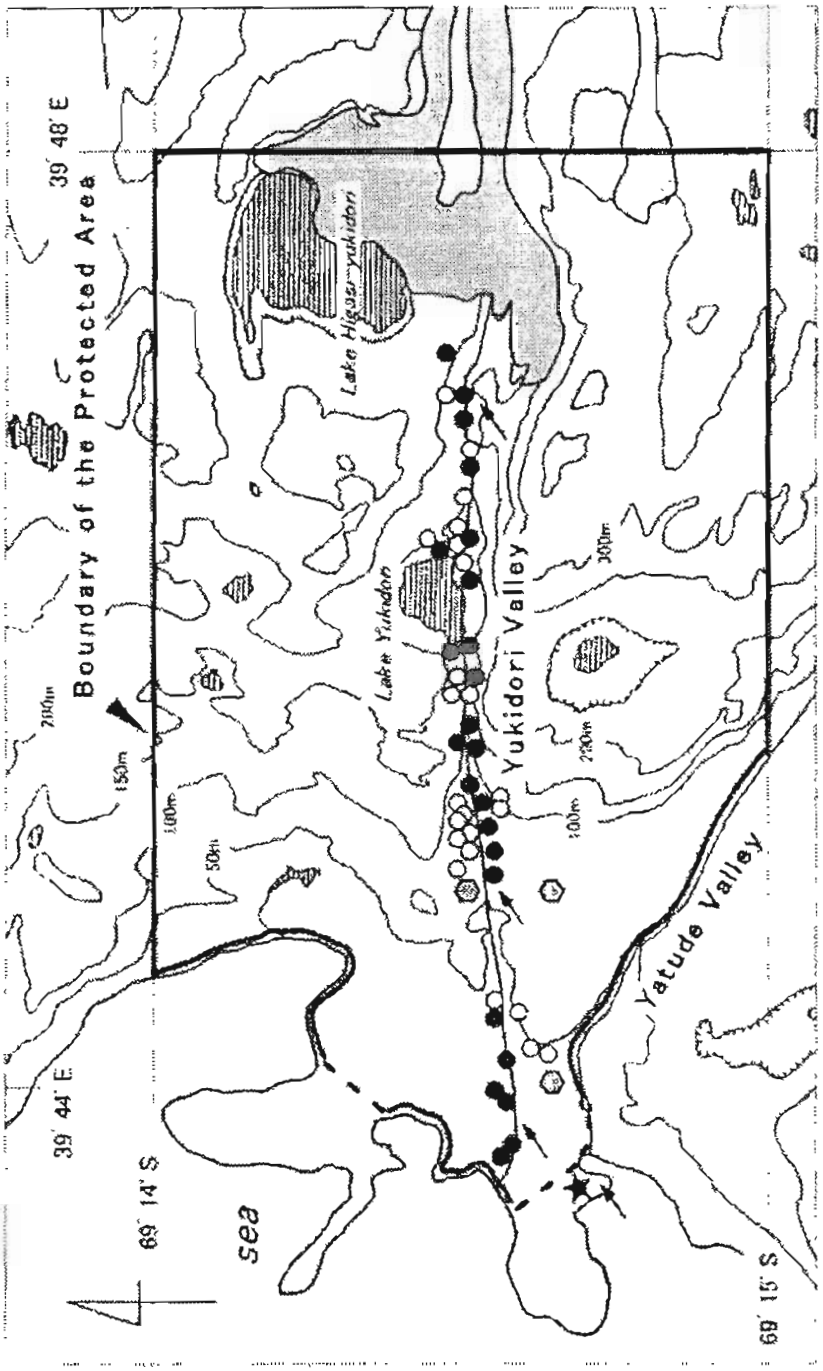
Management Plan for Site of Special Scientific Interest No. 22
Yukidori Valley, Langhovde, Lützow-Holm Bay

Figure Captions:
Map 1: Sôya Coast, Lützow-Holm Bay, East Antarctica
Map 2: Yukidori Valley, Langhovde and the boundary of the Site of Special Scientific Interest (SSSI No. 22)
Map 3: Simplified geological sketch map of Yukidori Valley

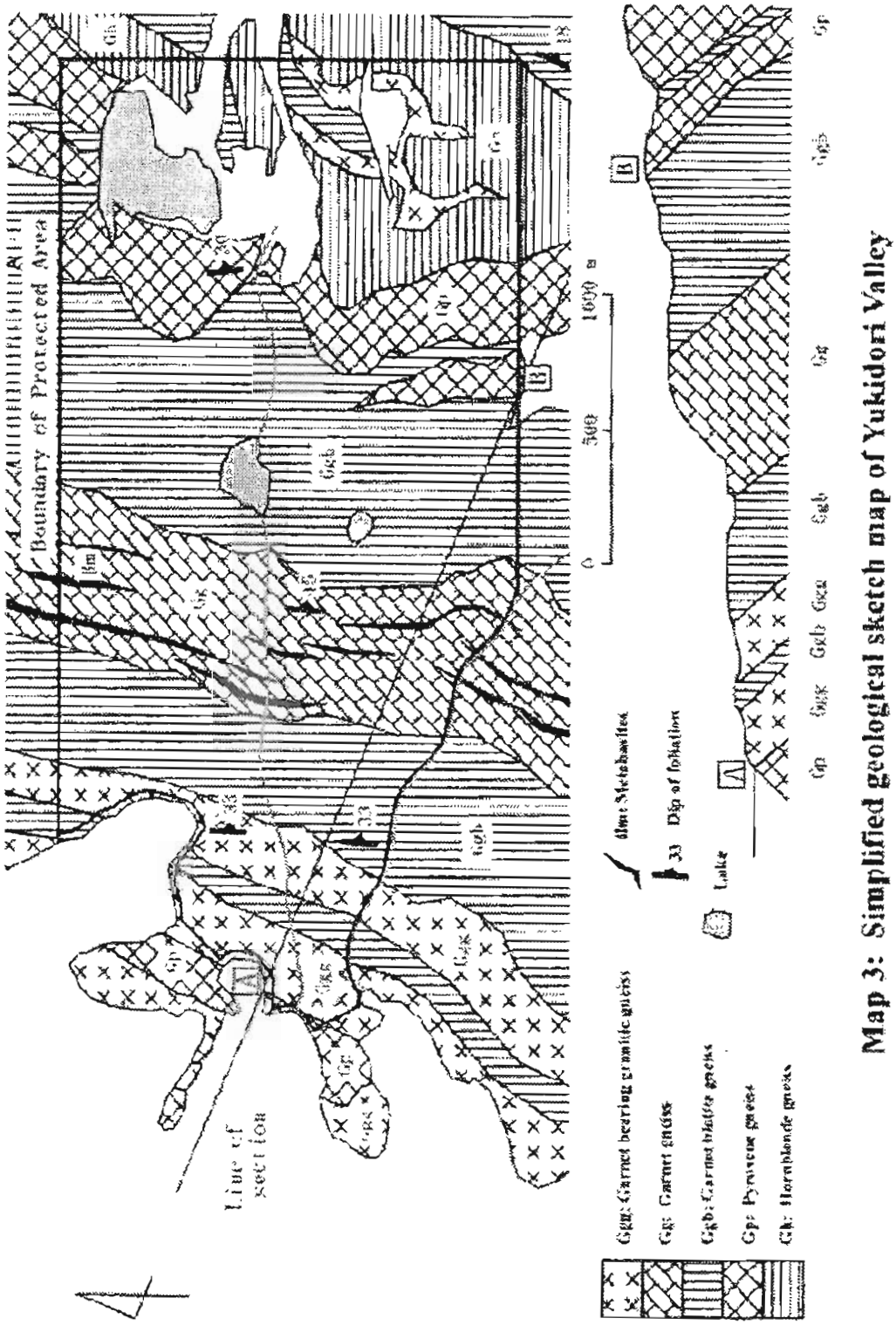
Map 4: The biological research hut and surroundings



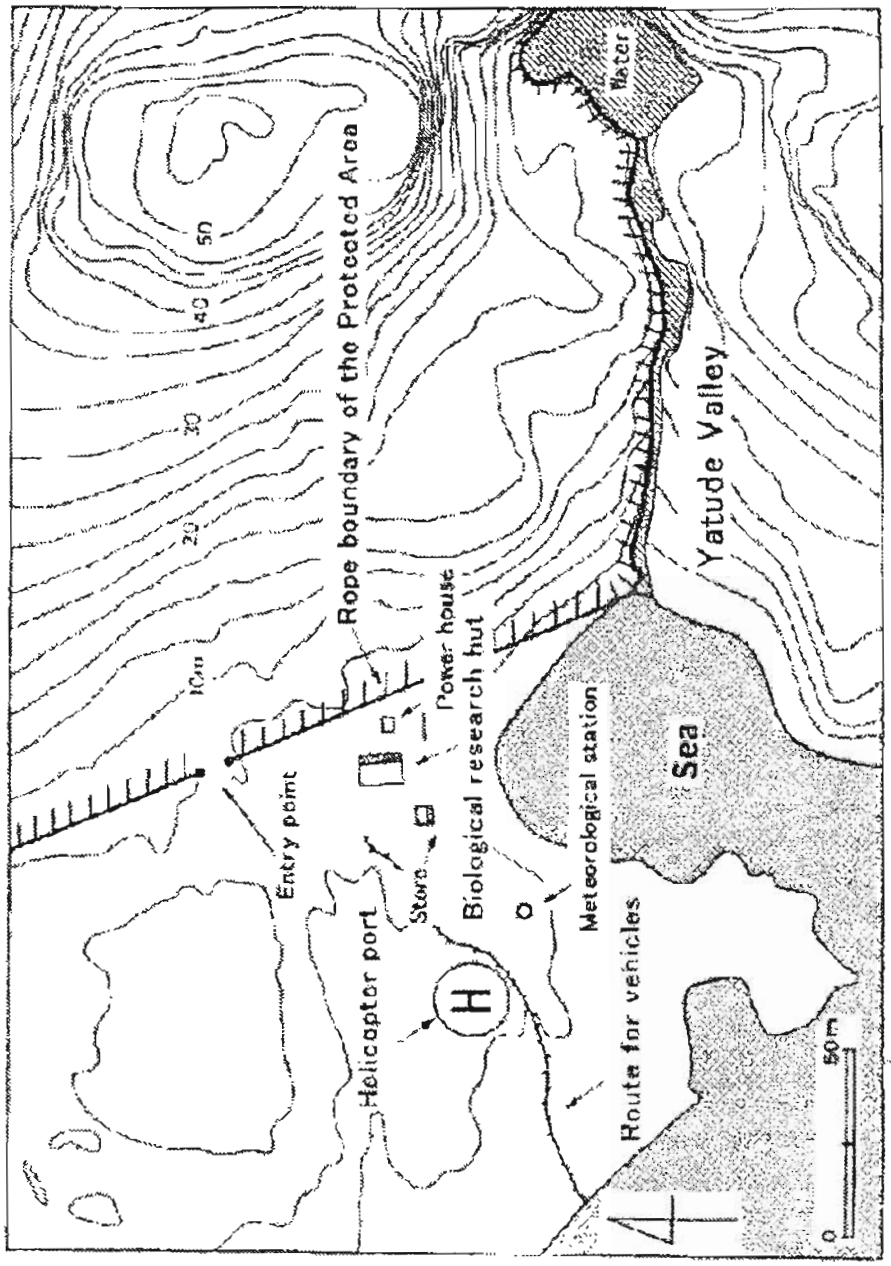
Map 1: The map of Sôya Coast, Lützow-Holm Bay, East Antarctica.



