Final Report of the Twenty-ninth Antarctic Treaty Consultative Meeting

ANTARCTIC TREATY
CONSULTATIVE MEETING

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Edinburgh, United Kingdom
12 – 23 June 2006

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ACRONYMS AND ABBREVIATIONS

ACAP	Agreement on the Conservation of Albatrosses and Petrels
ASOC	Antarctic and Southern Ocean Coalition
ASMA	Antarctic Specially Managed Area
ASPA	Antarctic Specially Protected Area
ATS	Antarctic Treaty System or Antarctic Treaty Secretariat
ATCM	Antarctic Treaty Consultative Meeting
ATCP	Antarctic Treaty Consultative Party
CAML	Census of Antarctic Marine Life
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources and/or Commission for the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CEE	Comprehensive Environmental Evaluation
CEP	Committee for Environmental Protection
COMNAP	Council of Managers of National Antarctic Programmes
EIA	Environmental Impact Assessment
HCA	Hydrographic Committee on Antarctica
HSM	Historic Site and Monument
IAATO	International Association of Antarctica Tour Operators
ICG	Intersessional Contact Group
ICSU	International Council for Science
IEE	Initial Environmental Evaluation
IHO	International Hydrographic Organization
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission.
IP	Information Paper
IPY	International Polar Year
IPY-IPO	IPY Programme Office
IUCN	International Union for Conservation of Nature and Natural Resources – The World Conservation Union
RFMO	Regional Fishery Management Organisation
SATCM	Special Antarctic Treaty Consultative Meeting
SCAR	Scientific Committee on Antarctic Research
SCALOP	Standing Committee for Antarctic Logistics and Operations
SC-CCAMLR	Scientific Committee of CCAMLR
SPA	Specially Protected Area
SSSI	Site of Special Scientific Interest
UNEP	United Nations Environment Programme
WG	Working Group
WMO	World Meteorological Organization
WP	Working Paper
WTO	World Tourism Organization
WWF	Worldwide Fund for Nature

PART I

FINAL REPORT

Final Report of the Twenty-ninth Antarctic Treaty Consultative Meeting

Edinburgh, United Kingdom, 12-23 June 2006

(1) Pursuant to Article IX of the Antarctic Treaty, Representatives of the 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, Ukraine, the United Kingdom of Great Britain and Northern Ireland, the United States of America and Uruguay) met in Edinburgh from 12 to 23 June 2006, for the purpose of exchanging information, holding consultations, and considering and recommending to their Governments measures in furtherance of the principles and objectives of the Treaty.

(2) The Meeting was also attended by Delegations from the following Contracting Parties to the Antarctic Treaty which are not Consultative Parties: Austria, Canada, the Czech Republic, Estonia, Greece, Romania and Switzerland. A delegation from Malaysia was present by invitation of ATCM XXVIII to observe the Meeting. A delegation from Belarus was present from 19 June 2006 to observe the Meeting by invitation of ATCM XXIX.

(3) In accordance with Rules 2 and 31 of the Rules of Procedure, Observers from the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), the Scientific Committee on Antarctic Research (SCAR), and the Council of Managers of National Antarctic Programmes (COMNAP) attended the Meeting.

(4) In accordance with Rule 39 of the Rules of Procedure, Experts from the following International Organizations and Non-Governmental Organizations were invited to attend the Meeting: the interim secretariat of the Agreement on the Conservation of Albatrosses and Petrels (ACAP), the Antarctic and Southern Ocean Coalition (ASOC), the International Association of Antarctica Tour Operators (IAATO), the International Hydrographic Organization (IHO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission (IOC), the International Programme Office for the International Polar Year (IPY-IPO), the International Union for the Conservation of Nature (IUCN), the World Tourism Organization (WTO), the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

(5) The Host Country fulfilled its information requirements towards the Contracting Parties, Observers and Experts through Secretariat Circular Notes, letters and a website, which included both public and restricted areas.

Item 1: Opening of the Meeting

(6) In accordance with Rules 5 and 6 of the Rules of Procedure, Dr. Mike Richardson, Head of the United Kingdom Delegation, opened the Meeting and proposed Sir Michael Wood, KCMG as Chair of ATCM XXIX. The proposal was accepted. Sir Michael Wood made an opening statement (Annex D, page 257 of this Report).

(7) The Chair recalled the loss of life in the field since the last ATCM, in particular the tragedies on King George Island and nearby on the Antarctic Peninsula; he also recalled the passing of Mr. Tore Gjelsvik of Norway and Dr John Heap of the United Kingdom, two leading figures of the Antarctic Treaty System. The Meeting observed a minute's silence.

(8) Opening addresses were given by Her Royal Highness, the Princess Royal, and Lord Triesman, Parliamentary Under-Secretary of State at the United Kingdom's Foreign and Commonwealth Office.

(9) Her Royal Highness expressed her delight at having the opportunity to welcome delegates to Edinburgh, and pointed out how appropriate the venue was, given the recent celebrations of the centenary of the Scottish National Expedition to Antarctica. The Antarctic Treaty was a model for international dialogue and collaboration that could usefully be used more widely. She stressed the importance of preserving the heritage of Antarctic exploration and honouring the fortitude and courage of the early explorers, and highlighted the work of the United Kingdom and New Zealand Heritage Trusts. She commended the work of the Antarctic Treaty System in protecting and preserving the continent. Her Royal Highness looked forward to the International Polar Year 2007 - 2008, both as a new commitment to scientific endeavour and as a commemoration of what went before, particularly the International Geophysical Year which was a major trigger for the negotiations of the Antarctic Treaty. Her Royal Highness' speech is at Annex D (page 259).

(10) Lord Triesman pointed out that the United Kingdom last hosted an ATCM in 1977 and was honoured and privileged to be doing so again. He highlighted the United Kingdom's long history of exploration and scientific endeavour in Antarctica and the activities of the British Antarctic Survey, which had contributed greatly to the success of international science in Antarctica. Lord Triesman stressed that climate change continued to be the most pressing global environmental priority and that the polar regions provided a barometer for such change. He emphasised the importance that the United Kingdom attached to the International Polar Year and expressed the hope that the Antarctic Treaty System would seek opportunities to work collaboratively with the Arctic Council. He highlighted the important work being carried out by the Antarctic Treaty System with regard to Antarctic tourism, but posed the question

whether it was sensible to allow increasingly larger cruise ships access to Antarctic waters. Lord Triesman's speech is at Annex D (page 261).

(11) The Chair reported that Belarus had indicated that it intended to accede to the Antarctic Treaty and had asked to send a member of its National Academy of Sciences to the Meeting. The Parties agreed that Belarus should be invited "to observe" ATCM XXIX, on the understanding that it intends to accede to the Antarctic Treaty between now and ATCM XXX to be held in New Delhi, and that the invitation extends to ATCM XXIX only.

Item 2: Election of Officers and Creation of Working Groups

(12) Dr Rasik Ravindra, Head of the Delegation of India (host country of ATCM XXX) was elected Vice-Chair. In accordance with Rule 7 of the Rules of Procedure, Mr. Jan Huber, Executive Secretary of the Antarctic Treaty Secretariat, acted as Secretary to the Meeting. Mr Paul Davies, head of the Host Country Secretariat, acted as Deputy Secretary.

(13) Three Working Groups were established:

Working Group on Legal and Institutional Affairs;
Working Group on Tourism and non-Governmental Activities;
Working Group on Operational Matters.

(14) The following Chairs of the Working Groups were elected:

Legal and Institutional Working Group: Professor Olav Orheim of Norway;
Tourism and non-Governmental Activities Working Group:
Mr. Michel Trinquier of France;
Operational Matters Working Group: Dr. José Retamales of Chile.

Item 3: Adoption of the Agenda and Allocation of Items

(15) The following Agenda was adopted:

1. Opening of the Meeting.
2. Election of Officers and creation of Working Groups.
3. Adoption of the Agenda and allocation of items.
4. Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts.
5. Operation of the Antarctic Treaty System: General matters.
6. Operation of the Antarctic Treaty System: Review of the Secretariat's situation.
7. Report of the Committee for Environmental Protection.
8. Liability: Implementation of Decision 1 (2005).

9. Safety and Operations in Antarctica.
10. Relevance of Developments in the Arctic and in the Antarctic.
11. The International Polar Year 2007-2008.
12. Tourism and non-Governmental Activities in the Antarctic Treaty Area.
13. Inspections under the Antarctic Treaty and the Environmental Protocol.
14. Science Issues, particularly scientific co-operation and facilitation.
15. Operational issues.
16. Education issues.
17. Exchange of Information.
18. Biological Prospecting in Antarctica.
19. Preparation of the XXX Meeting.
20. Adoption of the Final Report.

(16) The Meeting adopted the following allocation of agenda items:

- Plenary: Items 1, 2, 3, 4, 7, 19 and 20
- Legal and Institutional Working Group: Items 5, 6, 8 and 18
- Tourism and non-Governmental Activities Working Group: Item 12
- Operational Matters Working Group: Items 9,10,11,13,14,15,16 and 17

The Meeting also decided to allocate draft instruments arising out of the work of the Committee for Environmental Protection to the Legal and Institutional Working Group for consideration of their legal and institutional aspects. The Meeting further decided to discuss agenda item 11, together with elements of agenda item 10, at a special plenary session on 19 June 2006 to discuss the International Polar Year.

Item 4: Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts

(17) Pursuant to Recommendation XIII-2, the Meeting received reports from:

- The United States Government as Depositary of the Antarctic Treaty;
- The Australian Government as Depositary of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR);
- The United Kingdom Government as Depositary of the Convention for the Conservation of Antarctic Seals (CCAS);
- The Australian Government as Depositary of the Agreement on the Conservation of Albatrosses and Petrels (ACAP);
- Sweden, as the Treaty Parties' Representative at the United Nations General Assembly;
- The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR);
- The Scientific Committee on Antarctic Research (SCAR);
- The Council of Managers of National Antarctic Programs (COMNAP).

These reports are reproduced at Annex F.

(18) In relation to Article III-2 of the Antarctic Treaty, the Meeting also received reports from:

- The Antarctic and Southern Ocean Coalition (ASOC);
- The International Association of Antarctica Tour Operators (IAATO);
- The International Hydrographical Organization (IHO);
- The International Union for the Conservation of Nature (IUCN).

These reports are reproduced at Annex G.

(19) The United States, in its capacity as Depositary, reported on the status of the Antarctic Treaty and the Protocol on Environmental Protection. In the previous year, no new countries had acceded to the Treaty or the Protocol (see Annex F, page 327). One Delegation noted that a number of Parties to the Treaty had not yet become party to the Environmental Protocol. It hoped that they would give consideration at this meeting or subsequently to becoming party to the Protocol.

(20) Australia, in its capacity as Depositary for CCAMLR, reported that since ATCM XXVIII, the Cook Islands had acceded to the Convention (see Annex F, page 339).

(21) The United Kingdom, as Depositary of CCAS, was grateful that Parties had submitted their reports on time and requested that they continue to do so (see Annex F, page 343).

(22) In its capacity as the Depositary for ACAP, Australia reported that since ATCM XXVIII Chile, France and Peru had become parties to the Agreement (see Annex F, page 341).

(23) Sweden reported that, at the request of ATCM XXVIII, they had delivered a statement on behalf of the Treaty Parties to the United Nations General Assembly debate on the Question of Antarctica in November 2005 (see Annex F, page 347).

(24) The Executive Secretary of CCAMLR introduced its report (see Annex F, page 349), and emphasized the need for further dialogue and consistency of standards for the protection of the environment by all Parties.

(25) The President of SCAR introduced its report (see Annex F, page 363) and emphasised the fundamental importance of scientific endeavour to the Antarctic Treaty. He also reported that Portugal and Denmark had applied to become members of SCAR.

(26) The representative of COMNAP drew attention to the following five aspects of its report (see Annex F, page 397): environmental monitoring; environmental protection; safety; international co-operation; exchange of information.

(27) The representative of the IHO introduced its report (see Annex G, page 471), and informed the Meeting of the first World Hydrology Day, to take place on 21 June 2006. He also drew the Parties' attention to the recommendations at the end of its report, highlighting in particular the priority shortlist of surveys of key marine corridors, which he hoped would receive extra attention during the IPY.

(28) The Meeting acknowledged the increasing demand for hydrographic INT charts and the progress made so far made in their production. It welcomed the procedure established for the collection and rendering of Hydrographic Data approved by the Hydrographic Committee for Antarctica (HCA), and the short-list of High Priority Surveys identified by the HCA. The Meeting further invited the IHO to continue efforts to increase the coverage of hydrographic information in Antarctica, especially in main passages and ports and where there are vulnerable or protected marine areas, and urged greater involvement in the work of the HCA by all Consultative Parties.

(29) The representative of IAATO introduced its report 2005-2006 (see Annex G, page 447). Membership has risen to 80 (up by five since the previous year) and IAATO has implemented a number of measures including improved ship scheduling, data collection and operating procedures to minimise environmental impact. IAATO will continue to cooperate with all groups and invited representatives to attend the next annual meeting in Hobart in June 2007. It was underlined that statistics on tourism could be misinterpreted; care was needed to avoid false impressions. Although tourism was increasing, in IAATO's view it was well-managed with a good environmental impact assessment system in place.