Map 2 : Yukidori Valley, Langhovde and the boundary of the Protected Area



Map 3: Simplified geological sketch map of Yukidori Valley



Map 4 : The biological research hut and surroundings.

Management Plan for Site of Special Scientific Interest No. 34

LIONS RUMP, KING GEORGE ISLAND, SOUTH SHETLAND ISLANDS

1. Description of Values to be Protected

The Area was originally designated as a Site of Special Scientific Interest in Recommendation XVI-2 (1991, SSSI No. 34) after a proposal by Poland on the grounds that it contains diverse biota and geological features and is a representative example of the terrestrial, limnological, and littoral habitats of the maritime Antarctic. The Area is designated primarily to protect the site's ecological values. It is also valuable as a reference site with its diverse avian and mammalian Antarctic fauna, against which disturbance at other site can be measured.

The grounds are still relevant. There is rich lichen flora and frequent stands of *Colobanthus quitensis* and *Deschampsia antarctica*. There are colonies of Adélie Penguin (*Pygoscelis adeliae*), Gentoo Penguin (*Pygoscelis papua*) and Chinstrap Penguin (*Pygoscelis antarctica*) and breeding areas of nine other birds: Giant Petrel (*Macronectes giganteus*), Cape Pigeon (*Daption capense*), Wilson's Storm Petrel (*Oceanites oceanicus*), Black-bellied Storm Petrel (*Fregatea tropica*), Sheathbill (*Chionis alba*), McCormick's Skua (*Catharacta maccormicki*), Antarctic Skua (*Catharacta antarctica*), Dominican Gull (*Larus dominicanus*), and Antarctic Tern (*Sterna vittata*). Furthermore, Elephant Seals (*Mirounga leonina*), Weddell Seals (*Leptonychotes weddelli*), and Fur Seals (*Arctocephalus gazella*) breed on the beaches.

In the littoral zone of the Area approximately 13 taxa of benthic macroalgae are represented. The *Rhodophyta* are represented by 5 species, *Chlorophyta* by 5 species and *Phaeophyta* by 3 species. Macroalgae colonize King George Bay to depths of 90-100 m. Both considerable abundance and biomass values of benthic fauna were noted. Bivalve molluscs are clearly dominant. Both *Amphipoda* and *Polychaeta* contribute significantly to benthic fauna abundance. The species composition and proportion of endemics indicate that King George Bay is transitional between Subantarctic and coastal zone of the Antarctic continent.

The Area includes several features of geological interest, such as raised beaches, Tertiary lavas and tuffs with brown coal intercalations, and silicified wood fragments.

The Area takes its name from the distinctive rocky hill lying between the southern extremity of King George Bay and Lions Cove.

The values to be protected are those associated with an example of a site which has been subjected to minimal disturbance by human activity, except for occasional monitoring studies of the mammal and bird populations, and geological and geomorphological studies.

2. Aims and Objectives

Management of the Area aims to:

- protect all bird colonies and seal breeding areas against unnecessary and potentially damaging human activities
- ensure that sites of geological and geomorphological interest be protected from oversampling and fragile vegetation cover be protected against pedestrian activity;
- undertake essential management activities necessary to protect the values of the site;
- avoid degradation of, or substantial risk to, the littoral and limnological values of the Area.

3. Management Activities

Ensure that the biological condition of the Area is adequately monitored, preferably by non-invasive methods, and that any sign-boards and boundary markers are serviced.

4. Period of Designation

The Area is designated for an indefinite period.

5. Maps

Map A shows the location of King George Island in Antarctica.

Map B shows the Lions Rump, Site of Special Scientific Interest (SSSI) No. 34, in relation to King George Island.

Map C shows the Area in greater detail.

Map D Vegetation map of the Area.

Map E Geological map of the Area.

6. Description of the Area

6.(i) Geographical co-ordinates, boundary markers and natural features
The site is located on the southern coast of King George Bay, King George Island, in the South Shetlands Islands. It is described as all the land and sea falling within the area bounded by the following co-ordinates:

62°07'48"S, 58°09'17"W;

62°07'49"S, 58°07'14"W;

62°08'19"S, 58°07'19"W;

62°08'16"S, 58°09'15"W.

The Area includes the littoral and sublittoral zones extending from the eastern end of Lajkonik Rock to the most northerly point of Twin Pinnacles. From this point the boundary extends to the easternmost end of the columnar plug of Lions Head to the east of White Eagle Glacier. On land, the Area includes the coast of raised beaches, freshwater pools and streams on the south side of King George Bay, around Lions Cove, and the moraines and slopes which lead to the lower ice tongue of White Eagle Glacier, then westward to a small moraine which protrudes through the ice cap south-east of Sukiennice Hills.

The ice-free area exhibits a range of geomorphological features, including beaches of various width and length, moraines, hills and inland rocks. The highest point rises to an altitude c. 190 m.

Geologically, Lions Rump consists of Tertiary lavas and tuff containing thin brown coal intercalations and petrified wood fragments. The front of White Eagle Glacier is marked by large, dome-shaped moraine ridges belonging to several Holocene stages of glacier advance and retreat.

Large numbers of penguins breed throughout the Area. There were: 7825 pairs of Adelie penguin (*Pygoscelis adeliae*) in 1995/96, 7 pairs of Chinstrap penguin (*Pygoscelis antarctica*) in 1995/96, and 2207 pairs of Gentoo Penguin (*Pygoscelis papua*) in 1995/96.

There are at least 9 other breeding species of bird.

Approximately 13 taxa of macroalgae were found in the littoral zone of the Area. The most common among them were: green alga (*Monostroma hariotii*), red algae (*Georgiella confluens, Iridaea cordata* and *Leptosarca simplex*), and brown algae (*Adenocystis utricularis* and *Ascoseira mirabilis*).

The lichen flora of the Area consists of 104 taxa. The most diverse genera are *Caloplaca* (16 species) and *Buellia* (7 species). The highest species richness was found in places with diversified habitats, e.g. with rocks, near penguin colonies or in places of bird perching. The lowest species richness was found in recently deglaciated terraine (young moraines) or in snowbeds. Liverworts have little importance in local plant communities. They most frequently occur in moss banks. Fungi are rare or uncommon. Knowledge of the Area freshwater algae is poor.

6 (ii) Restricted zones within the Area
None.

6 (iii) Location of structures within the Area
Removable caravan (belonging to Poland) functioning as a summer field laboratory for two persons.

6 (iv) Location of other Protected Areas within close proximity
Fildes Peninsula, SSSI No. 5 and SSSI No. 33, Ardley Island lie about 50 km west of Lions Rump. Potter Peninsula, SSSI No. 13 lies about 35 km to the west and Antarctic Specially Managed Area (ASMA), Admiralty Bay, King George Island (South Shetland Islands) containing the western shore of Admiralty Bay, SSSI No. 8, lies about 20 km to the west.

7. Permit Conditions

Permits may be issued only by appropriate national authorities as designated under Annex V Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty.

Conditions for issuing a permit for the Area are that:

- it is issued only for a scientific purpose which cannot be served elsewhere,
- the actions permitted will not jeopardize the natural ecological system or scientific values of the Area,
- any management activities are in support of the objectives of the Management Plan,
- the action permitted are in accordance with this Management Plan,
- the permit, or a copy, must be carried within the Area,
- a report is supplied to the authority named in the Permit, and
- a permit is issued for a stated period only.

7 (i) Access to and movement within the Area
No helicopters or terrestrial vehicles are allowed within the Area. Overflights of the Area, either by helicopters or fixed wings aeroplanes must be offshore 250m. Helicopters should land only outside the Area.

Access to the Area from the sea must be to the west of the Area . No pedestrian routes are designated within the Area, but persons on foot should avoid walking on vegetated areas or disturbing wildlife whenever possible.

7 (ii) Activities which are or may be conducted within the Area, including restrictions on time and place
- Scientific research which cannot be conducted outside the Area, and which will not damage or interfere with any aspect of the Area's biological, geological, or aesthetic values.
- Essential management activities, including monitoring.

7 (iii) Installation, modification or removal of structures
No further structures are to be erected in the Area, or scientific equipment installed, except for essential scientific or management activities, as specified in the Permit. The temporary refuge will be removed when appropriate.

7 (iv) Location of the field camp
If camping in the Area, is necessary it should be close to the caravan. The caravan is normally available to two persons.

7 (v) Restrictions on materials and organisms which may be brought into the Area
No living animals or plant material shall be deliberately introduced into the Area.

No poultry products, including food products containing uncooked dried eggs, shall be taken into the Area.

Any chemical which may be introduced for compelling scientific purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the permit was granted.

Fuel, food and other materials are not to be stored in the Area except in support of activities for which the Permit has been granted. All such materials should be kept to a minimum, made secure against the elements and removed when no longer required.

7 (vi) Taking or harmful interference within native flora and fauna
This is prohibited, except in accordance with a Permit. Any animal sampling or interference involved should be in accordance with the SCAR Code of Conduct for Use of Animal for Scientific Purpose in Antarctica, as a minimum standard.

7 (vii) Collection and removal of anything not brought into the Area by the Permit holder
Material may be collected or removed from the Area only in accordance with a Permit. Marine debris may be removed from the beaches of the Area. Exceptionally, dead specimens of fauna or flora may be removed for laboratory examination without a Permit.

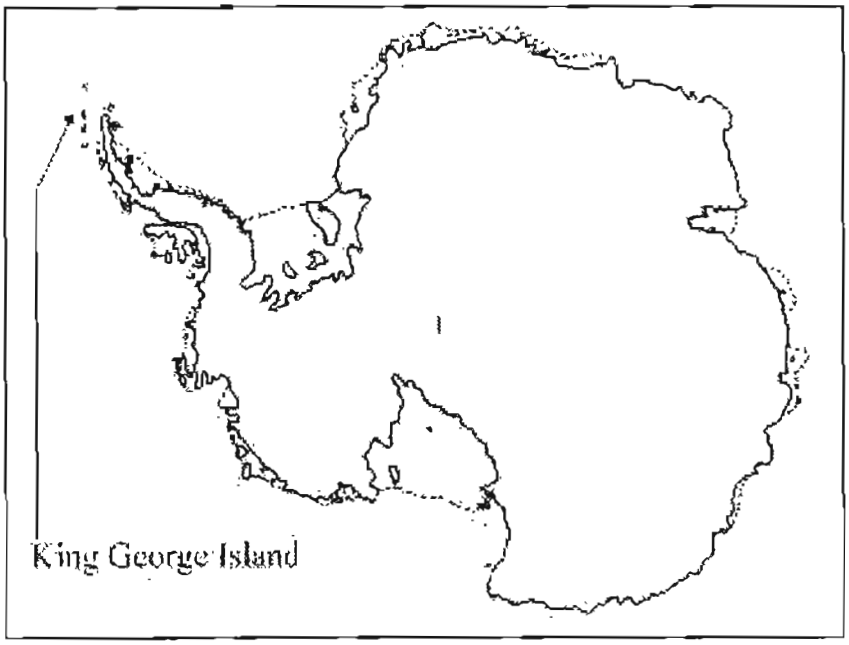
7 (viii) Disposal of waste
All waste shall be removed from the Area, with the exception that human waste should be deposited in the sea.

7 (ix) Measures that may be necessary to ensure that the aims and objects of the Management Plan continue to be met
The Permit, or a copy, must be carried within the Area.