(30) The representative of ASOC introduced its report (see Annex G, page 437). She emphasized the need for substantive discussions over tourism, marine protected areas and environmental impact assessments. ASOC had participated in the stimulating CEP workshop and looked forward to concrete discussions about limiting the human footprint in Antarctica, sharing of scientific logistics, incorporating climate change into long-term strategies and developing of marine protected areas. ASOC stressed the urgent need to have substantive discussions on the scale and spread of commercial tourism, land-based tourism and a legally-based regulatory framework for tourism activities. ASOC noted that in view of the boom in infrastructure development in Antarctica, cumulative impacts needed to be accounted for more explicitly in environmental impact assessments. New scientific information, such as in the case of the connectivity of sub-glacial lakes, should be taken into account before proposed activities actually commence.

Item 5: Operation of the Antarctic Treaty System: General Matters

(31) The Meeting decided to send a Message to stations in the Antarctic on Mid-Winter's Day (Southern Hemisphere) (Annex J, page 503).

CCAMLR in the Antarctic Treaty System

(32) New Zealand introduced WP 14 *CCAMLR in the Antarctic Treaty System* proposing stronger links between the ATCM and CCAMLR. New Zealand acknowledged that CCAMLR was a separate decision-making body with its own specific mandate but observed that it was not independent of the Consultative Parties. New Zealand took the view that the "special obligations" of the Consultative Parties, recognised in Article V of the Convention, required Consultative Parties to provide comment to

the Commission on matters related to the protection of the Antarctic environment and matters having wider implications for the Antarctic Treaty System.

(33) A number of delegations thanked New Zealand for its paper, agreeing in principle that there needed to be close synergy and cooperation between CCAMLR and the ATCM, and proposed various amendments to the draft resolution proposed by New Zealand, particularly to avoid any impression that CCAMLR was subservient to the ATCM. Some delegations were also in agreement that the composition of delegations to ATCMs and meetings of CCAMLR should reflect adequate expertise of the Antarctic Treaty System, although others pointed out that it was for the Parties themselves to determine the composition of their delegations.

(34) The Meeting recalled that acceding states to CCAMLR are bound by the Convention to respect the principles and purposes of the Antarctic Treaty. Notwithstanding this, some delegations noted that there were acceding states to CCAMLR which were not Contracting Parties to the Antarctic Treaty and that this had contributed to a degree of asymmetry between CCAMLR and the ATCM. Many delegations considered that it would be useful for such states to accede to the Antarctic Treaty so ensuring a greater degree of consistency across the Antarctic Treaty System. Other delegations noted that since such states were bound to respect the principles and purposes of the Antarctic Treaty, they did not, to that end, in need to accede to it. Resolution 1 (2006) on CCAMLR in the Antarctic Treaty System was adopted.

(35) The Meeting received with appreciation the information from China that it was in the process of acceding to CCAMLR, and noted the importance of Consultative Parties conducting or planning to conduct harvesting in the area of CCAMLR to accede to the Convention and seek subsequent membership of its Commission.

(36) It was suggested that the New Zealand proposal be extended to consider the effectiveness of the relationship between organisations across the entire ATS. A number of countries expressed reservations about committing to such an initiative without further information. The IPY might provide a platform for an initiative to improve cooperation further.

The Enquiry Procedure of Article 18 of the Environment Protocol

(37) Chile presented WP 43 *The Enquiry Procedure of Article 18*, which discussed the creation of a procedure for dealing with disputes under Article 3 of the Madrid Protocol. The Meeting congratulated Chile for this comprehensive analysis. It recalled the requirements in this respect recorded in the Final Act of the 1991 Madrid SATCM. It further noted that the Chilean Paper would be useful in certain situations that potentially might arise from the Liability Annex. However, for the present, there seemed to be no pressing need to develop the Enquiry Procedure further.

Document Formatting Guidelines

(38) The Secretariat introduced SP 2 rev. 1 *Documents for ATCM XXIX and CEP IX: Formatting Guidelines*. The Meeting thanked the Secretariat for its work and requested

that the document be converted into a manual to be available electronically. The Meeting also noted that papers were on occasion submitted covering more than one agenda item. It was agreed that delegations should be encouraged to avoid this.

Review of the Status of Recommendations and Measures

(39) The Meeting discussed the review of the status of Recommendations (prior to 1995) and Measures (1995 onwards), focusing in particular on SP 5 *Legal status of the ATCM measures on protected areas*, presented by the Executive Secretary. It determined that the primary focus of the exercise, for the time being, should be on Recommendations and Measures related to area protection and management, taking into account Annex V to the Environmental Protocol. The Meeting expressed its desire to consider whether a resolution or decision might be adopted at ATCM XXX listing certain Recommendations and Measures that are not "current" (appropriate terminology to be further considered) and therefore require no further action by the Parties. Another list might specify all Recommendations and Measures regarding the operation of the system for area protection and management that are "current" and therefore require implementation. This would be particularly helpful for new Parties.

(40) To facilitate its work in this regard, the Meeting requested that the US chair an open-ended inter-sessional email contact group to perform the following tasks, where feasible: (i) review in detail all Recommendations and Measures related to area protection and management; (ii) propose which Recommendations and Measures would be appropriate for citation in a resolution or decision on this subject; (iii) draft a proposed resolution or decision; and (iv) prepare a working paper on the subject for consideration by ATCM XXX. The Meeting requested the Secretariat to assist the contact group in performing the above tasks, particularly with respect to assembling appropriate documentation, as requested.

(41) The Meeting underscored that the purpose of the exercise was to clarify the status of Recommendations and Measures relating to area protection and management, and not to alter the respective legal positions of the Parties regarding the Protocol and relevant Recommendations and Measures.

(42) The Meeting agreed that, after completion of the review of Recommendations and Measures related to area protection and management, the status of past instruments related to all other aspects of environmental protection in the Antarctic Treaty area should be considered. It requested the Secretariat to prepare a paper for the consideration of ATCM XXX, providing a broad overview of all ATCM instruments, categorised by general subject matter, and a detailed analysis of past instruments related to all other aspects of environmental protection, similar in nature to SP 5.

Review of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty

(43) The CEP Chair introduced a non-paper on Annex II prepared by the Secretariat, and indicated that this review was a re-issue of the CEP's advice on Annex II revisions (see Appendix 9 attached to CEP Report VII (2004)). He suggested that a major issue was related to the scope of the Annex, i.e. whether it should address all Antarctic living organisms. If the title was not amended, the review of the revisions might be done fairly rapidly.

(44) Some delegations felt that the advice from the CEP was insufficient to enable the Meeting to arrive at a conclusion on this matter. They believed that further technical and scientific work was needed with regard to the review of Annex II. Other delegations indicated that the advice of the CEP, though being comprehensive, did not reflect a consensus. They reminded the Meeting that the advice of the CEP need not be consensual. Some delegations did not believe that Annex II should be remitted back to the CEP. The Meeting concluded that this issue would need to be discussed at ATCM XXX.

(45) The UK prepared a Working Paper (WP 44 *Review of Annex II of the Environmental Protocol)* to illustrate the consequences of not amending the title of Annex II, as advised by the CEP Chair, to assist consideration by Parties in the inter-sessional period. Australia underscored that any Working Paper on this issue would in no way change the advice of the CEP, which remains on the table. The UK stressed that notwithstanding WP 44 the UK might produce a further Working Paper on the issue of Annex II for ATCM XXX setting out its own position.

Other matters

(46) Chile introduced WP 35 *Draft Elements for the Edinburgh Declaration. International Polar Year 2007-2009*. Delegations thanked Chile for its paper, which was discussed under Item 11 below.

(47) Argentina rejected the incorrect references at this ATCM XXIX made in, *inter alia*, documents, reports, brochures, bibliography, and other publications, concerning the territorial status of the Malvinas (Falkland) Islands, South Georgia and South Sandwich Islands and the surrounding waters, subject to a sovereignty dispute between Argentina and the United Kingdom. This dispute has been recognised by several international organisations. Argentina reaffirmed that those islands and the surrounding waters are an integral part of the Argentine National Territory. Argentina also rejects elements in IP 86 *IAATO Overview of Antarctic Tourism 2005-2006 Antarctic Season* (pp 5, 14, 20) and IP 90 *Report of the International Association of Antarctica Tour Operators 2005-2006* (pp 3, 26) to which paras 47 and 49 of the Final Report of XXVIII ATCM, *mutatis mutandi*, apply.

(48) In response to Argentina the United Kingdom indicated that it had no doubt about its sovereignty over the Falkland Islands, South Georgia and the South Sandwich Islands and their surrounding maritime areas and, with respect to Argentina's reference to

paras 47 and 49 of last year's Final Report, the United Kingdom recalled its statement in paragraph 48 of that report.

(49) Argentina rejected the statements by the UK and reiterated its well-known legal position. At the same time, while recalling what was stated at previous meetings, it suggested that, in order to make discussions easier, any reference to areas outside the Antarctic Treaty area should be avoided.

Item 6: Operation of the Antarctic Treaty System: Situation of the Secretariat

Reports 2004/5 and 2005/6

(50) The Executive Secretary presented SP 6 containing the revised Antarctic Treaty Secretariat Financial Report for 2004/05. Since the last ATCM external auditors had been appointed and the Report audited.

(51) The Executive Secretary introduced SP 3 rev. 1 containing the Secretariat Report for 2005/6. Following comments from last year, the format of the Report had been altered to cover four main areas of activity: Support for ATCM/CEP; Information Exchange; Documentation; and Public Information.

(52) The Meeting welcomed the valuable work that had been undertaken by the Secretariat. This included invaluable assistance to the host countries of ATCM XXVIII and XXIX and also to India as host for next year's Consultative Meeting. The Meeting also recognised specific achievements including plans to update the Antarctic Treaty Handbook and to transfer the CEP website to the Secretariat. The Executive Secretary indicated that the staff complement of the Secretariat was now complete. Several delegations acknowledged that, despite this, it would still take some time for all of the functions of the Secretariat to be addressed. Some Parties queried the scale of the representational costs listed in the account. The Executive Secretary noted those concerns and confirmed that he would follow Parties' advice.

(53) Delegations noted that Rule 46 of the Rules of Procedure had been negotiated at length and needed to be fulfilled by the Secretariat. It was necessary for the Executive Secretary to "ensure that all Consultative Parties acknowledge receipt" pursuant to Rule 46 (b). The Meeting urged all Parties to acknowledge receipt of such communications promptly. Some delegations emphasised that adequate time should be provided to consider the matter before communicating a reply to the Secretariat.

(54) A number of delegations stressed the need for increased transparency in the work of the Secretariat in respect of, e.g., budgets and accounting, work programmes, representational costs and foreign travel. With regard to the last, some delegations felt that insufficient details had been included in the Executive Secretary's reports of his attendance at overseas meetings. They requested that, in addition to more informative reports, relevant documents arising from such visits be available to all Parties. In that respect, the Meeting recalled the guidelines agreed at ATCM XXVIII.

(55) Argentina stated that, regarding the situation of the Secretariat staff members, the Declaration of the Argentine Government (see Annex H, page 495) clarifies that the specific contractual regime established by Measure 1 (2003), Decision 2 (2003) and Decision 3 (2003) is applicable to the contractual relations between the Secretariat and its staff members. Argentina stated that therefore there are no divergences between such a regime and Argentine law. This conclusion is the result of a joint analysis with all the relevant areas of the Argentine Administration and the Secretariat. Consequently, as explained by the Executive Secretary, it is not necessary to introduce any amendments to the provisions in force that regulate the contractual relations between the Secretariat and its staff members.

(56) The Meeting expressed deep gratitude to Argentina for supporting the Secretariat in all its forms and for clarifying the legal working status of the Secretariat staff members and requested the Executive Secretary to convey the gratitude of the Meeting to the Argentine Government. The Declaration of the Argentine Government is included at Annex H (page 495).

(57) Sweden raised a question about social security, to ensure that the standard was equivalent to that which other good employers would provide. The Executive Secretary confirmed that the staff regulations were competitive.

(58) The Meeting took note with appreciation of the Secretariat's report on its work for 2005/06.

Programme and Budget 2006/7

(59) The Executive Secretary introduced SP 4 rev 1 containing the draft Programme and Budget for 2006/7. Delegations emphasised the need for the forecast and draft budgets to be identical. There was, however, agreement that staff replacement and terminations funds should be created.

(60) Australia sought clarification on how the budget took account of the risk of shortfalls in the assessed voluntary contributions. The Executive Secretary said that these could be covered by the existing surplus. Some delegations said they were not prepared to allow surpluses arising from their contributions to be used to make up for shortfalls arising from non-payment by other Parties. Some delegations recalled the importance of all Consultative Parties paying their contributions in full and on time. The Meeting noted the serious consequences that would arise from a shortfall in contributions such as reduced effectiveness of the Secretariat and its capacity to support the ATCM. To address this possibility several delegations stressed the need for contingency planning and prioritisation of activities. The Executive Secretary provided an indication of the activities that could be dropped in response to possible shortfalls of $100,000.

(61) Japan asked whether the 7% increase in the 2007/08 budget was accounted for by inflation. The Executive Secretary said it was a combination of the estimated IMF world inflation figure of 2.1% and the domestic Argentine inflation rate of 15%. The

Meeting agreed that office expenses and web and software development should be as originally proposed by the Secretariat. This would lead to a saving of $14,000.

(62) In response to questions about the travel budget, the Executive Secretary explained that most expenditure was in direct support of the ATCM. Over half of this year's budget would be accounted for by the Edinburgh ATCM. The next meeting in New Delhi would also take up significant funds. Some delegations asked for clarification on the projected allocations for 2007/8 travel and representation and made suggestions as to possible areas for savings. The Executive Secretary presented a revised text and data for SP 4 *Draft Work Programme 2006/7*, incorporating the changes requested by the Meeting.

(63) The Secretariat provided revised budgets taking into account all of the above recommendations. One delegation raised questions regarding the surplus accumulating from previous years and the practical application of Rule 6.3 of the Financial Regulations. The Meeting confirmed that it is not the intention of the Meeting to amend Rule 6.3.

(64) The Executive Secretary presented SP 11 *Contributions to the Secretariat 2004/7,* outlining voluntary assessed contributions to the Secretariat over the past two financial years and to date in the present financial year. Brazil, Norway, Peru, Spain and Uruguay stated they were in the process of completing measures to ensure their voluntary assessed contributions were made for this year.

(65) France noted that contributions remained voluntary until Measure 1 (2003) was approved by all the Consultative Parties and exhorted all Parties to approve the Measure as quickly as possible so that the financial uncertainties would be reduced. Spain recalled that the contributions remained voluntary and that it was of the same view as France. Other delegations noted that the contributions were assessed.

(66) The Meeting urged all Parties to approve the Measure as quickly as possible so that financial uncertainties would be removed.

(67) The Meeting approved Decision 1, which contained the Secretariat's Financial Reports on the year 2004/05 and the year 2005/06 and the Programme and Budget for 2006/07, as revised during the Meeting, in Annexes 1, 2 and 3 to Decision 1, respectively.

(68) The Executive Secretary presented SP 12 rev. 1 *Status of the Secretariat Archive of Final Reports*. He explained that the task of collecting the Final Reports of the ATCM had been more difficult than foreseen. The process of digitising and proof-reading electronic texts of final reports was time-consuming. He noted that some language versions were still outstanding and urged delegates to help locate any missing documents. Russia said it was near to completing its search and would be able to send photocopies of the missing Russian documents to the Secretariat by August.

Item 7: Report of the Committee for Environmental Protection

(69) Dr Tony Press, Chair of the CEP IX, introduced the report of CEP IX (Annex E), highlighting the Measures, Decisions and Resolutions that the ATCM should consider. Dr Press noted that the CEP's workload had increased considerably in recent years, and, should this trend continue, it would be difficult to cover the issues in the time allotted.

(70) The Chair of the ATCM congratulated the CEP on their achievements, and noted that they had dealt with an impressive workload in the time allotted. The Meeting then considered the report section by section.

(71) Concerning Item 3 in the CEP report (Strategic Discussions on the Future of the CEP), the UK welcomed this important initiative, requested that the ATCM emphasise its importance, and asked that the ATCM be kept informed of progress.

(72) Commenting on paragraphs 36 and 39 of the CEP report, ASOC noted the strong support by many Members of the CEP for the concepts set out in the ASOC paper IP 94 *Station Sharing in Antarctica*.

(73) With respect to paragraph 39 of the CEP report, attention was drawn to the reiteration of the CEPs concern about the potential environmental consequences of an excessive concentration of stations in Antarctica. It was noted that these concerns can be addressed, in part, by increased cooperation in Antarctica and that some Parties are making efforts to share their facilities and encourage wider participation in their research programmes. The Meeting recalled Recommendation XV-17 (1989), which sets out the measures that Parties are urged to take when considering the establishment of new stations or facilities, to avoid excessive concentration of such installations. The Meeting also recalled that the Consultative Parties had taken the view that the construction of a station or base in Antarctica was not a pre-condition for attaining Consultative Party status, and reaffirmed this position.

(74) It was noted that in the Edinburgh Antarctic Declaration on the International Polar Year 2007-2008, adopted by the Meeting (see Item 11 below), the Parties were committed to strengthening scientific and logistic cooperation and minimising the environmental impacts of their activities.

(75) With respect to CEP Item 7a (Management Plans), specifically paragraphs 54 to 64 of the CEP report, the Meeting noted that the CEP had been unable to recommend the adoption of a management plan for an Antarctic Specially Managed Area in the Larsemann Hills because one Party was proposing to locate a new station outside the proposed infrastructure zone. Some delegations were concerned about the significant consequences of this late change in the long-running planning process. Disappointment was expressed that the management plan, which was intended to facilitate close cooperation in the area and had been developed through an open consultative process, had to be withdrawn at the final stage to address issues raised by this new station proposal.

(76) On paragraph 206 of the CEP Report, replying to New Zealand's concern about the Environmental Impact Assessments of Indian operations in the Larsemann Hills area, India confirmed that it is working on a Comprehensive Environmental Evaluation (CEE) on this subject and the same would be presented at CEP X.

(77) Germany expressed satisfaction on reaching agreement with Chile in principle on developing an ASMA for Fildes Peninsula and Ardley Island. They will jointly convene – via note verbale – an international working group (paragraph 74 of the CEP Report). Germany expressed the hope that a substantive outcome of the group's work would be presented to the next ATCM. Chile confirmed that it will host a workshop to prepare the input on this issue for discussion at CEP X.

(78) The Meeting adopted Measure 1 (2006) on Antarctic Specially Protected Areas: Designations and Management Plans, and Measure 2 (2006), Antarctic Specially Managed Area: Designation and Management Plan: Admiralty Bay, King George Island (in Annex A, page 51).

(79) Concerning CEP Item 7b (Historic Sites and Monuments), the Meeting adopted Measure 3 (2006) on Antarctic Historic Sites and Monuments: Rocher du Débarquement (in Annex A, page 201).

(80) On CEP Item 7c (Marine Protected Areas), the CCAMLR Observer noted that both the Commission and the CEP recognise that the definition and designation of Antarctic Marine Protected Areas is urgent and needs to be timely. The work should start sooner rather than later and the first step will be the workshop next year. He undertook to convey the positive development between the CEP and SC-CCAMLR to CCAMLR.

(81) The Meeting adopted Resolution 2 (2006) on Site Guidelines for Visitors (in Annex C, page 243).

(82) On CEP Item 8 (Quarantine and non-native species), the United States referred to the useful information reported from the New Zealand workshop on non-native species. It noted that in moving forward on matters related to non-native species, practical considerations and best practices must be taken into account.

(83) The ATCM adopted Decision 2 (2006) on Ballast Water Exchange in the Antarctic Treaty Area and Resolution 3 (2006) on Ballast Water Exchange in the Antarctic Treaty Area (in Annex B, page 237 and Annex C, page 247).

(84) Item 8: Specially Protected Species. The Meeting adopted Resolution 4 (2006) on Conservation of Southern Giant Petrels (in Annex C, page 251).

(85) The Meeting noted that fur seals would continue to receive the comprehensive general protection afforded to all seal species under the Protocol, and that they would not be exposed to any potential threat of commercial exploitation in the future as a result of their delisting as Specially Protected Species. The Meeting also noted the value of CCAMLR implementing its Scheme of International Scientific Observation in the krill fishery in order to provide the necessary data for the monitoring of the fishery's

impacts on fur seals. Norway thanked SCAR for their clear advice on fur seals and commented on the importance of taking account of expert advice.

(86) The Meeting adopted Measure 4 (2006) on Specially Protected Species: Fur Seals (in Annex A, page 203).

(87) On CEP Item 14 (Cooperation with Other Organisations), New Zealand wished to record its pleasure at the positive progress on cooperation between the CEP and the Scientific Committee of CCAMLR.

(88) The Meeting decided to urge CCAMLR and ACAP to work with the Secretariats of relevant Regional Fisheries Management Organisations, if appropriate, in order to share information and best practice on ways to reduce seabird by-catch. The Meeting took note of paragraph 202 of the CEP report.

(89) On CEP Item 16 (Election of Officers), the ATCM thanked Dr Tony Press for his excellent guidance of the CEP over the last four years. The Chair congratulated the incoming Chair, Dr Neil Gilbert (New Zealand), and Vice-Chair, Dr Tania Brito (Brazil) and wished them well.

Item 8: Liability: Implementation of Decision 1 (2005)

(90) Sweden informed the Meeting that it had recently enacted a Statute so that it could implement Annex VI. It offered to distribute an English version of its law to other Parties by August. Argentina, Australia, Brazil, Chile, China, Finland, France, Germany, New Zealand, Norway, Russia, Spain, the UK, the USA and Uruguay all informed the Meeting that they had started their internal review process. Many delegations stated that they would probably need to pass domestic legislation to implement the Annex. The Meeting concluded that these developments were very encouraging steps towards the approval of Measure 1 (2005).

(91) The USA indicated as Depositary Government that, in order to bring Annex VI into force, each Consultative Party must inform the Depositary in writing, at a minimum, that it has "approved Measure 1 (2005)" (Annex VI to the Protocol on Environmental Protection to the Antarctic Treaty: Liability Arising from Environmental Emergencies). In the absence of receipt of this information from a Consultative Party, the Depositary will not be able to consider that the Consultative Party has provided the requisite notice related to Annex VI. The US also said that it was willing to communicate informally to the Secretariat approval by Parties of Annex VI so that this information could be included on the Secretariat website. Parties were urged to approve Measure 1 (2005).

(92) Sweden gave a presentation on their legislation implementing Annex VI, which formed a platform for discussion. All delegations thanked Sweden for their presentation of the Swedish law and looked forward to receiving an English translation, which would be helpful for their own work on domestic legislation. There was discussion of several legal questions linked to the implementation of Annex VI.

(93) It was agreed that the Swedish presentation and the general exchange of views and information had been very useful. The Meeting urged other delegations to come to New Delhi prepared to present information on their domestic implementation or work in progress, including any problems encountered. The Secretariat was asked to maintain an e-mail address list of Annex VI experts of Parties to the Environmental Protocol to facilitate informal inter-sessional contact on this subject and preparation for further exchanges of information at ATCM XXX.

Item 9: Safety and Operations in Antarctica

(94) France introduced WP 17 *Contingency Planning and Emergency Response*, to provoke discussion on the risks to human safety and to the environment. France noted that, in respect of the competence of Parties to authorise activities in Antarctica, these Parties bear corresponding responsibilities for the security of persons as well as the environment. That should lead them to organise themselves formally through a global approach. France acknowledged the excellent work already undertaken by COMNAP, which should provide its expertise in this process.

(95) New Zealand congratulated France on the paper and agreed that COMNAP already does a great deal of important work in this area. In addition to recording major incidents and accidents, New Zealand also kept a record of 'near misses'.

(96) The United Kingdom also thanked France for its paper. The United Kingdom agreed there was a need for co-ordination and training for emergency response in Antarctica. Increased co-ordination was vital given the number of scientific and tourist vessels now visiting the Antarctic region.

(97) COMNAP explained that it had established an incident and accident database and that safety was already a priority area of its work. It referred the Meeting to its Annual Report (in Annex F, page 397) outlining activities in the areas of accident prevention, particularly the review of fuel handling and storage guidelines (Section 3.7), safety of navigation, particularly its work in supporting the Hydrographic Committee on Antarctica (Section 3.8) and accident, incident and near-miss reporting (Section 3.9). All work is carried out in conjunction with the Antarctic Treaty Secretariat and the CEP. Effort was also focused on anticipating events, given media interest in any apparent dramatic situations. Alert/search and rescue globally was already coordinated by IMO and ICAO but discussions had taken place in Chile in April on improved communication between regional Rescue Co-ordination Centres in Chile, Argentina, South Africa, Australia and New Zealand, e.g. by establishing ships' whereabouts and how they could be called on to help in time of need. Within COMNAP the Standing Committee for Antarctic Logistics and Operations (SCALOP) takes the lead on safety matters. Search and rescue issues would also be discussed at the July 2006 meeting in Hobart and COMNAP plans to establish a new working group to deal with safety issues, replacing the current case-by-case approach.

(98) As in the CEP, the Meeting agreed that COMNAP was best placed to take this work forward. COMNAP agreed to submit a paper on the subject to the ATCM XXX.

(99) The United Kingdom introduced IP 20 *Antarctic Polarview Programme to provide access to satellite observations for improved sea ice navigation*. Polarview is a satellite remote sensing service and part of the European Space Agency (ESA) Global Monitoring for Environment and Security (GMES) services programme. The British Antarctic Survey (BAS) is managing the promotion and delivery of the Antarctic services element of Polarview. Polarview will deliver near real-time sea ice information based on satellite observations direct to users, such as ships sailing in Antarctic waters. The United Kingdom explained that access to this information is currently open and free to all and invited Parties to take advantage of this new service. Further information about Polarview can be found at *www.polarview.org* or, specifically concerning Antarctic operations, from Mr Andrew Fleming at BAS (email: *ahf@bas.ac.uk*).