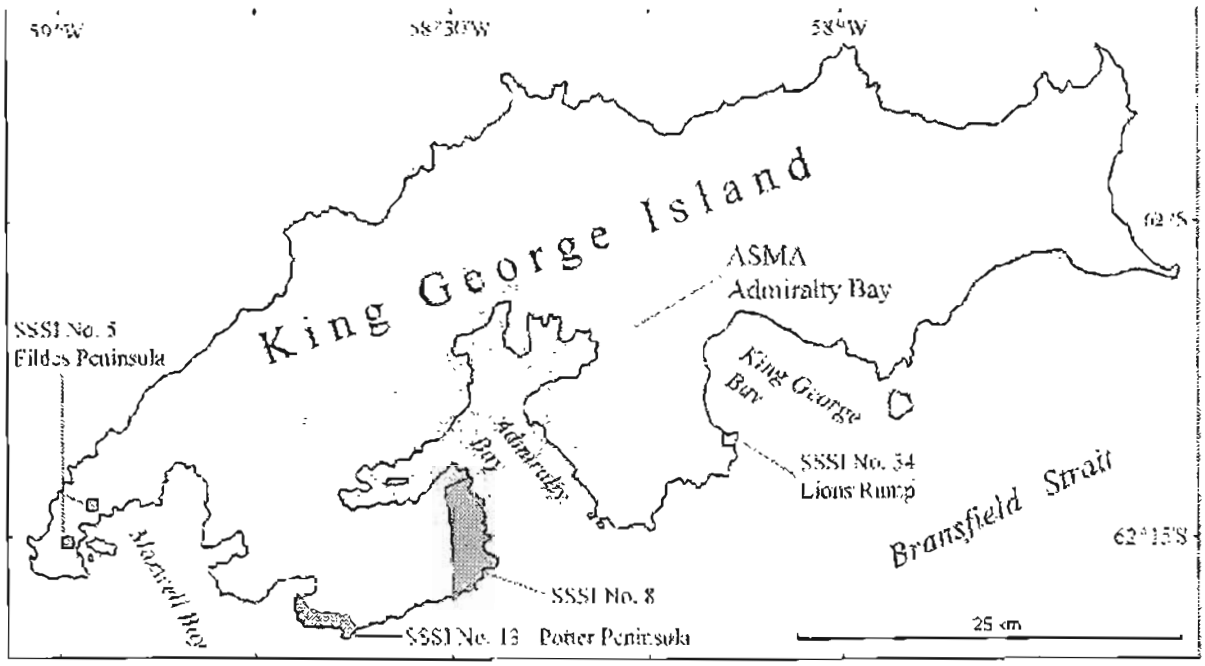
Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of small samples for analysis or audit, or to erect or maintain signpost, or protective measures.

Access to and movement within the Area shall, in any case, be limited in order to avoid disturbance to birds, and damage to vegetation and geological features.

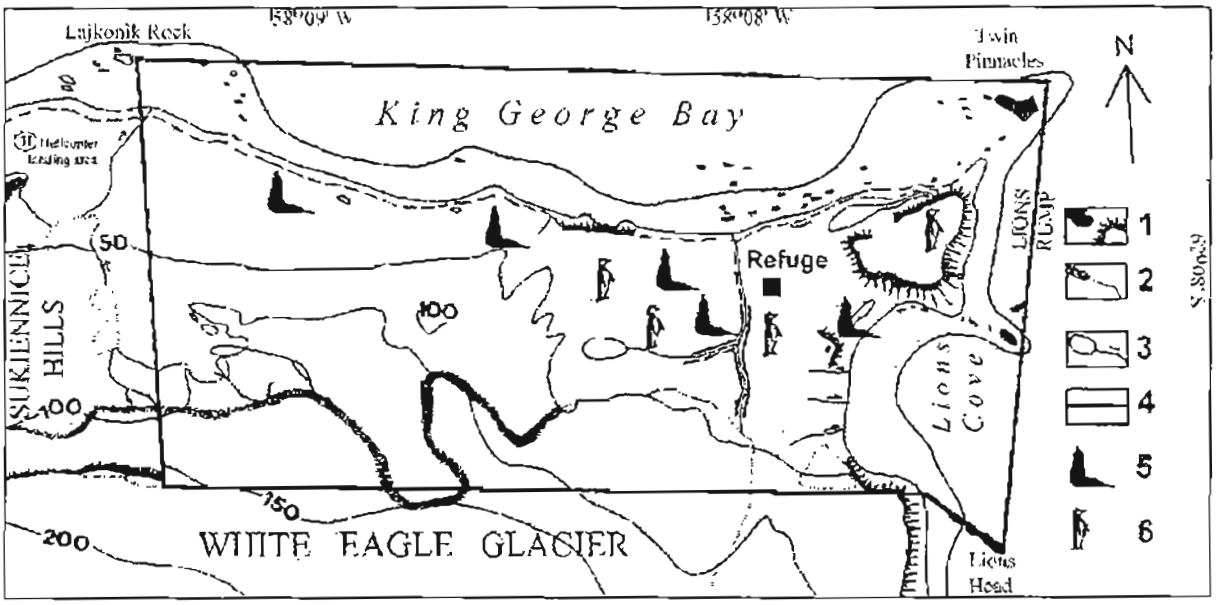
7 (x) Requirements for reports
The principal Permit Holder for each issued Permit shall submit a report of activities conducted in the Area. The Visit Report form suggested by SCAR provides a suitable model. This report shall be submitted to the authority named in the Permit as soon as practicable, but no later than 6 months after the visit has taken place. Such reports should be stored indefinitely and made accessible to interested Parties, SCAR, CCAMLR and COMNAP if requested, to provide the documentation of human activities within the Area, which could be utilized for good management.



Map A. Location of King George Island.

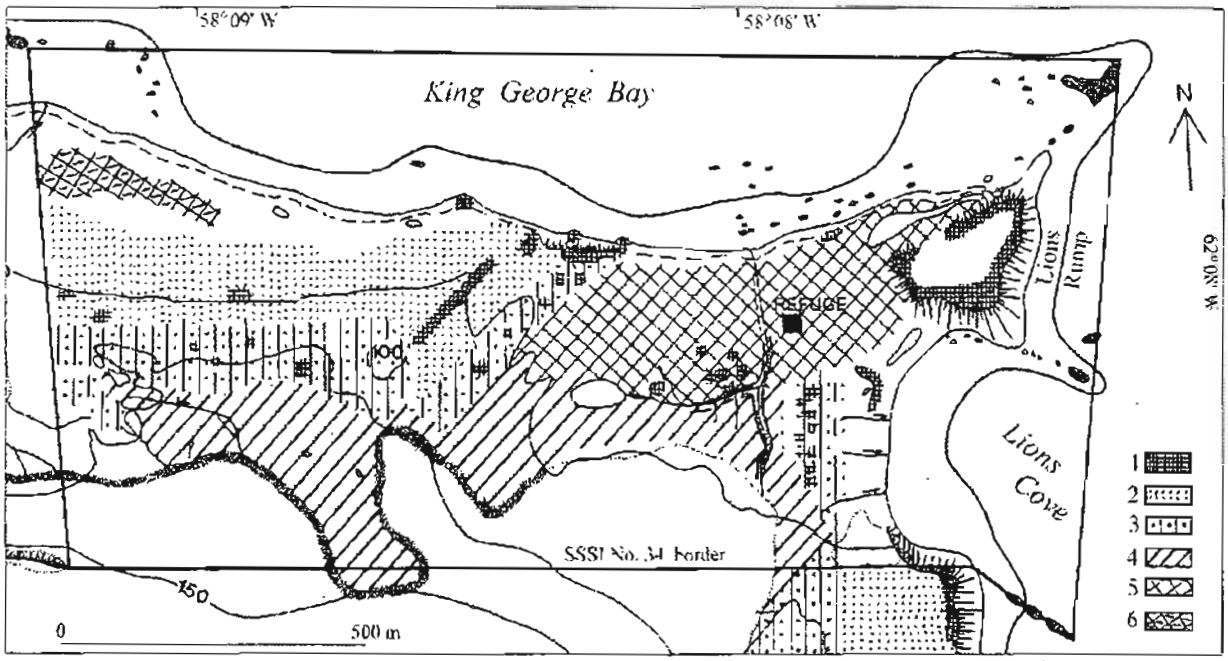


Map B. Lions Rump, SSSI No. 34, in relation to Antarctic Specially Managed Area (ASMA) and other SSSI`s on King George Island.



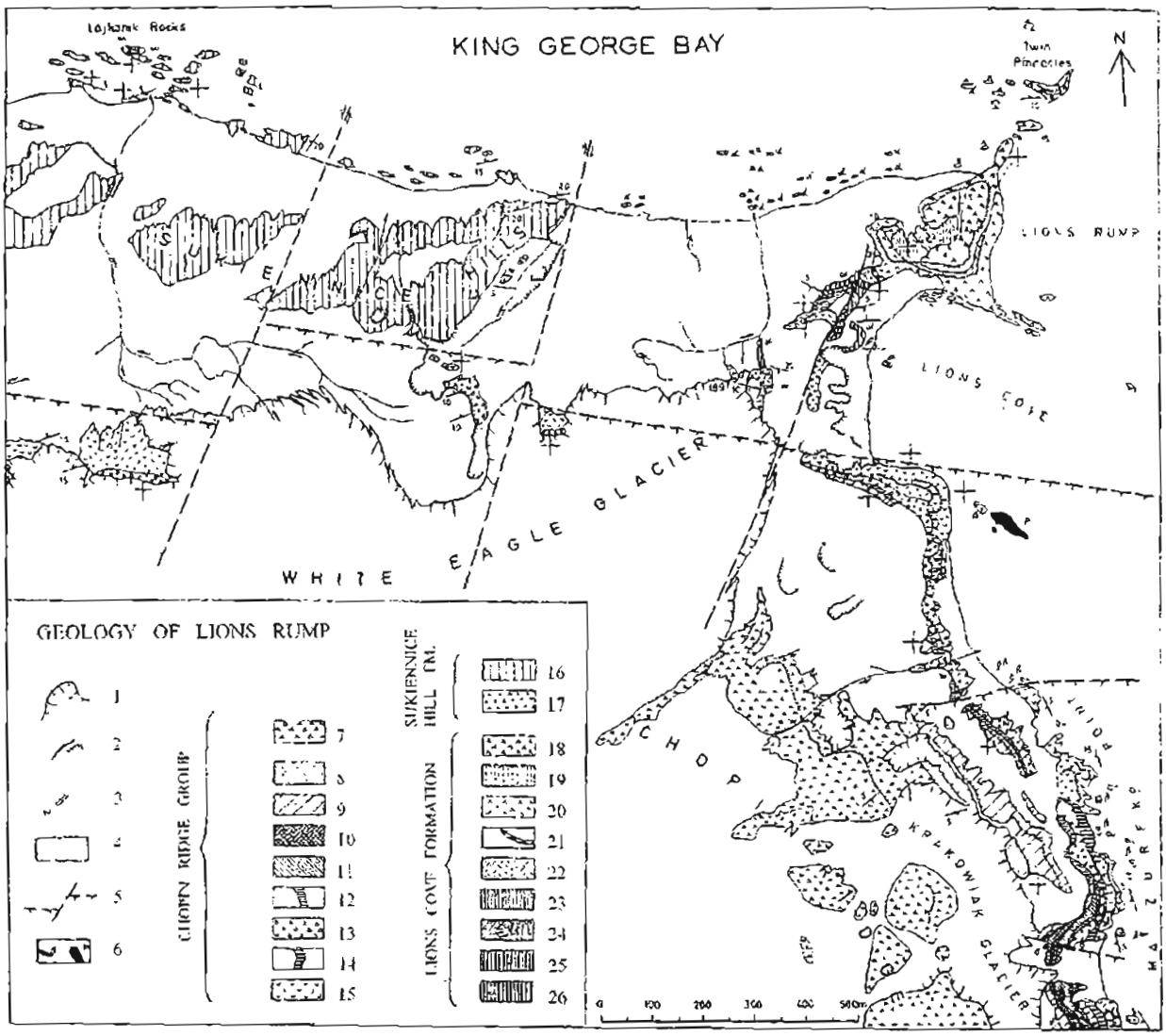
Map C. Lions Rump, SSSI No. 34.

1. cliffs and rocks
2. recent moraines and glaciers
3. lakes and streams
4. boundary of the SSSI No. 34
5. seal colony
6. penguin rookery



Map D. Vegetation map of Lions Rump SSSI No. 34.

1. Ornithocoprophilous lichen communities.
2. Mosaic composed of communities with screes on the hill sides, moraine slopes and snowbeds with primary lichen communities; There are sparse saxicolous and terricolous lichens such as *Lecanora polytropa, Rhizocarpon geographicum, Carbonea assenitiens* and *Leptogium puberulum.* In moister areast he community with *Leptogium puberulum, Staurothele gelida* and *Aspicilia* sp. dominates.
3. Terricolous lichens communities with *Usnea antarctica*; A mosaic of communities with abundant of *Usnea antarctica, Ochrolechia frigida, Psoroma hypnotum. Leptogium puberulum.* There are also mosses and locally *Deschamsia antarctica, Colobanthus quitensis.* The communities develop on the tops of moraines and also on their gentle slopes.
4. Moraines with plants. Usually the youngest moraines with substratum.
5. Community of *Drepanocladus uncinatus* occurs on beaches, floristically poor.
6. *Prasiola crispa* and *Deschamsia antarctica* communities. The nitrophilous alga, *Prasiola crispa* dominates here in cover. Locally associated with tussocks of *Deschampsia.*



Map E. Geological map of Lions Rump.

1. glacier margin
2. scarps
3. waterfall
4. Quaternary cover (moraines, alluvium, talus, recent and raised beaches, etc.)
5. faults (ticks on downthrown side)
6. Cape Syrezol (d - basaltic dyke, p - basaltic plug)
7. lava, tuffs and agglomerates
8. arkosic sandstone devoid of marine shells
9. basaltic sandstone, passing to conglomerate, with scattered dropstones
10. basaltic lava flows
11. basaltic hyaloclastite and basaltic conglomerate/breccias
12. fine- to medium-grained sandstone
13. basaltic conglomerate and sandstone, and basaltic hyaloclastite
14. coarse diamictite
15. basaltic lava with columns 1-3 m in diameter
16. basaltic lave flow and tuffs
17. agglomerate
18. hypersthene-augite-andesite
19. agglomerate and shale with coal
20. augite-andesite
21. tuff agglomerate and clay
22. tuff agglomerate and clay
23. tuff agglomerate and clay
24. tuff-shale with feldspar-rich sand and conglomerate interactions, with coal and petrified wood in the lower part
25. tuff-shale with feldspar-rich sand and conglomerate interactions, with coal and petrified wood in the lower part vesicular
26. vesicular andesit

Annex F: Guidelines for implementation of the Framework for Protected Areas set forth in Article 3, Annex V of the Environmental Protocol

Part I: Introduction

1.1 The Antarctic Treaty System and Protected Areas

A variety of instruments have been developed within the Antarctic Treaty system to help protect special places such as important wildlife breeding areas, fragile plant communities, cold desert ecosystems and historic places. These instruments have included the Agreed Measures for the Conservation of Antarctic Fauna and Flora and numerous recommendations to Parties.

More recently Annex V of the Environmental Protocol was agreed. It defines the basic structure or framework for Antarctic Specially Protected Areas (ASPAs) with a list of values that may merit special protection (Article 3(1) and types or examples of area to be protected (Article 3(2)) (refer Appendix I). Article 3(2) of Annex V states that Parties shall seek to identify such areas within a systematic environmental-geographical framework. Such areas will then be included in the existing series of Antarctic Specially Protected Areas.

Antarctic Specially Protected Areas is the only category of protected area provided for under Annex V of the Environmental Protocol (refer Article 2). Another category of area, Antarctic Specially Managed Areas (ASMAs) are defined in Article 4 and are areas with special management requirements. ASMAs are not considered in these guidelines.

Protected areas provide a higher level of protection for specific values beyond that achieved by other forms of planning and management measures under the Protocol. These areas are designated within geographically defined limits and are managed to achieve specific protection aims and objectives.

1.2 Aim of the Guidelines

The aim of the guidelines is to assist the Parties, SCAR, CCAMLR, COMNAP and the CEP to apply Article 3 of Annex V of the Environmental Protocol for the designation of Antarctic Specially Protected Areas. The guidelines provide a set of tools to enable more systematic assessment, selection, definition and proposal of areas that might require greater protection in accordance with the provisions of Annex V of the Environmental Protocol. It is hoped that they will facilitate methodical assessment and designation of such areas.

1.3 Structure of the Guidelines

The guidelines are organised into three main parts representing a process for assessing, selecting, defining and proposing new protected areas.

Part I is an introductory section, which offers a brief explanation of the existing mechanisms to protect Antarctic areas within the Antarctic Treaty system. This section also establishes the aims of the guidelines and details the way they are structured.

Part II provides guidance for assessing the potential of an area or site for protection and includes checklists on the framework for protected areas provided in Article 3(1) and 3(2). The checklist provides guidance on the values to be protected and on how to determine what should be protected and why, i.e. the reasons for protection. The concept of quality, including quality criteria, is defined to provide a further means of assessing whether an area merits being specially protected. Finally, the concept of environmental risk is presented as a very important aid in assessing the area's need for enhanced protection.

Part III provides guidance for defining areas for protection under Article 3 of Annex V of the Protocol, including ways to apply the concept of feasibility.

Part IV briefly notes the steps for proposing areas for protection including drafting of management plans and refers readers to the "*Guide to Preparing Management Plans for Antarctic Specially Protected Areas*".

NOTE:

As these guidelines have no legal status, those wishing to establish new protected areas should also carefully examine the provisions of Annex V of the Environmental Protocol to the Antarctic Treaty and should seek advice from their national authority at an early stage.

Part II: Assessing the protection potential of an area

2.1 Assessing Values to be Protected (Article 3(1))

When seeking to assess whether an area merits protection, a clear understanding is needed of the values to be protected. Values are generally taken to mean something of worth, merit or importance. Table 1 offers a checklist of the values listed in Article 3(1) that could be used to help identify those values represented in possible specially protected areas.

Table 1. Checklist of the values listed in Article 3(1)

Environmental values	does the area contain physical, chemical or biological features e.g., glaciers, fresh water lakes, melt pools, rock outcrops, plant life or animal life that are particularly unique or representative components of the Antarctic environment?
Scientific values	does the area contain physical, chemical or biological features of special interest to scientific researchers where the principles and methods of science would be applicable?
Historic values	does the area contain features or objects that represent, connate or recall events, experiences, achievements, places or records that are important, significant or unusual in the course of human events and activity [1] in Antarctica?
Aesthetic values	does the area contain features or attributes e.g., beauty, pleasantness, inspirational qualities, scenic attraction and appeal [3] that contribute to people's appreciation and sense or perception of an area?
Wilderness values	does the area contain characteristics e.g., remoteness, few or no people, an absence of human-made objects, traces, sounds and smells, untravelled or infrequently visited terrain that are particularly unique or representative components of the Antarctic environment? [3]
Combination	does the area contain any combination of the above values?
Ongoing or planned scientific activities	does the area include ongoing or planned scientific projects or activities?

If it is considered that any examples of the values listed in Article 3(1) are contained or represented in a particular area then further investigation of the area for protected area status may be worthwhile.

2.2 Assessment of Potential Protection and Use Category (Article 3(2a-i))

Article 3(2a-i) provides a list of examples of areas that can be designated as ASPAs. It should be noted that the specific examples of areas identified are not exclusive and that other examples of protected area could potentially be included provided they aim to protect the values set out in Article 3(1). In addition, it should be noted that Article 3(2) does not provide a uniform series of values, features, objectives, categories or uses of potential ASPAs.

A conceptual methodology has been developed to help understand more systematically what should be protected and why (i.e. examples or categories of areas and reasons for their proposed designation). Table 2 provides a checklist of the potential types or categories of areas to be protected and their management or use objectives. The aim is to provide a tool that can be used for the clearer identification of the important components or attributes of possible protected areas once the values to be protected have been agreed (refer section 2.1).

The checklist may also help to ensure that possible protected areas are considered in a more standardised way and to aid further work in the designation process (e.g. assessment and subsequent development of management plans.

Table 2. Checklist for identifying and clarifying the type of area to be protected (protection category) as well as the use or reasons (use category).

Protection Categories (i.e. what is being protected)	
Ecosystems	would the area be protected for its ecosystems? I.e. dynamic complexes of plant, animal and micro-organism communities and their non-living environment interacting as an ecological unit [4].
Habitats	would the area be protected for its habitats? I.e. the places or types of site where an organism or population naturally occurs [4].
Species assemblages	would the area be protected for its species assemblages? I.e. important or unusual groupings or populations of one or more species of fauna or flora (usual type of area protection of species in Antarctica).
Species (taxa)	would the area be protected for its species? I.e. special groups of organisms which resemble each other and sometimes are linked to a common habitat to a greater degree than members of other groups, and which commonly form reproductively isolated groups that will not normally breed with members of another group [5].
Geological, glaciological or geomorphological Features	would the area be protected for its geological, glaciological or geomorphological features? I.e. distinctive or special characteristics of the history, structure or components of the Earth's crust, rocks, fossils and cryosphere or a result of present or past processes beneath or at the Earth's surface in Antarctica
Landscapes	would the area be protected for its landscape? I.e. expanses of coastal or inland scenery, usually at a scale where they contain a mosaic of inter-related ecosystems, and characterised by particular patterns of geometry, heterogeneity, patch dynamics and biophysical processes [6].
Aesthetic	would the area be protected for its aesthetic features? I.e. attributes concerned with beauty, appreciation, perception and inspiration [3].
Wilderness	would the area be protected for its wilderness features? I.e. attributes concerned with remoteness and a relative absence of both people and indications of past and present human presence or activity [3].
Historic	would the area be protected for its historic features? I.e. things which represent or recall events, experiences, places, achievements or records that are important, significant or unusual in the course of human events and activity in Antarctica.
Intrinsic	would the area be protected for its intrinsic features? (The real or inherent nature of a thing is worth protecting in its own right i.e. without requiring use).
Use Categories (why the area is being protected)	
Scientific research	would the area be protected for scientific research?
Conservation	would the area be protected for its conservation purposes? (Conservation embraces both protection and judicious use, management of biodiversity, intrinsic value and importance in maintaining the life sustaining systems of the biosphere: distinguished from "sustainable use" and "sustainable management" [4])

2.3 Quality Criteria

Quality criteria can be applied as a checklist to evaluate further whether an area deserves special protection or not. The quality of a potential protected area can be thought of as an overall degree of excellence in terms of the values it contains. Table 3 provides a checklist of questions that can be used to assess the quality of a proposed protected area.

Table 3. Checklist for assessing quality aspects of proposed protected areas

Representativeness

- Is the potential area **representative** of other comparable parts of Antarctica?
- Does it contain ecosystems, species, habitats, physical, historic, aesthetic and wilderness or other values or features represented elsewhere?
- What contribution would the area make to an Antarctic Protected Area system with a full range of outstanding natural environmental, biological, geographic and geological values of the Antarctic region?
- In relation to Antarctica as a whole, what proportion of the values or types of protected area identified in Articles 3(1) and 3(2) are represented in the site being investigated?.