(100) Japan introduced IP 101 *Selected Highlights of the Japanese Antarctic Research Expedition, 2005-2006*. It expressed gratitude to Norway and Sweden for providing assistance with a medical evacuation from Dome Fuji.

(101) Russia outlined its experience of airdropping cargo to Vostok Station, contained in IP 71 *Measures for ensuring safety of life activity at the inland Antarctic Stations. Experience of airdropping of cargo to the Russian Vostok Station*. In November 2005 it successfully airdropped thirty tons of fuel using parachutes. The activity was environmentally friendly and the snow had proved to be a good receiving surface.

(102) Russia presented IP 72 *Monitoring of pathogenic micro-biota in the Antarctic*, demonstrating the benefits of regular microbiological surveys at stations to determine both the anthropogenic impact on Antarctica and possible pathogenic effects on the environment and man.

(103) Chile was grateful for Russia's work. It noted that the Chilean hospital at Frei base had no evidence of serious human illnesses apart from common colds. The Chilean Antarctic Institute was also carrying out a biomedical project to assess the health of personnel stationed in the Antarctic Peninsula. Chile said it would be interesting to carry out studies at sites where different national delegations worked in close proximity to each other. It noted that all Chilean aircraft departing from Punta Arenas for King George Island were disinfected before leaving.

(104) In also thanking Russia, Argentina thought the work might be presented at COMNAP or SCAR, where the focus should be on potential forms of transmission.

(105) France noted that the Russian paper raised an interesting issue, which had been little discussed to date. It said that the Franco-Italian Concordia base had maintained a micro-biological investigation programme since it had moved to year-round operation. There was a clear need for more information about micro-organisms in the Antarctic environment. France agreed that COMNAP and SCAR should look into the issue more deeply.

(106) Sweden was grateful to Russia for raising an important issue. The spread of diseases by birds was also an important issue to consider, particularly in the context of fears

about Avian Flu. Sweden hoped the issue would be considered by both COMNAP and SCAR, who should report back to a future Treaty meeting.

(107) The United Kingdom also thanked Russia, noting that medical issues were infrequently raised at ATCMs. The United Kingdom had carried out research at Halley Research Station through the British Antarctic Survey Medical Unit. It was encouraged to hear that a number of delegations were working along similar lines. The United Kingdom supported the Argentine proposal that this be dealt with by the COMNAP medical network - MediNet. There would also be read-across to the CEP and SCAR. The United Kingdom recommended that further discussions of the issue take place at ATCM XXX.

(108) SCAR noted that there were a number of related complex issues: human health; the transport of non-native species into Antarctica; non-native species with the ability to attack infrastructure, e.g. fungi on wood; and the impact of human pathogens on native wildlife. Methods of alleviating the outbreak of disease were largely a question of management. Studies on immunity and disease outbreak together with the relationship to diet etc. had already been conducted by SCAR. However, the data were now old and did not take account of latest scientific methods such as genomics. A number of scientific papers were currently under review on these topics and the issues should be discussed by SCAR and COMNAP.

(109) New Zealand agreed that the issues were complex. The CEP led on the disease element but there were a number of other important policy issues that should be tackled in this forum. One such was Avian Flu and particularly the effects of a possible outbreak of the disease in New Zealand on flights to Antarctica. New Zealand was already developing response strategies and would be happy to share information with colleagues in due course.

(110) Argentina clarified that the reason it had proposed that the COMNAP and SCAR medical groups take the issue forward was that they worked closely together and shared data and comprised scientists with experience of these issues.

(111) COMNAP confirmed it was happy to consider the issue at its meeting next month in Hobart and would refer it to both its Medical and Environmental networks.

(112) The Meeting concluded that this was an issue that merited greater attention and study and tasked COMNAP to follow up at its meeting next month and to report back at ATCM XXX.

(113) Norway recalled that ATCM XXVIII had raised with the IMO the issue of the use of heavy fuel oil by ships in Antarctica. It informed the Meeting that Norway had taken the issue forward to the IMO Marine Environment Protection Committee at its last session. The Committee had been supportive of the restriction of the use of heavy fuel oil, but wanted to give the matter further consideration. Norway offered to keep the ATCM informed as this issue is progressed in the IMO.

Item 10: Relevance of Developments in the Arctic and in the Antarctic

(114) No Working Papers were presented under this Agenda item, and IP 62 *The Antarctic and Climate Change* and IP 89 *Plans for an Antarctic Climate Assessment – Trends and Impacts* were taken as read.

Item 11: The International Polar Year 2007-2008

(115) On 19 June the Meeting held a day-long special plenary on the International Polar Year 2007-2008. The day was divided into the following sessions: an open session for scientific presentations, a session on the Arctic approach to the International Polar Year (IPY), and a session for general discussion and the adoption of the Edinburgh Antarctic Declaration on the International Polar Year 2007-2008 (text at Annex I, page 499).

(116) In accordance with Rule 8 of the Rules of Procedures, the Meeting determined that the first session of the day (scientific presentations) should be an open meeting. The Meeting also agreed that this session should be chaired by Professor Rapley, CBE, Director of the British Antarctic Survey.

(117) In the open session, the first speaker was Dr David Carlson, Director of the IPY International Programme Office, who gave an introduction to the IPY and the work of the Office. Dr Cecilie Mauritzen, of the Norwegian Meteorological Institute and co-leader of the European DAMOCLES programme, spoke on Ocean Observing Systems at Polar Latitudes – Challenges in the North and South. Dr Robert Bindschadler, Chief Scientist, Hydrospheric and Biospheric Sciences Laboratory, NASA Goddard Space Flight Center, USA, gave a talk entitled "Ice is Ice, Right?" Dr Jon Watkins of the British Antarctic Survey spoke on Marine Ecosystems in the Southern Ocean.

(118) In the session devoted to the Arctic, Dr Dmitry Chumakov, Executive Secretary of the Russian Chairmanship of the Arctic Council, gave an overview of the Arctic Council's approach to the IPY. The Council had planned the following three multilateral initiatives: the Arctic Human Health Initiative (AHHI) led by the USA; the Co-ordination and Monitoring in the Arctic for Assessment and Research (COMAAR) led by Sweden; and the Joint Atmospheric Climate Observatory in Tiksi led by the Russian Federation. In addition, there was a wide range of national activities planned by Arctic Council Member States.

(119) Norway noted that its two-year chairmanship of the Arctic Council would start in October 2006. The Chairmanship would then pass to Sweden, followed by Denmark. Norway explained that these three countries intend to co-ordinate their programme for the Council for the period 2006-12 and are actively considering a joint secretariat, possibly located in Tromsø, Norway. The three countries intend to focus on sustainable use of natural resources, climate change, and reviewing the Council's structure.

(120) The USA informed the Meeting of its research and educational activities planned for the IPY. Three main themes had been identified: Arctic environmental change; polar ice-sheet stability and dynamics; and life in the cold and dark.

(121) New Zealand stressed the need for a focus on outreach and education, noting that the true scientific legacy of the projects probably would not emerge until several years after the IPY.

(122) Dr Robert Corell, Senior Policy Fellow, American Meteorological Society, gave a presentation on the Arctic Climate Impact Assessment (ACIA), which was set up over a five-year period following the Barrow Declaration of the Arctic Council to provide a scientific base which could lead to a political process on climate change.

(123) In response to questions from the floor, Dr Corell noted it had not been easy to achieve a clear lexicon at the beginning of the process. The Steering Committee had to decide on a commonality of use of language and in mainly judgmental issues this had meant reaching collective agreement on the final wording. Similar processes on the science document gave a high comfort level. The content had been completed in January 2004 and the work of editing took a further eighteen months.

(124) Dr Corell also explained that the scope of the study had been agreed, as with the lead authorship, by seeking the advice of all relevant governments and organisations. There had been over one hundred nominations for lead authorship and there had been a similar process with topics.

(125) The Chair of the Meeting then introduced the draft Edinburgh Antarctic Declaration on the International Polar Year 2007-2008, which would champion the global importance of the polar regions in international fora, focusing on co-operation and outreach.

(126) Chile referred to WP 35 *Draft Elements for the Edinburgh Declaration. International Polar Year 2007-2008*, which included suggestions on outreach from IPY and the SCAR action group on Antarctic research, in particular the workshop to be held in Santiago in 2006 for which the Chilean delegate called for increased participation. He reminded Parties of their commitment to provide access to archival information. He welcomed the strong sense of commitment to international collaboration from Parties apparent from the draft Edinburgh Antarctic Declaration. Future ATCMs should maintain the IPY on their agenda, and discussion of its progress and development should be provided in an overview by the IPY Programme Office. The Secretariat should include data on IPY 2007-2008 in the revised ATS Handbook.

(127) With regard to the historical annex to WP 35, while highlighting its merits, Argentina reiterated its reservations on certain legal and historical elements which it does not share. Argentina also wished to recall that, at the time of the Second Polar Year, there was in fact already one station in Antarctica: Orcadas, which had been established by Argentina in 1904. A century of permanent and uninterrupted presence of Argentina in Antarctica was celebrated two years ago (see ATCM XXVIII IP 86).

(128) Chile apologised for any omissions in the historical annex to WP 35. There was also no reference to the observatory established by Argentina on Año Nuevo Island. It

stressed the importance of Argentina's input and also that of other pioneering countries, including Belgium, which established the first Congress for the Study of Polar Regions that led to the International Polar Commission, and Norway, which attempted to organise a second congress in 1938.

(129) Following a question from Austria on low latitude alpine studies, Professor Rapley (UK) noted that as long ago as 1882, Karl Weyprecht from Austria had stressed a need for unprecedented international co-operation in the IPY. This remained true today. The United Kingdom would like to see ever more co-operation. For example, talks were in hand with Argentina on an exchange of scientists during IPY and the United Kingdom would welcome contact with other countries. Argentina expressed warm appreciation for past co-operation with the United Kingdom and welcomed the present invitation to renew collaboration.

(130) Norway suggested there was a need to return to "big picture" thinking. In the early days of IPYs, decisions were made from the top down. The tendency now was to work from the bottom up. But this meant it was harder to discern the major issues. ATCMs were now mainly about technical issues. He suggested that in arranging work for ATCM XXX, a smaller number of issues should be included for discussion. There were plenty of examples of big science from Antarctica, for example, the discovery of the ozone hole, and the work on ice cores at Vostok Station and the linkage with greenhouse gases. These studies had had a notable effect on world politics. The challenge was now to understand how polar weather effected global warming. More data were needed from IPY. The importance of this work should be reflected at ATCMs.

(131) The United Kingdom welcomed these useful presentations. The scale of the IPY projects was impressive. One of the main aims was to draw public attention to the importance of Antarctica. Outreach was important. The results of IPY needed to be disseminated as widely as possible. The scientific output would take place over twenty-four months; delivery needed to be factored in early. There would need to be synthesis of the scientific results from the IPY. The role of the Antarctic Treaty System in policy-making stemming from such synthesis needed to be clarified and forward planning, perhaps as far ahead as 2012, put in hand. A Special ATCM following a science conference was one possibility. The Meeting needed to consider by 2007 what policy output was required from IPY.

(132) Professor Michael Stoddart (Australia) gave a presentation on IP 24 *The Census of Antarctic Marine Life (CAML) – a SCAR-supported field activity for IPY 2007-2008*. He stressed the importance of CAML as a major international project for the IPY. He acknowledged the contribution of Belgium for the establishment of CAML's Antarctic marine biodiversity information network portal, SCAR-MarBIN (*www.scarmarbin.be*). Up to fifteen ships, including IAATO vessels, would be involved in the project. It was hoped that more ship time would be contributed by interested Parties.

(133) Dr Rhian Salmon (IPY International Programme Office) outlined the public outreach activities planned for the IPY. These activities would be coordinated with individual

country and regional association programmes. The Netherlands recalled the activity of the European Polar Board. Norway suggested that advantage be taken of the next ATCM being held in India to spread the IPY message more widely in Asia. Argentina mentioned that it had held an event in Ushuaia that had promoted the IPY. It also thanked the IPY International Programme Office for its contributions to ECOPOLAR Ushuaia 06. This preparatory activity for the IPY, which was hosted by the Provincial Government in Ushuaia in May 2006, focussed on Chapter III of IPY: outreach, education and communication. ASOC reminded the IPY International Programme Office that environmental and conservation groups should also be targeted in its public outreach activities.

(134) SCAR introduced IP 87 *SCAR's Involvement in the International Polar Year 2007-2009*. 97 proposals of relevance to SCAR had been approved, 77% of which covered the natural sciences; 22% education and outreach; and 1% data management. SCAR noted with appreciation that most of its earlier recommendations had been achieved but highlighted the ongoing need to develop a benchmark series of geological and geophysical maps.

(135) Argentina introduced IP 30 *The Argentine Antarctic Program in the International Polar Year*. Argentina was ready to use its assets and expertise to support other Parties' activities but reminded the Meeting that requests should be submitted well in advance in order to allow sufficient time for programming. Argentina agreed with SCAR on the need for greater mapping efforts. This would provide a sound base for further scientific work. Argentina had worked jointly with Spain to produce new geological maps of certain areas.