E.g. an area containing representative examples of marine & terrestrial ecosystems & assemblages of species of seabird may be higher quality than one containing a single colony of a common species.

Diversity

- What **diversity** of species, habitats or other values or features does the area contain?

For example an area might be of higher quality if it contained a greater diversity of biological and/or geological features than a nearby area.

Distinctiveness

- Is the potential area **distinctive** from other areas? How different is it from other areas?
- Does it contain species, habitats or other values or features not duplicated elsewhere? Are they unique, rare, uncommon or common?
- Are there naturally uncommon taxa present, including *"sparse"* taxa which occur within typically small and widely scattered natural populations, *"range restricted"* taxa whose distribution is naturally confined to specific substrates (e.g a specific rock type), habitats (e.g. geothermally-heated soils) or geographic areas (e.g. nunataks), *"vagrant"* taxa which may appear for short periods without establishing long-term breeding populations, and *"seasonal"* taxa which migrate into the polar regions during summer?
- Are there naturally uncommon abiotic features present that have been formed or preserved through an unusual or infrequent set of geological, geomorphological or glaciological processes?
- *For example an area containing the only example of a terrestrial ecosystem or a unique fossil locality might be of higher quality than one that contained a common terrestrial ecosystem or type of fossil.*

Ecological importance

- How **important**/critical is the area ecologically or numerically for key species, ecosystems or as a type locality?
- Do the number of individuals or groups occurring at the area include a high proportion of the global population? *For example, if 90% of the global population were present, this would represent a key population and a very important ecological site.*
- What contribution does the area make to maintenance of essential ecological processes or life-support systems or habitats?
- Does the area have any inherent vulnerability due to local endemism, rarity of species, biological vulnerability or for other reasons?

Degree of interference

- To what extent has the area been subject to human interference?
- Does the area lack signs of human activities (e.g. tracks, litters)?
- Is there minimal loss or addition of species, natural processes and abiotic material?
- What is the degree of visitation and alteration of the adjacent landscape?

E.g. an area that has not experienced local human-induced change and is protected from it because of isolation may have higher quality wilderness values and might be more valuable as an undisturbed reference area than a less natural area.

Scientific and monitoring uses

- What is the potential for the pursuit of science including gaining of knowledge by study and analysis?
- What is the potential of the area to be used as a reference area (e.g. for environmental monitoring)?

The reasons for area protection summarised in Tables 1 and 2 could be analysed together with the quality criteria in Table 3 using the matrix set out in Table 4 as a guide. This approach may provide a convenient and efficient method of evaluation and identification of a potential area. It could also help in the comparison of potential areas and for determining priorities for protection.

Table 4. Matrix of area values and categories from Tables 1 and 2 against quality criteria from Table 3.

	Quality Criteria					
Value / category	Representa-tiveness	Diversity	Distinctive-ness	Ecological Importance	Degree of Interference	Science & monitoring
Ecosystems						
Habitats						
Assemblages						
Species						
Features						
Landscapes						
Aesthetics						
Wilderness						
Historic						
Science						
Conservation						
Intrinsic						

2.4 Environmental Risk Assessment

Environmental risk assessment can be used to further assess possible protected areas i.e. to help decide whether a particular area merits protection of its special characteristics (not as a means to modify or prohibit ongoing activities in or near the area). Risk assessment should assist in identifying what the actual and potential threats and risks are to an area containing outstanding values.

This step in the protected area process recognises that every area identified as having important values may not need to be formally designated as an ASPA. Most areas will not need additional protection because they are naturally robust or because the Antarctic Treaty system already provides sufficient protection. It should be noted that the degree of environmental risk to a potential area (e.g. as

identified through application of the checklist in Table 5) is not a prerequisite for formal protection of an area under the Environmental Protocol. However, areas identified as subject to risks that threaten the identified values to an unacceptable or unmanageable level may need to be considered as a priority or more worthy of more formal protection.

Table 5 provides risk criteria in the form of a checklist for assessing environmental risk to a possible protected area.

Table 5. Checklist for assessing environmental risk to a possible protected area

Human activities and impacts

- Are human activities regularly, infrequently or almost never carried out in the area?
- Are biological or abiotic components or processes of the area vulnerable to any existing or likely future human activities in the area itself or nearby?
- Could these activities directly, indirectly or in a cumulative way result in impacts on the values for which this area has been identified or modify them in any way?
- How likely, frequent and intensive might the impacts be and over what temporal and spatial scales?
- When disturbance occurs, what is the time taken to return to pre-disturbance or equilibrium levels?

Natural processes

- Are natural processes (e.g. atmospheric, climatic, marine, biological or glacial processes) likely to modify the area or its values?

Natural variability and viability

- What are the short and long term variations (e.g. seasonal changes) in populations of biota present in the area?
- Is the likely variation due to natural processes likely to be smaller, similar to or larger than impacts of human activities in the area?
- Are there any medium- or long-term indications that natural trends could result in significantly different characteristics of the area which could effect its future viability, require a reassessment of protected status or necessitate changes in management?
- To what extent does natural buffering protect the area from outside influences?

Non-Antarctic threats

- Would protection of the area be compromised by processes originating or driven from outside the Antarctic such as global change, ozone depletion or long-range transport of contaminants such as long-lived chemical pollutants and introduction of non-native species?

Urgency

- Do human activities pose imminent environmental risks?

Scientific uncertainty

- How well known are the natural values and other characteristics of the area and potential impacts of human activities on them?
- Could these uncertainties mask significant threats to the area and its values?

Potential areas that "score" highly in regard to the checklists in Tables 3 and 4 (e.g. meet many of the criteria listed) and that have been assessed as being at some risk environmentally (Table 5) may be considered for further investigation as a possible ASPA. Consideration should then be given to advancing the proposal further, in particular into the selection and proposal phases.

Part III: Defining areas for protection

3.1 Tools for Assisting in Selecting Protected Areas

Once potential areas have been assessed, further design and assessment is needed to ensure that they are suitable for eventual selection and proposal as ASPAs. Area design and feasibility criteria are two tools that can be used to assist in further defining of areas for protection.

3.2 Area Design

There is a wide body of literature on aspects of protected area design and selection relevant here which is beyond the scope of these guidelines. Important aspects of design include boundaries, size and shape, access, management tools, duration and relation to other protected areas (see Table 6). Proposers may wish to consult Lewis-Smith and others (1992), Thorsell (1997), IUCN (1998), FAO (1988) and Dingwall (1992).

3.3 Feasibility Criteria

The feasibility of a possible protected area is defined here as *how possible is it to implement proposed management objectives for a particular area under consideration*. The criteria defined in Table 6 could be used to assess feasibility. While the meaning of each of these criteria is generally clear, the implications or their application may not be. Therefore Table 6 is structured as a checklist with additional questions to highlight some of the issues involved and to offer further guidance.

Table 6. Checklist of feasibility criteria for assessment of possible protected areas

Boundaries

- Are the proposed boundaries consistent with management objectives? (E.g. do they protect foraging areas of birds in an important breeding area and/or do they enclose other ecosystem components required for continuity of species identified?).
- Can boundaries be easily defined for management purposes and identified by visitors? (E.g. can fixed natural boundaries such as mountain peaks, ridgelines, shorelines, or water depth be used?).
- Can management objectives be met regardless of the future use of areas adjacent to the protected area boundary, including conflicts between different values or management objectives, and acceptability to others?

What are the existing scientific or other uses of the area?

- Are there conflicting values (e.g. between environmental and scientific values in Article 3(1)) or between protection and use categories, or management objectives?

Size

- Is the area large enough to maximise the chance of management objectives being achieved?
- Is it large enough to contain all or most of the key elements identified, in their natural relationships, so that it will be self-perpetuating?
- What is the minimum size needed to achieve management objectives?
- Is the area small enough to minimise conflicts between different values or management objectives?
- Is the area large enough to accommodate future changes (e.g. due to climate change?)

Possible management tools

- Are there management tools available that could be used to help achieve management objectives and minimise conflicts? (E.g. would zoning be useful to facilitate recognition, protection and management including partitioning between objectives such as protection of vulnerable species in

core breeding areas, provision of reference areas and capacity for human activity in suitable fringe areas?).

- Can management programmes be formulated to attain management objectives? (E.g. signage or boundary markers, survey and research, monitoring, any specific information needed for reporting).

Time period/duration

- Can the area be protected for a time period that allows full achievement of management objectives?
- Are there some seasonal periods when parts of the area or species in it are not vulnerable to human activity?

Accessibility/logistics

- Is the area sufficiently accessible for management operations?
- Might the logistics needed negatively impact on management objectives and are there alternative management options?
- Would inaccessibility help achieve management objectives by deterring potentially impacting activity?

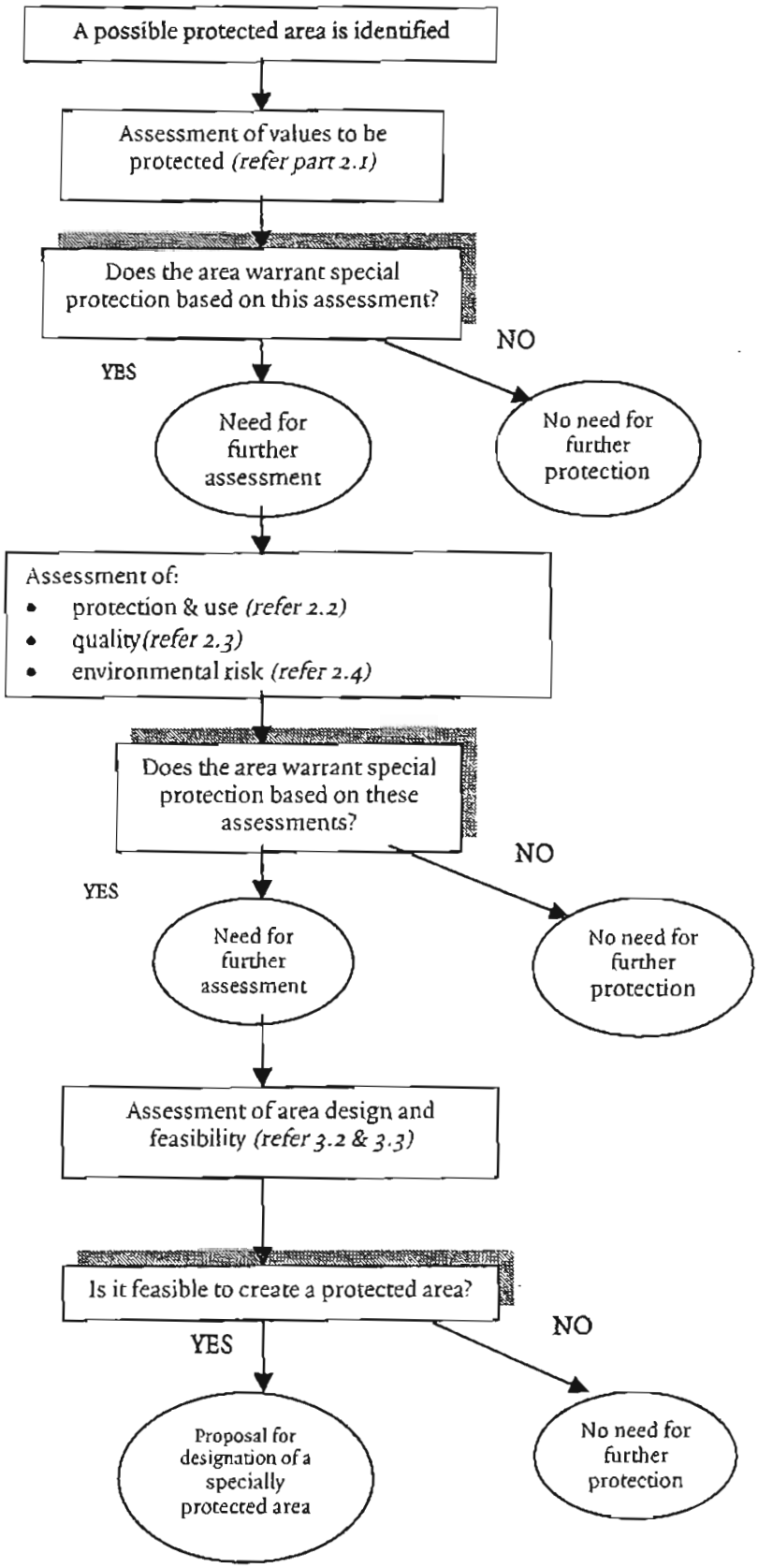
Ability to protect more than one value and meet different management objectives (i.e. complementarity)

- Is there more than one value or objective in Article 3 (1) & 3(2) that can be protected in the area?
- Would the site add value to the Antarctic protected area system, in quality as well as quantity?
- Is there an appropriate balance between the costs and benefits of protecting the area, and appropriate equity in the distribution of it and adjacent protected and unprotected areas?

Therefore, if an area has been through an assessment process (Part II), and has satisfied feasibility criteria (Part III), it may be considered as a worthy candidate for further evaluation as a potential ASPA. The outcome of checking and analysis against criteria in Table 6 could also be used to help prepare the draft management plan for the area.

Figure 1 below provides a flowchart illustrating the assessment process from identifying the values and potential protection categories of a proposed area, to considering quality aspects, to identifying any environmental risks, to assessment of feasibility and finally to a decision on whether to develop a proposal for designation of the site as an ASPA.

Figure 1. The assessment process for potential protected areas as outlined in Part II and Part III of these guidelines.



Part IV: Proposing areas for protection

4.1 Drafting Management Plans for Proposed ASPAs

Once a candidate area has been assessed, it is ready for the next stages in the process. A draft management plan is prepared as required by Article 5 of Annex V. The document *"Guide to the Preparation of Management Plans for Protected Areas"* was recommended by CEP 1 and adopted at ATCM XXII in 1998 to give some practical elaboration of Article 5. This document should be referred to when drafting management plans for ASPAs.

4.2 Further Steps in the Designation Process

The final stages in the designation process involve formal consideration (review) by the Antarctic Treaty Consultative Parties of a draft management plan following the outline in Article 6 of Annex V.

Part V: Documentation

5.1 Articles 3(1) and 3(2) of the Environment Protocol

Article 3(1)

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

Article 3(2)

Parties shall seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas:

(a) areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;
(b) representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;
(c) areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;
(d) the type locality or only known habitat of any species;
(e) areas of interest to ongoing or planned scientific research;
(f) examples of outstanding geological, glaciological, or geomorphological features;
(g) areas of outstanding aesthetic and wilderness value;
(h) sites or monuments of recognised historic value; and
(i) such other areas as may be appropriate to protect the values set out in paragraph 1 above [Article 3(1)].

5.2. References

(see bibliography for full citation where needed)

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3. adapted from Porteous 1996 with reference to philosopher Kant.
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Annex G: Opening Addresses

Opening address of the State Secretary of the Netherlands Ministry of Agriculture, Nature Management and Fisheries, Ms. Geke Faber given on Monday, September 11th, 2000

Dear delegates,

Welcome to the Netherlands, welcome to this special Antarctic Treaty Consultative Meeting. It is an honour to meet you here in The Hague today. The Dutch government attaches great importance to the Antarctica Treaty and the work of those involved. Particularly that of the Committee on Environmental Protection. I would like to take this opportunity to tell you something about the Netherlands' policy on Antarctica. The basic principle of this policy is very simple: Antarctica must remain Antarctica.

The Netherlands is committed to maintaining the pure, untouched nature of Antarctica.

This is in all our interests. There is only one Antarctica. A unique *global commons*, a place which belongs to us all. Therefore it is the world's responsibility to protect Antarctica.

The natural environment on Antarctica is vulnerable. Along its coast in particular, Antarctica posses an ecological wealth which is invaluable. But it is along its coast that the threats begin.

And the number of threats is only growing.

The visitor constitutes the most direct threat. In my national policy on nature and the countryside, the enjoyment of nature is equally as important as the protection of the rural environment. "Nature for people" is our motto. But this cannot be applied to Antarctica.

The damage which people cause is simply too great. Lichens, for example, can take a hundred years to recover from one footstep. So Antarctica is not at all suitable for tourism.

Other human activities also constitute a threat. Even the researchers there are aware that their work, however carefully undertaken, can also cause a disturbance.

The direct threats are obvious. People leave their mark. But the indirect threat to the environment caused by human activity may well be much greater. I am referring here to *global warming*. Antarctica plays a crucial role in controlling the global temperature and the global water balance. A rise in temperature will affect the whole world, and the Netherlands in particular. Not least, because the condition of the ice on Antarctica determines whether we in the Netherlands can keep our heads above water. We do not know how developments will unfold. But it is clear that we cannot simply rest on our laurels.

The ATCM, of course, does not have that much influence over the world climate.

But you do have influence over the environmental protection of Antarctica.

I hope that the fruitful discussions which have taken place on this subject over the last few years will soon result in concrete measures. What comes to mind first is the Comprehensive Environmental Evaluation. Reaching a consensus on this subject would represent a major step forward. A step which you could well take in the next few days.

Ladies and gentlemen, Antarctica is a *global commons*. We are all responsible for what happens there. And if we fail in that then we are also all to blame. There is no excuse: no one lives there, there is no wrong regime, and the Antarctica treaty is supported by right-thinking countries. Here we can show that we are capable of ensuring that the last remnants of untouched nature can remain untouched. Antarctica must remain Antarctica.

The Netherlands will continue to work for this. Together with you, I hope.

Thank you.

Address given by the Secretary General of the Ministry of Foreign Affairs of the Netherlands, Mr. Frank Majoor, on Tuesday, September 12th, 2000

Dear delegates and colleagues,

We are very happy that all of the 27 consultative parties have come to The Hague to this Special Antarctic Treaty Consultative Meeting. We had to organise the meeting at short notice and with a very small staff, but I hope you will forgive any inadequacies in the organisation. The fact that you all decided to come shows how much importance the members of the Antarctic Treaty Community attach to our cooperation, and especially to our common efforts to build an effective regime for the protection of the Antarctic environment.

It would have been disastrous for the credibility of the Antarctic Treaty System if, while we are only in the initial stages of the work of the Committee on Environmental Protection, we had had to say to the International Community: "yes, we did decide, in Rule 9 of the Rules of Procedure of the CEP, to meet once a year to discuss our plans for the annual Antarctic season, but, sorry, we can't find a place to meet, so we'll just skip this year!" This we found unacceptable, and this is why we invited you all to The Hague. It is a great pleasure to us that you are all here under the experienced leadership of Prof. Olav Orheim to continue the work of the Committee on Environmental Protection.

But, dear colleagues, to quote the text of an old saying, "we've got to stop meeting like this!". It is no good that the countries making up the Antarctic Treaty system have to wait with bated breath every year to see if this or that country has put the wherewithall together to organize a meeting – and, as we know, with the expansion of the number of members and of the agenda, this is no small thing.

I think we all agree that we need a lean permanent secretariat to provide the minimal continuity, an archive, a database, a default location for meetings, and so on. I don't want to incite at this occasion a repeat of the many debates on the location of the secretariat, but I only want to appeal to each and every Antarctic Treaty System nation here represented to let the need for a speedy resolution of this problem prevail over any other considerations having to do with a specific location.

Dear delegates, I am very happy, also, that the informal consultations on the liability annex to the Environment Protocol are continuing during this meeting. This also, is a discussion that has been going on for too long, and that, if it is prolonged for much longer without any results, will threaten the credibility of the Antarctic Treaty System. We decided in 1991 in Article 16 of the Environment Protocol to adopt a liability protocol, and, nine years later, we haven't been able to adopt one. I therefore wish strength to Mr. Don Mackay and his colleagues wisdom and determination in preparing the basis for a consensus solution at the next regular ATCM – wherever that may be!

Thank you.

Address given by the State Secretary of the Netherlands Ministry of Transport, Public Works and Water Management Monique de Vries, on Thursday, September 14th, 2000

Ladies and gentlemen,

The first time that I got acquainted with Antarctica was when I was in a position in 1999 to represent the Netherlands at the Antarctic Ministers Conference that commemorated the 40th birthday of the Antarctic Treaty. I would like to share with you some of my thoughts that I had during that special visit and that I wrote down in a journal on the 26th of January of that year:

Here I am right on the edge of the land mass where the sea ice meets the continental ice shelf. All around me nothing but a vast emptiness. The mountains in the distance are no less than three thousand metres high. The whiteness of everything and the purity of the air strangely distorts my senses. I feel as if could just reach out and touch those mountains.

This experience was one of the few times that I found myself so emotionally involved in a matter for which I had a shared responsibility. All of us gathered here in The Hague this week on the occasion of the 12th session of the Antarctic Treaty Consultative Meeting have our own reasons and drives for being involved in the work on Antarctica. In one way or the other I think that we all have been touched

by that special continent. We are in the privileged position to work with each other within the framework of the Antarctic treaty and by doing so preserve this unique part of our globe for future generations.

You have had a busy week considering various matters related to the Committee on Environmental Protection and the Liability Annex consultations. The latter is of the utmost importance, after all just suppose some sort of environmental disaster occurs despite of our precautions. Then we shall need to have a firm agreement in place about solutions and responsibilities. If such arrangements are lacking we find ourselves in a very difficult position indeed; one that might even prove to be too difficult to solve for the learned judges of the Peace Palace in which we are gathered here this afternoon! However it would not be the first time that they would have had to give a ruling on a matter related to Antarctica, bearing in mind the case of the Magellan Straits. But like everything in ordinary live it's better to prevent it from coming that far. There can be no true winners in environmental cases.

Therefore we should all strive to work within the spirit of the treaty that was established in the name of world peace and freedom of scientific research. And this is another of my Ministry's particular interest in Antarctica. Every year a considerable budget is allocated to scientific research. This will help us to co-operate with partners and is aimed at preservation and conservation of Antarctica's living and natural resources. All of our research efforts will give us greater understanding of not only the Antarctic continent but also of how Antarctic ice influences ocean currents and climate zones in general and how in turn that influences our own regional seas and oceans in particular. So here again Antarctica reaches out and influences us more directly than many of us might have thought possible.

When I returned from my voyage to Antarctica I felt the need to make more people aware of the unique character of this great continent. With a lot of people that are involved in Antarctic work in the Netherlands a booklet was composed that will allow more people to get in touch with Antarctica. And if it does I am confident that they will in their turn become new ambassadors for this unique place on earth. Hereby I would like to give to you Mister Olaf Ohrheim the first copy of the brochure that will be distributed among all the participants and by doing so would like to thank you for your hard work that you have done within the Committee on Environmental Protection over the past years.

I would like to conclude my speech by wishing you all good luck in finishing your work here in The Hague.

Thank you.

Address given by mr. Rubén N. Patto, head of the Argentine Delegation

Mr. Chairman,

On behalf of the Argentine delegation, allow me to congratulate you on your well deserved appointment as chairman of the XIIth Special Antartic Treaty Consultative Meeting.