(136) The United Kingdom thanked SCAR and Argentina for their papers. It agreed that the IPY provided enormous scientific opportunities and that mapping should be considered no less important than cutting-edge scientific work. The United Kingdom noted the importance of sharing with CAML information about any spare capacity available on research vessels. This could be a theme for discussion at the forthcoming SCAR-COMNAP meetings in Hobart. The United Kingdom would be setting aside some capacity on the *RRS James Clark Ross*. It hoped regular updates on IPY activity would be provided at future ATCMs.

(137) Australia said that a clear mechanism for taking forward IPY projects was needed. The forthcoming COMNAP meeting might allow for greater consideration of projects that will require special international co-ordination mechanisms in order to deliver the required logistical support. Australia noted it had developed informal mechanisms with regard to the provision of ship-time for CAML. It also noted that the mapping exercise referred to by SCAR was an example of a project that could be achieved with a small amount of additional effort by a number of Parties.

(138) COMNAP confirmed that it would be happy to receive information about multinational projects requiring specific co-ordination at its July 2006 meeting.

(139) Sweden shared some of its experience of organising IPY in the Arctic arena, highlighting the link between science and logistics. Many large-scale projects would

be competing for significant resources such as use of ship time. Sweden agreed that the COMNAP meeting offered an excellent opportunity to make progress.

(140) Russia informed the Meeting of the latest developments in its national programme as set out in IP 74 *Research Program of Participation of the Russian Federation in holding the International Polar Year 2007-2008*. Its national programme had eight main priority areas. Most scientific projects were focused on the Arctic but Russia hoped to expand its number of research projects in the Antarctic and enlarge its number of observation points. Russia supported the proposal for discussion of high-priority and large-scale projects at the COMNAP meeting.

(141) Spain and Uruguay also supported co-ordination of projects by COMNAP and greater information sharing at the Hobart meeting. Spain noted that ships of opportunity could assist small projects. Uruguay planned to make capacity available on two ships and this would be discussed further at the forthcoming COMNAP meeting.

(142) The Meeting confirmed support for the Edinburgh Declaration on the International Polar Year 2007-2008 and noted that Parties would conduct further discussion of priority projects for the IPY at the SCAR-COMNAP meetings in Hobart.

(143) The Meeting adopted the Edinburgh Antarctic Declaration on the International Polar Year 2007-2008 and decided that the Declaration should be made public immediately (text at Annex I, page 499).

Item 12: Tourism and Non-Governmental Activities in the Antarctic Treaty Area

(144) The issues discussed under this agenda item were divided into the following broad categories:

- Trends in Tourism
- Site Guidelines for Visitors
- Land-based infrastructure for Tourism in Antarctica
- Strategic Issues
- Accreditation
- Other Issues

Trends in Tourism

(145) IAATO introduced IP 86, *IAATO Overview of Antarctic Tourism: 2005-2006 Antarctic Season*. The Paper gave a broad picture of the tourism industry in Antarctica from the IAATO perspective. IAATO activities were listed and non-IAATO activities were included where possible. The Paper reported an increase in the estimated number of tourists entering the Antarctic Treaty area to 30,877 passengers (landing and cruise only) in 2005/06 (with an additional 1,165 passengers on over-flights). In 2004/05 28,739 landed and cruise only passengers entered the Antarctic Treaty area, with an additional 2,030 on over-fights. IAATO reported no increase in the diversification of activities.

(146) Many Parties thanked IAATO for a comprehensive report, which provided a basis for discussion of important issues. Some delegations raised concerns about the flagging of vessels to non-Treaty Parties and the contingency planning for search and rescue operations, particularly for large vessels. Other delegations noted the problems of non-IAATO operators with particular regard to the numbers of passengers landed ashore from vessels carrying over 500 people. They questioned how these activities might be regulated. They also highlighted the need to know the total number of persons on board each vessel (e.g. crew members, expedition leaders), and asked IAATO to include these figures in future reports.

(147) In relation to the generic issue of large vessels, the Meeting focussed on three key issues, namely: cumulative impacts associated with landing activities, the potential environmental damage stemming from a major grounding or sinking of a vessel, and search and rescue. In relation to the last, the UK provided information on the IMO agreed criteria for determining what constitutes an area remote from search and rescue facilities.

(148) Recognising the global application of IMO instruments, the Meeting noted that matters relating to large vessels might in due course be directed to the IMO. It was recognised however, that a clear proposal would need to be formulated before approaching the IMO. It was agreed this matter would be addressed at ATCM XXX.

(149) Some delegations expressed concerns about third country-flagged vessels. It was noted that some 50% of tourist vessels were flagged to non-Treaty Parties. Attempts at earlier ATCMs to address the issue of third party flag-states through port state jurisdiction or direct interaction between the ATCM and such states had not been successful.

(150) One delegation pointed out that, according to its national legislation, non-IAATO members organised or proceeding from its territory still needed to submit an IEE to its government.

(151) The United Kingdom submitted a draft Resolution on limiting landings from large ships. Many delegations noted with concern the growing number of large tourist ships operating in Antarctica. While most ships carrying more than 500 passengers do not land passengers ashore, some large ships continue to land passengers. Concerned about the potential for undesirable environmental impacts, many delegations were prepared to recommend that when Parties assess activities, they should take a precautionary approach and refrain from allowing vessels carrying more than 500 passengers from making landings in Antarctica.

(152) The Meeting recognised the complexity of this topic. Some delegations were of the view that more analysis and advice on potential environmental impacts was required to inform such decisions. To this end, the Meeting agreed to ask the CEP whether the proposal to prevent ships carrying more than 500 passengers from landing in Antarctica was an environmentally responsible and precautionary approach, or whether they would recommend an alternative.

(153) A delegation raised concerns that any delay in acting on these important issues risked the Parties being blamed if an incident occurred, and suggested that waiting for scientific advice could postpone an important decision.

(154) The Meeting agreed to address the issue of landing passengers ashore from large ships at ATCM XXX once the advice from the CEP was available.

Site Visitors Guidelines

(155) The United Kingdom introduced WP 2 *Policy Issues Arising from On-Site Review of Guidelines for Visitor Sites in the Antarctic Peninsula,* submitted by the United Kingdom, Argentina, Australia, Norway and the United States. The United Kingdom thanked IAATO for its assistance and noted that the CEP would look at the monitoring and implementation aspects of the guidelines. The management provisions varied from site to site, but no site was found suitable for vessels of more than 500 passengers. There are currently twelve site-specific guidelines, with the intention to produce more in the future. Many delegations commended the United Kingdom and the other Parties for their useful work.

(156) ASOC introduced IP 65 *Managing Antarctic tourism: A critical overview of site-specific guidelines*, which noted some of the positive and negative aspects of the site-specific guidelines approach. Site-specific guidelines were useful to evaluate whether or not the use of a site for tourism purposes was appropriate and also helped to inform how activities should be conducted at specific sites. However, site-specific guidelines were a non-binding tactical response to tourism developments and currently covered a small percentage of sites visited by tourists, whereas in ASOC's view there was a need for strategic approaches to manage tourism, and for a global Antarctic tourism policy.

(157) IAATO introduced IP 66 *Brief Update on the Antarctic Peninsula Landing Site Visits and Site Guidelines*, which outlined the latest site visit trends. IAATO offered to update the CEP on emerging trends over the next few years and announced they intended to propose additional site guidelines for a further fifteen sites over the next two years. IAATO emphasized the importance of experienced guides and informed the Meeting that a guide certification programme is being developed.

(158) The Meeting welcomed the work that had been undertaken in the CEP on site guidelines and noted its plans to undertake further work on the monitoring and development of site guidelines. The Meeting noted that the Tourism and non-Governmental Activities Working Group should continue to receive updates on the work of the CEP on site guidelines.

(159) The Meeting also welcomed the guidelines as a useful tool but noted that it was only one component in the concept of an environmental management toolbox.

(160) The Meeting stressed the importance of the implementation of the adopted site-specific guidelines.

Land-Based Tourism

(161) New Zealand introduced WP 15 *Regulation of Land-Based Infrastructure to Support Tourism in Antarctica*, submitted by Australia and New Zealand in response to a request from ATCM XXVIII for a more in-depth analysis on land-based tourism. The paper raised various legal, jurisdictional and environmental impact concerns arising from land-based tourism and suggested topics for discussion, including the current situation, and potential implications of future developments. The paper canvassed the various approaches the ATCM could take to prevent the development of land-based infrastructure to support tourism.

(162) One delegation noted that land-based tourism is not an entirely hypothetical proposition, and described a major land-based tourism proposal from the late 1980s, which envisaged hotel, airport, conference and other facilities on the Antarctic continent. The project was not endorsed and did not eventuate, but it did trigger a parliamentary enquiry on Antarctic tourism development. Another delegation confirmed that the issue is not a hypothetical one, as some tourism infrastructure already exists in Antarctica.

(163) Some delegations expressed concern about the environmental footprint of tourism, particularly the potential for rapid growth, and highlighted concern over the lack of legal provision in the Protocol to address land-based tourism. The view was also expressed that self-regulation by states is a valid option to manage this issue.

(164) Several delegations noted that science is the privileged activity in Antarctica. Some delegations added that tourism, as an example of a peaceful activity, is also a valid activity – although it remained secondary to science. It was suggested that better use of environmental impact assessments could be an alternative solution to regulating tourism. Some delegations expressed the view that clearer definitions of land-based tourism are needed to avoid some scientific research activities being perceived as tourism. One delegation also suggested that ship-borne tourism could have as great an impact on the environment as land-based tourism because, in its view, placing passengers ashore was equivalent to land-based tourism. One delegation called for a full survey of all current land-based activity in Antarctica.

(165) Several Parties acknowledged various points raised in IP 85 *Land-Based Tourism and the Development of Land-based Tourism Infrastructure in Antarctica: An IAATO Perspective*, particularly in regard to definitions of land-based tourism.

(166) One delegation suggested taking a precautionary approach to the issues in WP 15 and emphasized the need to ensure any decision was based on practical considerations. The Environmental Protocol provides a legal framework on this issue and there are no legal grounds to prohibit activities that had passed a rigorous EIA. Other delegations commented that, due to differences in national legislation, the EIA process might not be sufficient in all cases.

(167) One delegation noted with appreciation the options and questions posed in WP 15. Options were nevertheless too weak as voluntary restraints, or not appropriate as prohibitions that could clash with domestic legislation. This delegation considered

tourism a legitimate peaceful use under the Treaty and the Protocol, unless an environmental impact assessment considered terrestrial tourism a threat to the Antarctic environment and ecosystems. A determination should be made, beyond the mere reference to Article 3 of the Protocol, that the establishment of permanent land-based infrastructure for tourist use was a breach of the obligations upheld by the Treaty and the Protocol.

(168) Another delegation concurred that tourism is a peaceful activity and stated that they would not be able to accept a measure oriented to prohibit tourist activities in Antarctica.

(169) One delegation emphasized the need to be proactive, and address these issues before they became a reality. A long-term strategy was required but, in the interim, it proposed that the Meeting adopt a non-mandatory undertaking by Parties to discourage the development of permanent land-based infrastructure to support tourism. Many delegations supported this approach.

(170) The United Kingdom tabled a draft Resolution on Limiting Permanent Non-Governmental Infrastructure in Antarctica. This proposed that Parties should refrain from authorizing permanent land-based facilities in Antarctica that are not in support of national Antarctic science programmes or associated with a government operator. Whilst many delegations supported the draft some delegations believed that clearer definitions were needed. Despite lengthy debate, consensus on the draft, or any alternative draft considered, could not be reached. The Meeting decided not to establish an inter-sessional contact group, but instead to address this issue again at ATCM XXX.

(171) The Meeting observed that no delegation spoke in favour of the development of new permanent land-based infrastructure to support tourism in Antarctica. However, one delegation indicated that a Resolution, which would have the effect of discouraging only future developments, was not appropriate since the question needed to be addressed in its entirety, including existing infrastructure.

(172) Germany informed the Meeting of a decision by its administrative court to refuse to issue a permit in relation to the installation, for an unlimited period, of a bronze sculpture in Antarctica. This issue illustrates new challenges in respect of the installation of "infrastructure" for non-scientific purposes and Parties should consider whether such installations would be in line with the provisions of the Environmental Protocol or at least whether they would be 'desirable' in Antarctica.

Strategic Issues

(173) France introduced WP 18 *Establishment of "areas of special tourism interest"* and recalled that WP 12 at XXVIII ATCM had also addressed this issue. It suggested that establishing dedicated areas of special tourism interest would avoid conflict of interests between science and tourism. Alternatively, the ASMA approach could be used with zones carefully selected to recognize sustainable management and safety,

as well as limiting passenger numbers. France further suggested this approach could be tested through a pilot project.

(174) Delegations thanked France for this Working Paper. However, many expressed doubts about setting up dedicated tourist areas. Some delegations felt that more rules were unnecessary, since most tourist activities comply with existing rules: the development of specialist tourist sites could be regarded as exploitation rather than preservation. Another delegation was concerned that tour companies might build permanent land-based infrastructure in such dedicated tourist zones.