The Argentine delegation wishes to express its deepest appreciation to the Government of the Netherlands for generously hosting this meeting in the beautiful city of The Hague, wich is a symbol of the development of international law, the seat of the international court of justice and the academy of international law.

The outstanding efforts and efficiency showed by the hosts in the organization of this meeting will undoubtedly contribute in a positive way to the important issues we are going to deal with.

The conservation of the delicate Antarctic ecosystems requires the members of the Antarctic community to deepen their commitment to the protection of the environment. It also requires that this matter continues to be an essencial topic of our concern and discussions. The efforts done by the Consultative Parties aimed at the continuity of the Committee of Environmental Protection ´s work, show we are in the correct way.

In this regard, the Argentine government wishes to inform that the instrument of ratification of Annex V of the Madrid Protocol has been deposited.

My country is one of the gateways to the white continent. This stimulates our special interest in the protection of the Antarctic environment and its dependent and associated ecosystems. Argentina develops, on a permanent basis, scientific research programmes and international cooperation

activities, with a special emphasis on environmental protection aspects, in order to comply with the purposes and objectives of the Antartic treaty.

As regards liability for damages to the Antarctic environment, my delegation wishes to note and appreciate the efforts done by the group of legal experts responsible for drafting a specific Annex to the Madrid Protocol. This work shows the importance that Consultative Parties attach to this matter.

In relation to the establishment of a permanent seat for the secretariat, I would like to express my country 's special appreciation for the Consultative Parties' permanent and valuable support to the candidacy of Buenos Aires, currently the only nomination on the table.

The Argentine Republic regrets that a permanent secretariat is not yet in place, and expresses its deep concern for the lack of resolution of this essential issue, a situation which undermines the essence of the Antarctic cooperation and the effective functioning of the Antartic Treaty System.

In the light of the solid and permanent support gathered by Buenos Aires, my delegation wishes to express that the Argentine government firmly maintains the candidacy of Buenos Aires, and reiterates its confidence in the quick solution of this question according with the general will expressed by the Consultative Parties.

Thank you Mr. Chairman.

Addres given by by the Head of the Delegation of the Republic of Korea

Mr. Chairman,

On behalf of the Korean delegation, I would like to congratulate you on your election as Chairman of the Special Antarctic Treaty Consultative Meeting. I am convinced that, under your able leadership, this meeting will produce fruitful and meaningful outcomes, thus promoting the lofty goals of the Antarctic Treaty and its Protocol. To that end, you can be assured of my delegation's full support and cooperation.

My delegation would also like to take this opportunity to express its gratitude to the Government of the Kingdom of Netherlands for excellent preparation and hospitality in hosting this special meeting.

Mr. Chairman,

During the last four decades, we have well managed to cooperate and coordinate our conflicting interests in maintaining and developing the Antarctic Treaty System. The entry into force of the Madrid Protocol and the establishment of the Committee for Environmental Protection are a good example of such cooperation and coordination, which has led the Treaty System into a new stage for comprehensive environmental protection.

The consolidation of the role of the CEP and the establishment of the liability regime are two major tasks before us. In this regard, my delegation welcomes and supports the opening of this special meeting.

Since the entry into force of the Madrid Protocol in 1998, we have worked closely to implement the Protocol and help the CEP get started on its work. In its two previous meetings, the CEP has successfully fulfilled its task to develop practices relating to the environmental impact assessment as well as to the exchange of data and information on the implementation of the Protocol. We are of the view that this year's third meeting of the CEP is particularly important, since it will be the first time that we consider and examine the Comprehensive Environmental Evaluation submitted by the Consultative Parties. This consideration, which will be a major role of the CEP, will mark a milestone in the operation of the comprehensive regime.

Taking this opportunity, my delegation would like to emphasize that the CEP must strike a balance between the environmental protection and the peaceful scientific research of the Antarctic, considering that this region is devoted to peace and science.

Mr. Chairman,

The elaboration of a liability regime with respect to environmental damage in the Antarctic is another important task we are facing. During the last ATCM, we adopted a thematic approach and held several

informal meetings in order to discuss important issues such as the definition of damage, the definition of operator and the exemptions from liability. My delegation notes with satisfaction that sustained efforts among Consultative Parties developed convergences on some of the themes during the 24th session of the ATCM. It is time for us to renew the spirit of cooperation and compromise on which the current successful regime was based. My delegation hopes that substantive progress could be made during this meeting, so that the finalization of the draft Annex on Environmental Liability to the Protocol will be concluded in the near future.

Mr. Chairman,

Emphasizing the importance of the principle of international cooperation for us to achieve an efficient operation of the Antarctic Treaty System, I would like to reiterate my Government's full commitment to this cause. The Republic of Korea will continue to play a constructive role for the development of this system.

I thank you for your attention, Mr. Chairman.

Address given by the Head of the South African Delegation

Mr. Chairman,

On behalf of the South African delegation, I would like to congratulate you on your election as the Chair of this Special Antarctic Treaty Consultative Meeting (SATCM). We would also like to record our due appreciation to the Netherlands Government for kindly hosting this meeting.

We are pleased that the Committee for Environmental Protection (CEP) has due to the generous Netherlands offer, been able to meet this week and thus ensure the obligations of the Madrid Protocol are continued to be met.

South Africa notes with satisfaction the informal consultations on Liability, which are being held in conjunction with this SATCM. It is South Africa's extreme hope that these consultations will carry forward the development of an Antarctic Environmental Liability regime.

As an original and active member of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), the growing contact between CCAMLR and the CEP heartens South Africa. Not only does this contact have important practical consequences, it also serves to harmonise the common concerns of two key arms of the Antarctic Treaty System (ATS).

Although not a topic on the agenda of this meeting, South Africa recognises the growing need to improve the work of the ATS in general and the CEP in particular. To this end, South Africa recognises the importance of, and remains committed to, developing a permanent Antarctic Treaty Secretariat.

Finally, South Africa remains committed to and looks forward to making continuous efforts in cooperation with other Parties to ensure that matters pertaining to Antarctica are always given the due consideration they deserve, not only during the course of this meeting but in future as well.

Thank you.

Address given by the Head of the Romanian Delegation

Mr. Chairman,

On behalf of the Romanian Delegation, I would like to take this opportunity to express my vivid gratitude to the Government of The Netherlands for its splendid hospitality, as well as for its excellent preparation for this meeting.

THE TOURISM AND THE ANTARCTIC ENVIRONMENT, TWO COMPONENTS OF THE MODERN CIVILIZATION

The environment by and large represents the natural factors as a whole (chemistry, physics, biology) and cultural sociology, capable to work on both on lively organisms and on human activities.

The Antarctic environment is present in all our movements, it is all that naturally and artificially surrounds and it is up to us to make it more favorable to our lives. So there is the necessity to mention

and consider all the environmental factories, - the greater and greater effort in a world where what is called civilization is inclined to destroy them.

The tourism means travelling for mere pleasure, somewhere else than usual places. One of the touring conditions is represented by the environment concerned, as we can't imagine any pleasure in an unbearable environment. To undertake tourism in a inappropriate environment is properly impossible to achieve.

What is mentioned above is more available if we confine to the tourism in Antarctic, bearing in mind the framework implied by the present and Special Antarctic Treaty Consulting Meeting (SATCM) and Committee Environmental Protection (CEP), the outstanding leadership of nature's protecting in Antarctic.

The tourism implies first of all a clear, nice and interesting environment. These qualities enable classification of the values offered by the nature to tourism; on the first place being the exceptions, the wonderful places in Antarctic. This is seen as mixture of interests for these places, both from those to protect them and those to exploit them for tourism.

The tourism and environmental protection become gainsaying. The natural values are to be protected but we can't hinder people to investigate than. When the first national park in the world Yellowstone, was set up, it was also mentioned, "for the people's rejoices and advantage".

The growth of the Earth population results in the growth of touristic flux and an increasing danger for the natural beauties in the Antarctic area . I won't use any figures in this respect, but only to mention some vital issues to lay the realistic foundations in the relationship: environment and tourism.

1. An interesting element leading to the establish of the environment is the touristic circulation . Even the paths in a fragile area may result in serious destructions.
2. The domestic waste.
3. The phone pollution.

There are some of the risks, the tourism may bring forth to the Antarctic environment. The reverse of the problem – Which are the advantages of exploiting the tourism to the Antarctic environment?

Such as:

- The active conservation of the Antarctic regions protected by forest planning to hinder the wandering in the wilderness.
- The collection of funds for protection works.
- The working out and printing of particular books needed to study and learn the natural values of the Antarctic.
- The spreading of the ecological idea and civil education.
- More opportunities for international dialogues on scientific and ecological themes in the regions of 60° included in the Antarctic Treaty incidence.

To sum it all up, as in all human activities even in the field of tourism practiced in the Antarctic, the equilibrium between the development and protection of the environment must be observed.

For all the Antarctic areas the parameters of touristic development should be looked into simultaneously with a detail study on the ecological impact.

The study should be properly posed as the object to be analyzed is unicum often a landscape with elements of great value. If mistakes are made, they can't be put right or replaced.

The tourism and the Antarctic environment – two entities indestructibly linked that strengthen the rights and duties of the countries having signed the Antarctic Treaty.

The tourism without a proper environment cannot be conceived but its reverse is also true, as the large regions of the nature are accounted for, only with regard to the human being. Grand Canyon

without millions of sightseers would be only a gap in the crust of the Earth, to which only the human eye awards the quality of the unique landscape in the world.

The man is the measure of things. Unfortunately it is the truth that is more and more experienced through its negative side. The man is the measure of the degrading environment, of the nature and of his own living conditions. Out of this slow but unrelenting destruction of the nature brought forth by the progress of the civilization there should be saved the exceptions, the rarities and the great Antarctic beauties. In this respect we should save then for our own benefit, and particularly for those to come after.

The tourism in Antarctica should represent, therefore, a weapon and must be conceived as an interesting component of a durable development.

That's the reason why it's always useful to talk about these two elements: the tourism and the Antarctic environment. Our present meeting may undoubtfully be regarded as an important moment within this dialogue.

Thank you.

Annex H: List of Working Papers

No.	Title	Original	Agenda item	Submitted by
WP1	Comprehensive Environmental Impact Evaluation for Recovering a Deep Ice Core in Dronning Maud Land, Antarctica	English	(CEP) 4b	Germany
WP2	Exchange of Information on the Application of Articles 3 and 8 as well as Annex I of the Protocol	English	(CEP) 4a	Germany
WP3	Antarctic Protected Areas System: Revised Management Plans for Specially Protected Area No. 14 Lynch Island, South Orkney Islands and for Specially Protected Area No. 19 Lagotellerie Island, Marguerite Bay, Graham Land	English	(CEP) 4g	The United Kingdom
WP4	Historic Sites and Monuments Sailing Vessel Wreckage, South-West Coast of Elephant Island, South Shetland Islands	English	(CEP) 4g	The United Kingdom
WP5	Revised Working Paper on An Assessment opf Enviromental Emergencies Arising from Activities in Antarctica	English	(CEP) 7	COMNAP
WP6	Diseases of Antarctic Wildlife	English	(CEP) 4d	Australia
WP7	Antarctic Protected Areas System: Revised Management Plan for Clark Peninsula, Site of Special Scientific Interest 17	English	(CEP) 4g	Australia
WP8	Extension of Expiry Dates for Management Plans for Sites of Special Scientific Interest No 25 (Marine Plain) and No 16 (North-Eastern Bailey Peninsula)	English	(CEP) 4g	Australia
WP9	Management Plan for Sites of Special Scientific Interest (SSSI) No. 8	English	(CEP) 4g	Poland
WP10	Management Plan for Sites of Special Scientific Interest (SSSI) No. 34	English	(CEP) 4g	Poland
WP11	Report on the Open Ended Intersessional Contact Group on Protected Areas / Terms of Reference (a) - Development of Guidelines for Protected Areas Under Annex V of the Environmental Protocol	English	(CEP) 4g	New Zealand
WP12	Report on the Open Ended Intersessional Contact Group on Protected Areas / Terms of Reference (b) - Advice on Management Plans	English	(CEP) 4g	New Zealand
WP13	Report on the Open Ended Intersessional Contact Group on Protected Areas / Terms of Reference (c) - Consideration of the Need for Further Elaboration of an Antarctic Conservation Strategy	English	(CEP) 4g	New Zealand
WP14	Antarctic Protected Areas System: Revised Management Plan for Site of Special Scientific Interest No. 22	English	(CEP) 4g	Japan
WP15	Update on Proposal for a Balleny Islands Specially Protected Area	English	(CEP) 4g	New Zealand
WP16	Systematic Environmental-Geographic Framework for Protected Areas Under Annex V of the Environmental Protocol	English	(CEP) 4g	New Zealand
WP17	Considerations about the Protection of Native Antarctic Flora and Fauna (Article 3 of Annex II to the Madrid Protocol)	English,Spanish	(CEP) 4d	Argentina
WP18	Specially Protected Species	English	(CEP) 4d	SCAR

No.	Title	Submitted by	Agenda Item	Original
WP19	Antarctic Meteorites	English	(CEP) 4g	SCAR
WP20	Wildlife Diseases	English	(CEP) 4d	SCAR, COMNAP
WP21	DRAFT Management Plan for Specially Protected Area (SPA) No. 20 New College Valley, Cape Bird, Ross Island	English	(CEP) 4g	New Zealand
WP22	Recent Monitoring and EIA Initiatives	English	(CEP) 4c, 5	COMNAP& SCAR
WP23	Extension of Expiry Date for Designation of Site of Scientific Interest No. 24, Summit of Mt Melbourne, North Victoria Land	English	(CEP) 4g	New Zealand
WP24	Report of the Contact Group of the Committee for Environmental Protection to Consider the Draft Comprehensive Environmental Evaluation for Recovering a Deep Ice Core in Dronning Maud Land, Antarctica	English	(CEP) 4b	New Zealand
WP25	Extension of Expiry Dates for Sites of Special Scientific Interest.	English	(CEP) 4g	The United Kingdom

Annex I: List of Information Papers

No.	Title	Submitted by	Agenda Item	Original
IP1	Annual Report of the Federal Republic of Germany pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Germany	(CEP) 4a	English
IP2	The Tourism and the Antarctic Environment, two Components of the modern Civilization	Romania	(CEP) 4a	English
IP3	Annual Report under the Protocol on Environmental Protection to the Antarctic Treaty	Sweden	(CEP) 4a	English
IP4	Inventory of Location of Past Scientific Activities of Germany in Antarctica - ongoing studies -	Germany	(CEP) 4e	English
IP5	Report from the International Hydrographic Organization	IHO	(CEP) 4f	English
IP6	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	South Africa	(CEP) 4a	English
IP7	Implementation of the Protocol on Environmental Protection to the Antarctic Treaty	The United Kingdom	(CEP) 4a	English
IP8	Deception Island - Future Management	Argentina, Chile, Norway, Spain and the UK	(CEP) 4g	English
IP9	Annual Report under the Protocol on Environmental Protection to the Antarctic Treaty	Japan	(CEP) 4a	English
IP10	Antarctic Strategic Environmental Assessment: Application to the Growing Antarctic Tourism Industry	ASOC	(CEP) 4c	English
IP11	An Assessment of Environmental Emergencies Arising from Activities in Antarctica	IAATO	(CEP) 7	English
IP12	Annual Report 1999	Norway	(CEP) 4a	English
IP13	Environmental Radioactivity and Biomonitoring	SCAR	(CEP) 5	English
IP14	Scoping Study for a State of the Antarctic Environment Report (SAER)	SCAR	(CEP) 6	English
IP15	ISO 14001 Environmental Management System The New Zealand Antarctic Institute Experience	New Zealand	(CEP) 4a	English
IP16	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty, Uruguay	Uruguay	(CEP) 4a	Spanish
IP17	Waste Disposal Sites on Land and Work Sites cleaning at E.C.A.R.E., pursuant to Annex III, Article 1, Paragraph 5 of the Protocol on Environmental Protection to the Antarctic Treaty	Uruguay	(CEP) 4e	Spanish
IP18	Antarctic Stratigraphic Drilling East of Cape Roberts in Southwest Ross Sea, Antarctica	New Zealand	(CEP) 4c	English
IP19	Ross Sea Region State of the Environment Report An Update on Progress	New Zealand	(CEP) 6	English
IP20	1999/2000 Southern Ocean Expedition	ASOC	(CEP) 4c	English
IP21	Report of the Antarctic and Southern Ocean Coalition	ASOC	(CEP) 4a	English
IP22	An Evaluation of Progress Towards Implementation of the Madrid Protocol	ASOC	(CEP) 4a	English
IP23	Chinese Antarctic Environmental Report - 1999/2000	China	(CEP) 4a	English
IP24	A Cybercartographic Atlas of Antarctica	Canada	(CEP) 4a	English
IP25	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Russian Federation	(CEP) 4a	English
IP26	Fauna Inventory of the Site of Special Scientific Interest 7 "Haswell Island" (Mirny station area)	Russian Federation	(CEP)4d	Russian

No.	Title	Submitted by	Agenda Item	Original
IP27	Monitoring of the radiation conditions in the areas of Russian Antarctic stations	Russian Federation	(CEP)5	Russian
IP28	Monitoring of chemical environmental parameters in the areas of Russian Antarctic stations	Russian Federation	(CEP)5	Russian
IP29	Environmental protection activities at the Russian Antarctic station Bellingshausen	Russian Federation	(CEP)4e	Russian
IP30	Environmental protection activities at the Russian Antarctic station Molodezhnaya	Russian Federation	(CEP)4e	Russian
IP31	Environmental protection activities at the Russian Antarctic station Progress in 1999-2000	Russian Federation	(CEP)4e	Russian
IP32	Report of the International Association of Antarctica Tour Operators	IAATO	(CEP)4a	English
IP33	Overview of Antarctic Tourism	IAATO	(CEP)4a	English
IP34	Implementación del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente por parte del Programa Antártico Argentino. Período 1999-2000.	Argentina	(CEP)4a	Spanish
IP35	Implementation of the Protocol on Environmental Protection to the Antarctic Treaty	New Zealand	(CEP)4a	English
IP36	Report of the Republic of Bulgaria pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Bulgaria	(CEP)4a	English
IP37	Advancement in Peru's Commitments Undertaken pursuant to Resolution 4 (ATCM XXIII) on the Treatment of the following subject: Co-operation between the Parties in accordance with Article 6 of the Protocol to the Antarctic Treaty on Environmental Protection	Peru	(CEP)4a	Spanish
IP38	Annual Report Pursuant to the Enviromental Protocol to the Antarctic Treaty	Finland	(CEP)4a	English
IP39	Impacts of Acoustic Techniques in the Marine Environment	SCAR	(CEP)4c	English
IP40	Report of the CEP Observer to CCAMLR XVIII and SC-CAMLR XVIII 25 October to 5 November 1999	Australia	(CEP)4a	English
IP41	On the adherence to the Protocol on Environmental Protection to the Antarctic Treaty by Ukraine	Ukraine	(CEP)4a	English
IP42	Impacts of Accoustic Techniques in the Marine Environment	SCAR	(CEP)4a	English
IP43	The Report on an Ecological at the Ukrainian Antarctic Station Akademik Vernadsky, 1996-2000	Ukraine	(CEP)4a	English

Annex J: List of Participants

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Annex K: National Contact Points

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Annex L: Preliminary Agenda for ATCM XXIV

(Reproduced from Annex (O) of the Final Report of ATCM XXIII, Lima)

1. Opening of the Meeting
2. Election of Officers
3. Adoption of the Agenda
4. Operation of the Antarctic Treaty System
5. Operation of the Antarctic Treaty System: Reports
6. Report of the Committee for Environmental Protection
7. Compliance with the Protocol on Environmental Protection
8. Co-operation of Parties with respect to Article 6 of the Protocol
9. Emergency Response and Contingency Planning
10. The question of Liability as referred to in Article 16 of the Protocol
11. Safety of Operations in Antarctica
12. Relevance of Developments in the Arctic and the Antarctic
13. Tourism and Non-Governmental Activities in the Antarctic Treaty Area
14. Inspections under the Antarctic Treaty
15. Science Issues, Particularly Scientific Co-operation and Facilitation
16. Operational Issues
17. Education Issues
18. Exchange of Information
19. Preparations of the XXIV Consultative Meeting
20. Other Business
21. Adoption of the Report
22. Closing of the Meeting

Annex M: Provisional Agenda for CEP IV

Item 1: Opening of the meeting

Item 2: Adoption of the Agenda

Item 3: Operation of the CEP

Item 4: Compliance with the Protocol on Environmental Protection

- 4a) General matters
- 4b) Consideration of Draft CEEs forwarded to the CEP in accordance with paragraph 4 of Article 3 of Annex I of the Protocol
- 4c) Other matters covered by Annex I (Environmental Impact ssessments)
- 4d) Matters covered by Annex II (Conservation of Antarctic Flora and Fauna)
- 4e) Matters covered by Annex III (Waste Disposal and Waste Management)
- 4f) Matters covered by Annex IV (Prevention of Marine Pollution)
- 4g) Matters covered by Annex V (Area Protection and Management)

Item 5: Environmental Monitoring

Item 6: State of the Antarctic Environment

Item 7: Emergency Response and Contingency Planning

Item 8: Data and Exchange of Information

- 8a) General matters
- 8b) Co-operation with other organisations in accordance with Article 11 of the Protocol

Item 9: Election of Officers

Item 10: Preparation for CEP IV

Item 11: Adoption of the Report

Item 12: Closing of the Meeting

ACRONYMS AND ABBREVIATIONS

ASOC	Antarctic and Southern Ocean Coalition
ASMA	Antarctic Specialty Managed Area
ASPA	Antarctic Specialty Protected Area
ATCM	Antarctic Treaty Consultative Meeting
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of the Antarctic Seals
CDS	Catch Documentation Scheme
CEE	Comprehensive Environmental Evaluation
CEMP	CCAMLR Ecosystem Monitoring Programme
CEP	Committee for Environmental Protection
COMNAP	Council of Managers of National Antarctic Programmes
EHSMS	Environmental, Health and Safety Management System
EIA	Environmental Impact Assessment
HSM	Historic Sites and Monuments
IAATO	International Association of Antarctic Tour Operators
IEE	Initial Environmental Evaluation
IHO	International Hydrographic Organization
IMO	International Marine Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IUCN	World Conservation Union
IUU	Illegal, Unregulated and Unreported (fishing)
MARPOL	International Convention for the Prevention of Pollution from Ships
NSF	National Science Foundation
SATCM	Antarctic Treaty Special Consultative Meeting
SCALOP	Standing Committee on Antarctic Logistic and Operations
SCAR	Scientific Committee on Antarctic Research
SC-CAMLR	Scientific Committee of CAMLR
SEA	Strategic Environmental Assessment
SPA	Specially Protected Area
SSSI	Site of Special Scientific Interest
UNEP	United Nations Environment Programme
WG-EMM	Working Group on Ecosystem Monitoring and Management (CCAMLR)
WMO	World Meteorological Organization