(175) Some delegations noted that the ASMAs for Deception Island and the Dry Valleys each have tourist zones included in their management plans. In these cases it was possible to limit numbers of tourists, without setting aside any part of Antarctica exclusively for tourists.

(176) Some delegations expressed the view that the strategic approach of the paper was of value, as, in the longer term, new policy approaches could be necessary to prevent cumulative impacts. One delegation also noted that climate change could make more areas accessible, and thus potentially create more tourist sites.

(177) ASOC presented IP 120 *Strategic Issues posed by Commercial Tourism in the Antarctic Treaty Area*. This paper addressed the scale and trends of commercial tourism, and identified priority strategic issues including i) determining an acceptable rate of growth of the activity in the Antarctic Treaty System area; ii) determining acceptable levels of tourism; iii) asking whether certain types of tourism be prohibited, e.g. onshore infrastructure or large vessels.

(178) Several delegations welcomed the broad-ranging nature of the paper. One delegation remarked that the Antarctic contains many unique areas, and therefore it is difficult to apply a general policy on tourism. Another delegation asked if a broader intergovernmental framework, similar to the one covering the harvesting of marine resources, would be useful in taking forward the issue of tourism management.

(179) An expert explained that while Antarctic tourism has increased in recent years, this has been largely confined to ship-borne tourism; the level of land-based and air-borne tourism has remained static. The Meeting was reminded of COMNAP's multi-annual survey, which identified little conflict between tourism and some aspects of national programmes operations.

Accreditation

(180) IAATO presented IP 95 *An Update on the Antarctic Audit and Accreditation Scheme*, which outlined progress in developing an accreditation scheme. IAATO reported that it took as its starting point the report of the ICG on accreditation from ATCM XXVIII (WP 18), and has since held discussions with several Parties and experts on accreditation.

(181) IP 95 noted that to be of any value, an accreditation scheme will need to be formal and contain a mandatory procedure that is independent and verifiable. IAATO

identified a number of challenges in developing such a scheme, including the interaction between an accreditation scheme and Parties' domestic assessment processes. The scheme must also have sufficient flexibility to accommodate future regulations from ATCMs. A proposed way forward was outlined in IP 95.

(182) Several delegations thanked IAATO for continuing work on this important issue. One delegation expressed disappointment that it had not been possible for IAATO members to trial a scheme in 2005-06, despite earlier indications that this would occur, and highlighted Parties' desire that a scheme is mandated and vetted by the ATCM. The Meeting looked forward to receiving further information on the scheme at ATCM XXX.

Item 13: Inspections under the Antarctic Treaty and the Environmental Protocol

(183) No documents were submitted under this agenda item.

Item 14: Science Issues, particularly scientific co-operation and facilitation

(184) Ecuador introduced IP 5 *Ecuador fortalece la ciencia y los asuntos antárticos* highlighting the establishment in 2004 of the Ecuadorian Antarctic Institute (INAE). This had already resulted in progress in the form of a successful expedition to Antarctica from December 2005 to February 2006.

(185) China introduced IP 33 *Chinese Grove Mountains Integrated Expedition 2005-2006*. It wished in particular to highlight its meteorite research.

(186) Romania introduced IP 35 *Law-Racovita Base, an example of cooperation in Antarctica*, highlighting the new era of scientific collaboration and international friendship between Australia and Romania, which marked the establishment of the first scientific Romanian base in Antarctica.

(187) Romania also introduced IP 37 *Romanian Antarctic Medical Activities in Law-Racovita Base in cooperation with China*, highlighting its work with the Chinese Academy of Medical Sciences on the evaluation of metabolic, immunological and behavioural modifications of the 2006 Romanian Antarctic Expedition members.

(188) Romania further introduced IP 38 *Results of Romanian Antarctic Scientific Research 2005-2006*, highlighting the results of its research focusing on studies of cryo-pedology, microbiology and environmental pollution.

(189) SCAR welcomed the presentations by Romania as a new country to Antarctic research, noting that there are already close links with Australia and encouraged Romania to link its research into the wider Antarctic community through the new SCAR programmes. In this way Romania would benefit from access to a great deal of data as well as assistance with developments in scientific techniques and best practice.

(190) Russia referred to IP 68 *Russian Studies of the subglacial Lake Vostok in the season of 2005-2006 and Work Plans for the season of 2006-2007* and IP 73 *Russian Antarctic Studies under the Subprogram "Study and Research of the Antarctic" in 2005* and

gave a brief overview of progress to date on the deep ice core project at Lake Vostok, which had relevance for the entire Antarctic community. Drilling was continuing in stages with close attention being given to environmental impact. The proposed programme was currently undergoing domestic approval procedures. It was hoped to penetrate to the lake water level in season 2007/2008 and a Comprehensive Environmental Evaluation would be presented at the CEP in New Delhi, specifically covering points raised at ATCM XXVI.

(191) The Republic of Korea introduced IP 96 *Collaborations with other Parties in Science and Related Activities during the 2005/2006 Season*, summarising co-operation with other Parties.

(192) ASOC introduced IP 108 *Management of Antarctic Krill*. ASOC was working closely with The Pew Charitable Trusts (USA) to develop and implement an Antarctic krill campaign. While krill populations are not under immediate threat, the development of new harvesting and onboard processing methods, as well as the increasing use of krill for fish meal, pose potential problems for the future. It was necessary to take action now to regulate fisheries and manage krill stocks. In ASOC's view, CCAMLR should take responsibility for krill management and approve catch limits that will protect marine living resources dependent on krill. ASOC outlined possible measures for improving the management of the krill fishery. There was an opportunity for CCAMLR to become a model for full and effective application of the precautionary principle and ecosystem management. ASOC looked forward to working with all concerned Parties to achieve these aims.

(193) Australia referred to IP 25 *Australia's key scientific activities during the 2005/06 Antarctic season*. Australia had carried out a considerable programme of krill research in eastern Antarctica, the data from which would be useful to CCAMLR. Australia welcomed, and supported, ASOC's proposals.

(194) France agreed with Australia regarding ASOC's proposals and underscored the importance of krill as the basis of the Antarctic food chain, referring to concerns expressed at CEP VIII on environmental monitoring. The links between krill populations and marine ecosystems needed more extensive study. CCAMLR should continue to work on this very important issue.

(195) The United Kingdom considered that the relevant expertise within the Antarctic Treaty System to discuss the management of Antarctic krill lay with CCAMLR, not the ATCM Working Group on Operational Matters. The United Kingdom suggested that ASOC send IP 108 to the Scientific Committee of CCAMLR.

(196) Chile agreed with the United Kingdom and stated that it was not involved in the krill fishing industry for the aquaculture industry.

(197) ASOC noted that early action would prevent the development of more serious problems later. ASOC noted that this matter will be directly presented to CCAMLR as suggested, but had wanted to take the opportunity to alert the Meeting to the need for early action at this stage.

Item 15: Operational issues

(198) Uruguay introduced WP 6 *Extension on the use of the (AIS) Automatic Identification System for Antarctic Operations Safety and Security*, aimed at setting up an AIS system for mobile transportation equipment, on sea and on land. Its usefulness for search and rescue and for the support of field operations was emphasised. It noted that it was particularly suitable for operations in areas where stations and bases are concentrated.

(199) Many Parties congratulated Uruguay for its very useful and interesting work and proposal. It was suggested that COMNAP may be best placed to build upon this work in collaboration with Uruguay, for example, to conduct further trials and assessments on a voluntary basis and evaluate the applicability of the system to various National Programmes and types of operations.

(200) COMNAP welcomed the very useful and practical work done by Uruguay and confirmed that it had already arranged to present and discuss this work in the upcoming COMNAP annual meeting in July 2006. COMNAP confirmed that it would work with Uruguay to assess further the system and would report back to ATCM XXX.

(201) Argentina gave a presentation on its IP 111 *Acontecimientos y tareas realizadas por la patrulla de búsqueda y rescate en el continente antártico – año 2005*. Argentina expressed sincere thanks to the Governments of Chile, the Republic of Korea, Frei and King Sejong bases and to other Antarctic Treaty Parties for their assistance.

(202) Many delegations thanked Argentina for its presentation and expressed their condolences for the tragic loss of two members of the Argentine team.

(203) Brazil informed the Meeting that the University of Porto Alegre, in conjunction with the Freiburg Geographical Institute, was in the process of drawing up maps of the ice cap containing crevasse data as a tool to support activities in King George Island / Isla 25 de Mayo.

(204) Russia found use of GPS alone insufficient. It carried out regular aerial photography and used special markers to identify crevasses. It would be happy to share its experience with other Parties.

(205) Australia said the Argentine presentation highlighted the high importance of safety of people working in Antarctica.

(206) Bulgaria informed the Meeting that it and Spain had marked the route linking their adjoining bases. It also advised of the importance of including experienced mountaineers at stations.

(207) South Africa introduced its IP 34 *Report of the Decommissioning of the Emergency Base (E Base) in Antarctica*, confirming the decommissioning and removal of the entire station during the 2005-06 summer season.

Item 16: Education issues

(208) The United Kingdom gave a presentation of its IP 41 *Antarctic Education Website for Schools*. This is an interactive web-based resource called "Discovering Antarctica", which is targeted at 11-16 year olds in UK schools. The website can be accessed at: *www.discoveringantarctica.org.uk*. "Discovering Antarctica" contains background information and facts about Antarctica, and describes the environment, wildlife, science, and the Antarctic Treaty. It also includes comprehensive teachers' notes and lesson ideas. The United Kingdom hoped it would be a valuable contribution to IPY. The site was copyright-free for educational purposes and therefore available to all Parties for use.

(209) The Netherlands considered that the United Kingdom had again taken the lead in developing educational resources about Antarctica for young people. The Netherlands applauded the United Kingdom's leadership and effort in the field of education and outreach.

(210) Australia, Chile, New Zealand, Russia and Sweden congratulated and thanked the United Kingdom. Chile offered to translate the website into Spanish for use throughout Latin America. New Zealand also thanked Russia, Argentina and the Republic of Korea for their Information Papers. It proposed the creation of an Antarctic web portal, linking all material. Australia suggested that COMNAP ask InfoNet to do this. COMNAP advised that it was happy to help but education was outside its remit. New Zealand suggested that the IPY International Programme Office might be better placed to co-ordinate. The United Kingdom proposed that the IPY Office be asked to report to ATCM XXX about its education and outreach activities.

(211) SCAR informed the Meeting that its new objectives include education and outreach. The SCAR website contains a web page on education and training, and another web page on Antarctic Information. These pages operate like portals by incorporating links to many national education and outreach activities. SCAR intends to develop these portals during the IPY, and asked Parties to provide SCAR with web links to national education and outreach websites.

(212) The Meeting recognised the significant opportunity created by IPY to advance Antarctic education, outreach and communication. The United Kingdom volunteered to explore options with COMNAP, SCAR, National Programmes, the Antarctic Treaty Secretariat, and the IPY International Programme Office as to how education and outreach and communication may be best considered by the ATCM. The United Kingdom agreed to report back on this topic to ATCM XXX.

(213) Argentina introduced IP 109 *Educación Antártica Argentina* and IP 110 *Arte Antártico Argentino*. Whilst Argentina wanted to promote Antarctica through educational campaigns, it was also mindful of the need not to exploit the continent.

(214) The Netherlands informed the Meeting that the European Polar Board is planning to set up an educational base camp in Svalbard. A similar educational base camp might be set up in Latin America or New Zealand. This would raise awareness whilst averting the risk of harmful activities in Antarctica itself.

Item 17: Exchange of Information

(215) The Executive Secretary introduced SP 9 *Electronic Information Exchange System*. ATCM XXVIII had instructed the Secretariat to start development of the system, which had been drawn up in consultation with COMNAP and Treaty Parties. The Executive Secretary pointed out that Parties provided data on their activities in a variety of ways. There was no intention to change any input requirements. The input forms included a number of optional fields. Three types of data were required: pre-season, annual and permanent. Spain gave a practical demonstration of data input into the system.

(216) The United States applauded the Secretariat's efforts. It welcomed the confirmation that information exchange requirements would not be expanded. It proposed an initial trial period to allow Parties to gain practical experience with the system.

(217) Argentina, Australia, Chile, France, the Netherlands, New Zealand and the United Kingdom also thanked the Secretariat. Several supported the idea of a trial period and said they would be willing to participate. France and Argentina asked whether access to the system would be restricted or publicly available. The United Kingdom said the system had huge potential. It could help increase collaboration between Parties and allow for wider analysis of data. Australia asked whether co-ordination had taken place with SCAR on scientific reporting requirements.

(218) The Executive Secretary said the system was designed as a data exchange tool for Parties. He acknowledged the system's wider potential as an analytical tool. He said access to the system would be limited to Parties but noted that most of them already placed their information on publicly available websites. He confirmed that SCAR would be consulted during the development of the scientific section of the system.

(219) Germany expressed an interest in the compatibility of data formats (doc, pdf files) and proposed a download possibility for the purpose of publication on national websites.

(220) COMNAP noted that a number of current requirements involved overlapping data and confirmed that it was working with the Antarctic Treaty Secretariat to avoid duplication of data entry. It agreed that a trial period would be desirable. Experience of its own system highlighted the value of user input during this phase. It had also found personal log-in to the system preferable to national log-in.

(221) SCAR confirmed that it would be willing to consult with the Secretariat on reporting requirements for scientific information. It had recently changed its approach to requesting data from its members, asking them only to report on specific SCAR activities.

(222) The Executive Secretary said that the system would be developed on a trial basis. He looked forward to hearing from Parties who wished to provide more detailed input in the development and hoped that the entire system would be functioning on a trial basis by ATCM XXX. He agreed that it would be important to keep track of

authorisations to input or edit data. The Secretariat could also develop arrangements to remind Parties of the deadlines for data submission.

(223) Germany introduced IP 43 *Start of the Antarctic Discussion Forum of Competent Authorities (DFCA),* submitted by Germany and the Netherlands. Germany invited Parties to register for the Forum and announced it would host a workshop in Berlin at the end of 2006.

Item 18: Biological Prospecting in Antarctica

(224) The Meeting thanked France, Argentina and UNEP for their respective Papers: IP 13 *In search of a legal regime for bioprospecting in Antarctica*; IP 112 *Argentine activities of bioprospecting and bioremediation in Antarctica* and IP116 *Recent Trends in the Biological Prospecting*. Some delegations noted that these were in keeping with the spirit of Resolution 7 (2005). They further noted with appreciation that IP 13 raised important legal issues, including a possible regime within the Antarctic Treaty System framework; that IP 112 responded to the wish expressed by the ATCM that Member States report their bioprospecting activities by incorporating valuable information, including the application of bioremediation; and IP 116 reflected in a comprehensive overview the growing interest in bioprospecting in Antarctica and the changing nature and dynamics of research in the industry that may affect the use of Antarctic compounds. The Meeting confirmed that bioprospecting would be discussed at ATCM XXX and urged Parties to continue to provide updates on their activities in this field.

Item 19: Preparation of ATCM XXX

a. Date and Place

(225) The Meeting welcomed the kind invitation of the Government of India to host ATCM XXX in New Delhi from 30 April to 11 May 2007.

(226) For future planning, the Meeting took note of the following likely timetable of upcoming ATCMs:

- 2008: Ukraine
- 2009: United States of America
- 2010: Uruguay
- 2011: Argentina

(227) The Chairman informed the Meeting that, at Belgium's request, the issue of coordinating dates between ATCMs and the International Whaling Commission (IWC) had been discussed in the margins. This should not be an issue in 2007. For the future, it was suggested that the Antarctic Treaty Secretariat should seek to exchange early information on proposed dates with the Secretariat of the IWC, as well as with the United Nations Secretariat in charge of organising the Informal

Consultative Process on the Law of the Sea and with other relevant organisations meeting at the same time of the year (such as CITES). To this end, it was further suggested that the expected host country for an ATCM should inform the Antarctic Treaty Secretariat of the proposed dates for the ATCM as soon as possible.

b. Invitation of International and Non-Governmental Organisations

(228) In accordance with established practice, the Meeting agreed that the following organisations having scientific or technical interest in Antarctica should be invited to send experts to attend ATCM XXX: the interim secretariat of ACAP, ASOC, IAATO, IHO, IMO, IOC, the IPY International Programme Office, IUCN, UNEP, WMO and WTO.

c. Invitation to Malaysia

(229) The Meeting decided, as on previous occasions, to invite the Malaysian Government to send representatives to observe ATCM XXX.

(230) The Chair reported on contacts with the Delegation of Malaysia in the margins of ATCM XXIX. The Consultative Parties welcomed Malaysia's continued interest in the Antarctic Treaty, and hoped that Malaysia would take appropriate action to accede to the Treaty in the near future.

d. Preparation of the Agenda for ATCM XXX

(231) The Meeting approved the preliminary agenda for ATCM XXX (Annex K, page 507).

e. The SCAR Lecture

(232) The Chairman recalled the lecture given by Dr. Valerie Masson-Delmotte on 14 June 2006 (summarised in Annex H). Taking into account the valuable series of lectures given on the occasion of ATCMs, the Meeting decided to invite SCAR to give another lecture on scientific issues relevant to ATCM XXX.

Item 20: Adoption of the Final Report

(233) The Meeting adopted the Final Report of the Twenty-ninth Antarctic Treaty Consultative Meeting.

(234) After closing remarks by the Chair (in Annex D, page 263), the Meeting was closed on 23 June 2006.

PART II

MEASURES, DECISIONS AND RESOLUTIONS

ANNEX A

MEASURES

Measure 1 (2006)

Antarctic Specially Protected Areas: Designations and Management Plans

The Representatives,

Recalling Articles 3, 5 and 6 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty, providing for the designation of Antarctic Specially Protected Areas and approval of Management Plans for those Areas;

Recalling

- Recommendation VIII-4 (1975), which designated Haswell Island as Site of Special Scientific Interest ("SSSI") No 7 and annexed a management plan for the site;

- Recommendation XIII-8 (1985), which designated Caughley Beach as SSSI No 10 and annexed a management plan for the site, Recommendation XIII-12 (1985), which designated New College Valley as Specially Protected Area ("SPA") No 20, Recommendation XVII-2 (1992), which annexed a management plan for the area, and Measure 1 (2000), which expanded SPA No 20 to incorporate Caughley Beach, annexed a revised management plan for the area, and provided that thereupon SSSI No 10 shall cease to exist;

- Recommendation XIII-8 (1985), which designated Canada Glacier as SSSI No 12 and Cierva Point as SSSI No 15 and annexed management plans for these sites, and Measure 3 (1997), which annexed revised management plans for both sites;

- Recommendation XIII-8 (1985), which designated Clark Peninsula as SSSI No 17 and annexed a management plan for the site, and Measure 1 (2000) which annexed a revised management plan for the site;

- Decision 1 (2002), which renamed and renumbered these areas and sites as Antarctic Specially Protected Areas;

Recalling Recommendation XIII-16 (1985), which designated Port-Martin base as Historic Monument No 46, and Measure 3 (2003), which revised and updated the "List of Historic Sites and Monuments" in which Historic Site and Monument ("HSM") No 46 is listed;

Noting that the Committee for Environmental Protection has advised that three areas, namely: Edmonson Point, Wood Bay, Ross Sea; Port-Martin, Terre Adélie; and Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica, be

designated as new Antarctic Specially Protected Areas, and has endorsed the Management Plans for those areas annexed to this Measure;

Recognising that these areas support outstanding environmental, scientific, historic, aesthetic or wilderness values, or ongoing or planned scientific research, and would benefit from special protection;

Desiring to approve Management Plans for these areas, and to replace the Management Plans for Antarctic Specially Protected Areas No 116, 127, 131, 134 and 136, with revised and updated Management Plans;

Noting that Edmonson Point, Wood Bay, Ross Sea contains marine areas and that the Commission for the Conservation of Antarctic Marine Living Resources approved the designation of those areas as an Antarctic Specially Protected Area at its 24th meeting;

Recommend to their Governments the following Measure for approval in accordance with paragraph 1 of Article 6 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty:

1. the following be designated as Antarctic Specially Protected Areas:

(a) Antarctic Specially Protected Area No. 165: Edmonson Point, Wood Bay, Ross Sea;

(b) Antarctic Specially Protected Area No. 166: Port-Martin, Terre Adélie; and

(c) Antarctic Specially Protected Area No. 167: Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica.

2. the Management Plans for the following Areas, which are annexed to this Measure, be approved:

(a) Antarctic Specially Protected Area No. 116: New College Valley, Caughley Beach, Cape Bird, Ross Island;

(b) Antarctic Specially Protected Area No.127: Haswell Island (Haswell Island and Adjacent Emperor Penguin Rookery on Fast Ice);

(c) Antarctic Specially Protected Area No 131: Canada Glacier, Lake Fryxell, Taylor Valley, Victoria Land;

(d) Antarctic Specially Protected Area No 134: Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula;

(e) Antarctic Specially Protected Area No. 136: Clark Peninsula, Budd Coast, Wilkes Land;

(f) Antarctic Specially Protected Area No. 165: Edmonson Point, Wood Bay, Ross Sea;

(g) Antarctic Specially Protected Area No. 166: Port-Martin, Terre Adélie; and

(h) Antarctic Specially Protected Area No. 167: Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica.

3. all prior management plans for Antarctic Specially Protected Areas No. 116, 127, 131, 134 and 136 shall cease to be effective, or, if any such plans have not yet become effective, they are hereby withdrawn.

Management Plan for Antarctic Specially Protected Area No. 116

NEW COLLEGE VALLEY, CAUGHLEY BEACH, CAPE BIRD, ROSS ISLAND

1. Description of values to be protected

An area of 0.33 km^2 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 20m^2, 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 mean 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.
- Up to date Management Plans, maps and other relevant information shall be made available on National Programme websites.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- 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.
- 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). Map includes vegetation and streams mapped in the northern zone of the ASPA.

- Map C: New College Valley site topographic map – enlargement. Details include an enlargement of the northern zone of ASPA 116 showing vegetation and stream locations. Also shown are the approximate penguin distribution of the northern colony and helicopter landing pads.

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 rookeries 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 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 the most extensive ephemeral stream course distributions of the moss *Hennediella heimii* on Ross Island. Surveys have shown that this moss, together with much lower occurrences of two other species – *Bryum subrotundifolium* 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 rookeries 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

Restricted Zone

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 on the SW boundary 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 NW corner of the Area and an approximately one metre square wooden frame marking the site of an experimental oil spill from 1982. The toilet and stores hut are located 40 m north of the NW corner of the Area with the Cape Bird hut located a further 20 m north. (Map B and C). 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, Ross Island (ASPA No. 156), approximately 25 km SE; Tramway Ridge, Mount Erebus, Ross Island (ASPA No. 130) 30 km SSE; Cape Crozier, Ross Island (ASPA No. 124) 75 km SE; Cape Royds, Ross Island (ASPA No. 121) and Cape Evans, Ross Island (ASPA No. 155) 35 km and 45 km south on Ross Island respectively; and Beaufort Island, Ross Island (ASPA No. 105) 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 (~150 ft) above ground level is prohibited. Hovering over the Area is not permitted lower than 100m (~300 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.

8. Bibliography

Ainley, D. G. , Ballard, G. , Barton, K. J. , Karl, B. J. , Rau, G. H. , Ribic, C. A. & Wilson, P. R. 2003. Spatial and temporal variation of diet within a presumed metapopulation of Adelie penguins. *Condor*, 105, pp. 95-106.

Ainley, D. G. , Ribic, C. A. , Ballard, G. , Heath, S. , Gaffney, I. , Karl, B. J. , Barton, K. J. , Wilson, P. R. & Webb, S. 2004 . Geographic structure of Adelie penguin populations: overlap in colony-specific foraging areas. *Ecological monographs*, 74, 1, pp. 159- 178.

Broady, P. A. 1989. Broadscale patterns in the distribution of aquatic and terrestrial vegetation at three ice-free regions on Ross Island, Antarctica. *Hydrobiologia* 172: 77-95.

Butler, E. R. T. 2001. Beaches in McMurdo Sound, Antarctica. Ph. D. , Victoria University of Wellington. p. 219.

Hall, B. L. , Denton, G. H. & Hendy, C. H. 2000. Evidence from Taylor Valley for a Grounded Ice Sheet in the Ross Sea, Antarctica. *Geografiska annaler*, 82A , 2-3, pp. 275-304.

Lambert, D. M. , Ritchie, P. A. , Millar, C. D. , Holland, B. , Drummond, A. J. & Baroni, C. 2002. Rates of evolution in ancient DNA from Adélie penguins. *Science*, 295, March, pp. 2270-2273.

Nakagawa, S. , Möstl, E. & Waas, J. R. 2003. Validation of an enzyme immunoassay to measure faecal glucocorticoid metabolites from Adelie penguins (Pygoscelis adeliae): a non-invasive tool for estimating stress? *Polar biology*, 26, pp. 491-493.

Ritchie, P. A. , Millar, C. D. , Gibb, G. C. , Baroni, C. , Lambert, D. M. 2004. Ancient DNA enables timing of the Pleistocene origin and Holocene expansion of two Adelie penguin lineages in Antarctica. Molecular biology and evolution, 21, 2, pp 240-248.

Roeder, A. D. , Marshall, R. K. , Mitchelson, A. J. , Visagathilagar, T. , Ritchie, P. A. , Love, D. R. , Pakai, T. J. , McPartlan, H. C. , Murray, N. D. , Robinson, N. A. , Kerry, K. R. & Lambert, D. M. 2001. *Molecular Ecology*, 10, pp. 1645-1656.

Sinclair, B. J. 2000. The ecology and physiology of New Zealand Alpine and Antarctic arthropods. Ph. D. , University of Otago, pages 231.

Sinclair, B. J. 2001. On the distribution of terrestrial invertebrates at Cape Bird, Ross Island, Antarctica. *Polar Biology*, 24(6), pp . 394-400.

Sinclair, B. J. & Sjursen, H. 2001. Cold tolerance of the Antarctic springtail Gomphiocephalus hodgsoni (Collembola, Hypogastruridae). *Antarctic Science*, 13(3), p. 271-279.

Stevens, M. I. & Hogg, I. D. 2003. Long-term isolation and recent expansion from glacial refugia revealed for the endemic springtail Gomphiocephalus hodgsoni from Victoria Land, Antarctica. *Molecular ecology*, 12, pp. 2357-2369.

Wilson, P. R. , Ainley, D. G. , Nur, N. , Jacobs, S. S. , Barton, K. J. , Ballard, G. & Comisco, J. C. 2001. Adélie penguin population change in the Pacific sector of Antarctica: relation to sea-ice extent and the Antarctic Circumpolar Current. *Marine ecology progress series*, 213, pp. 301-309.

Figure 1 - New College Valley, Cape Bird, Ross Island, Antarctic Specially Protected Area 116: Perspective View

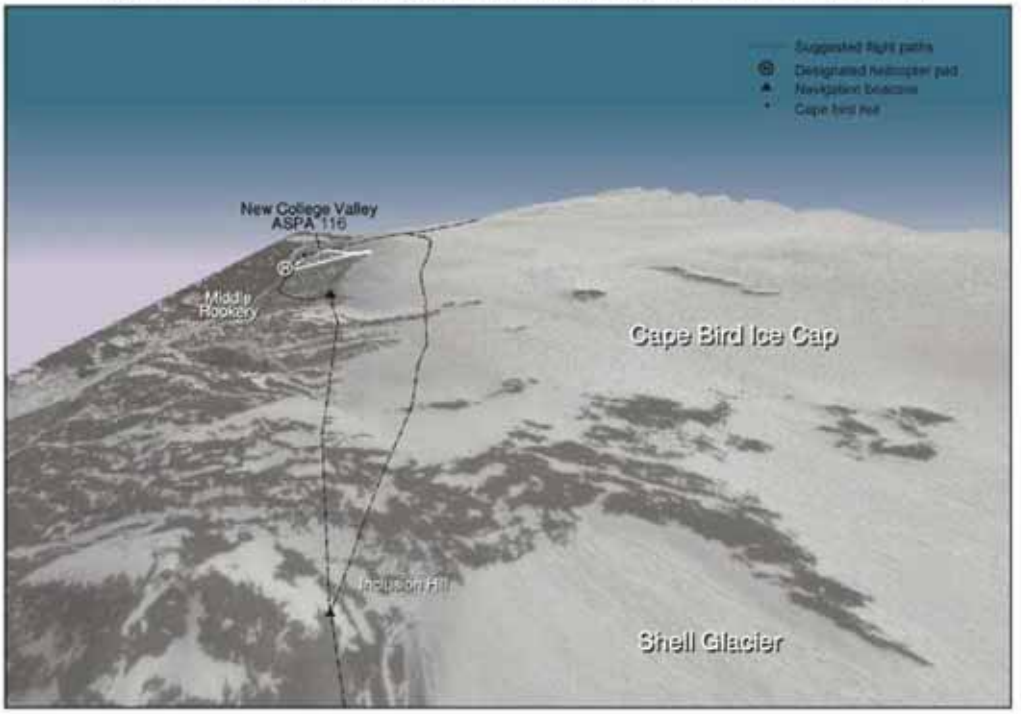
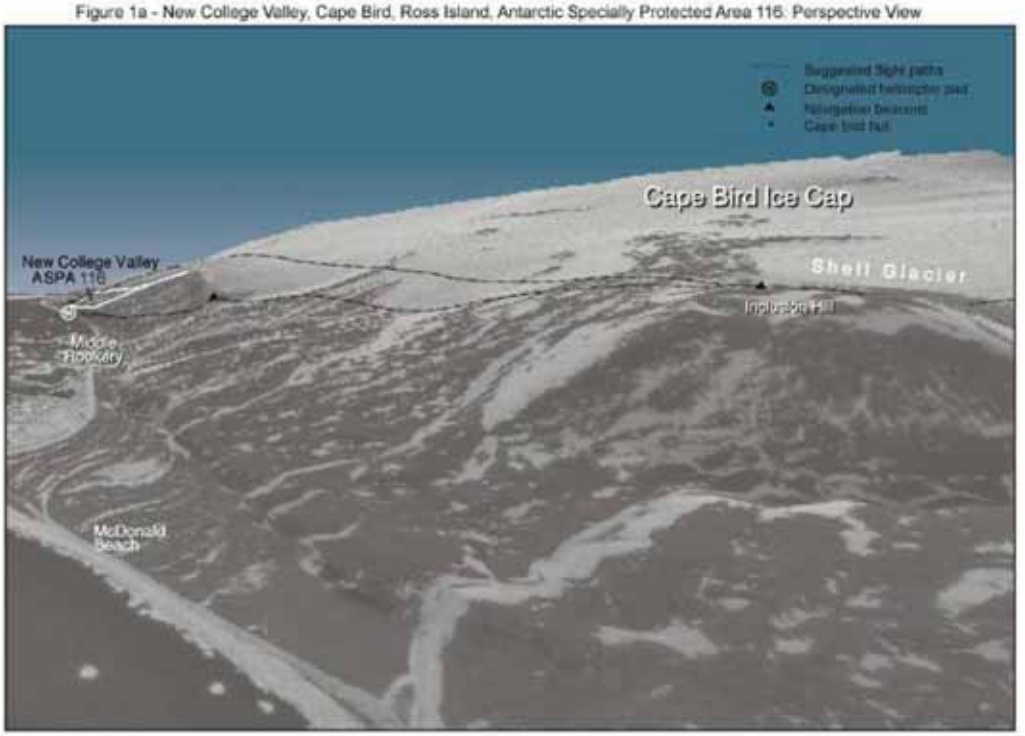
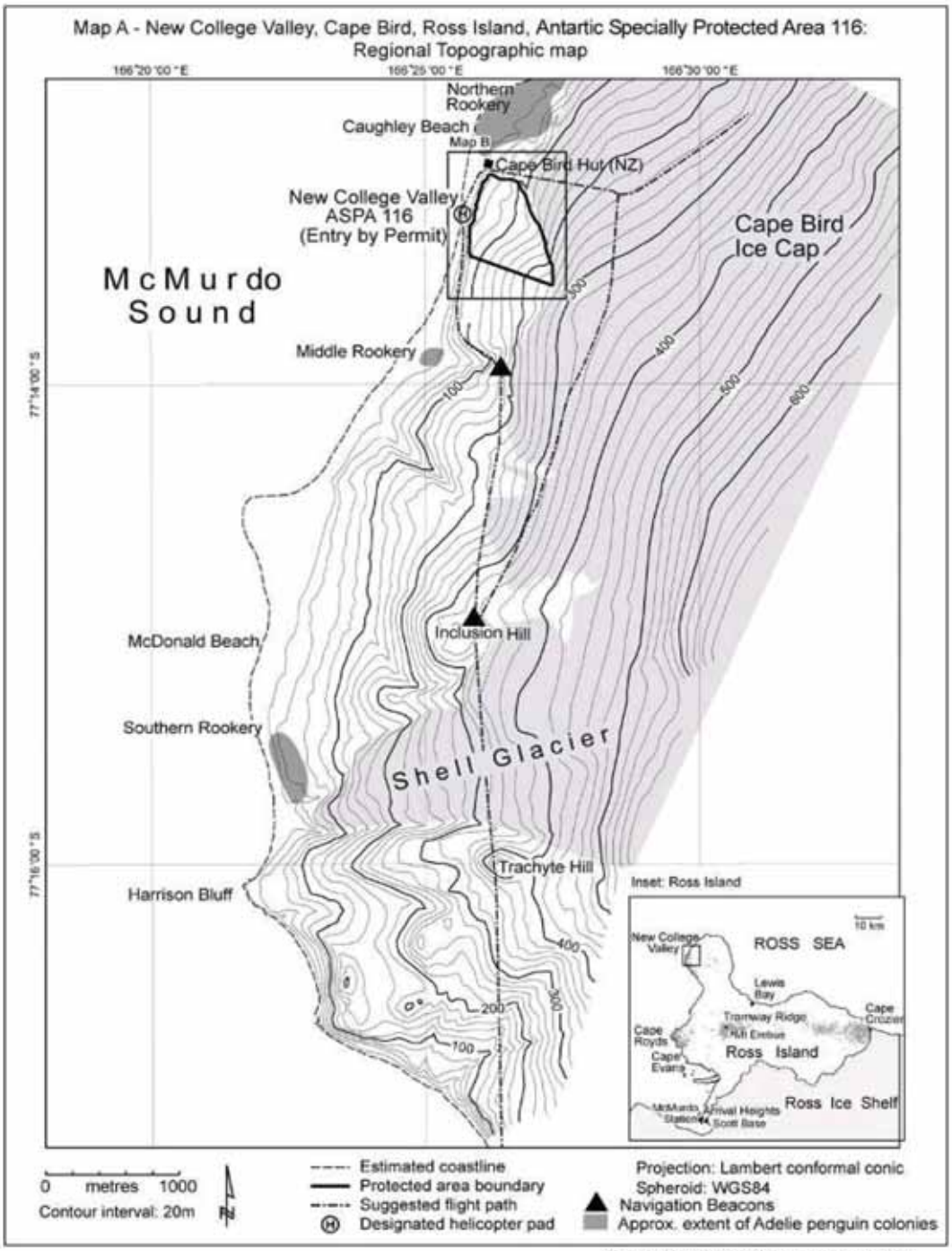
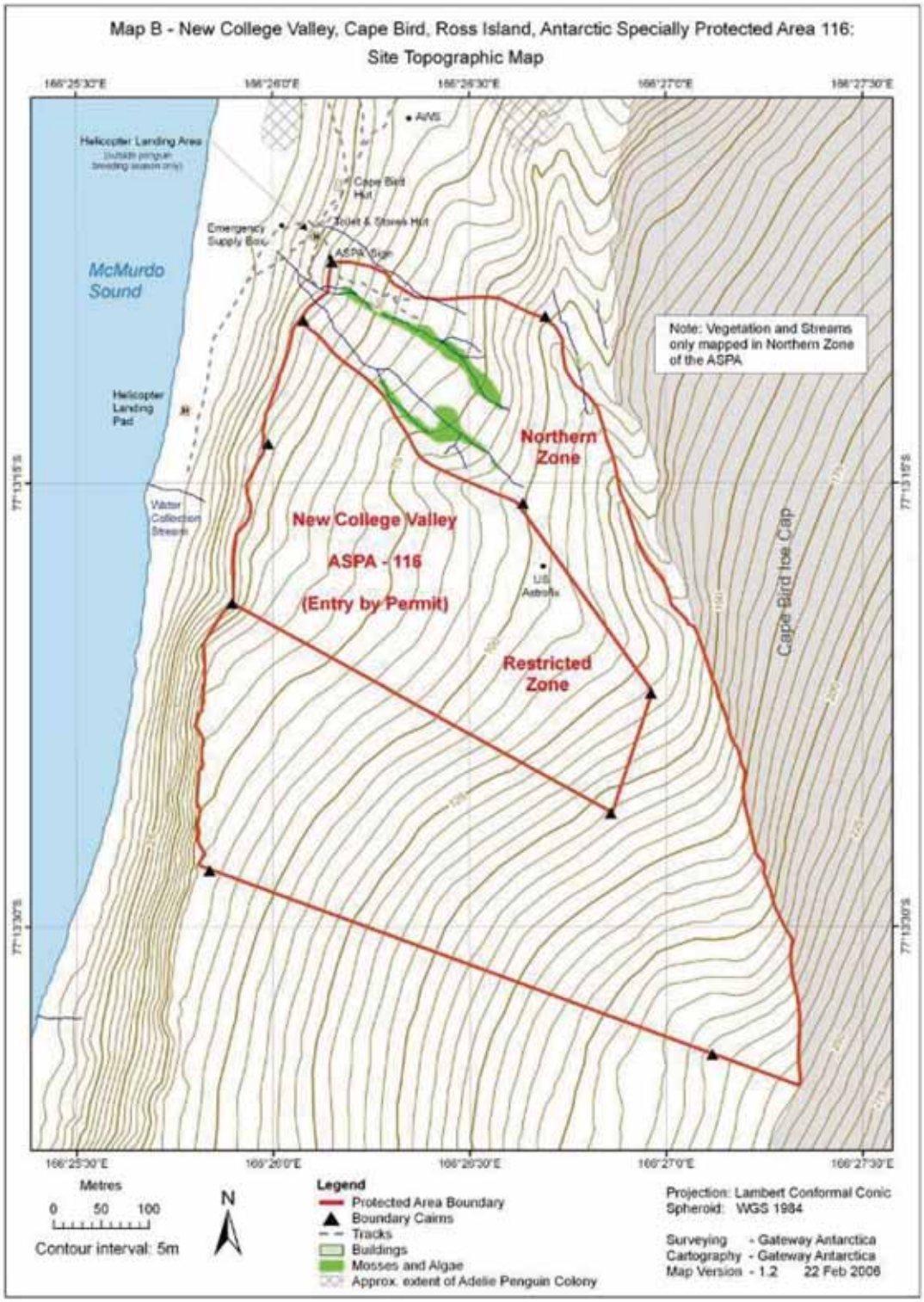


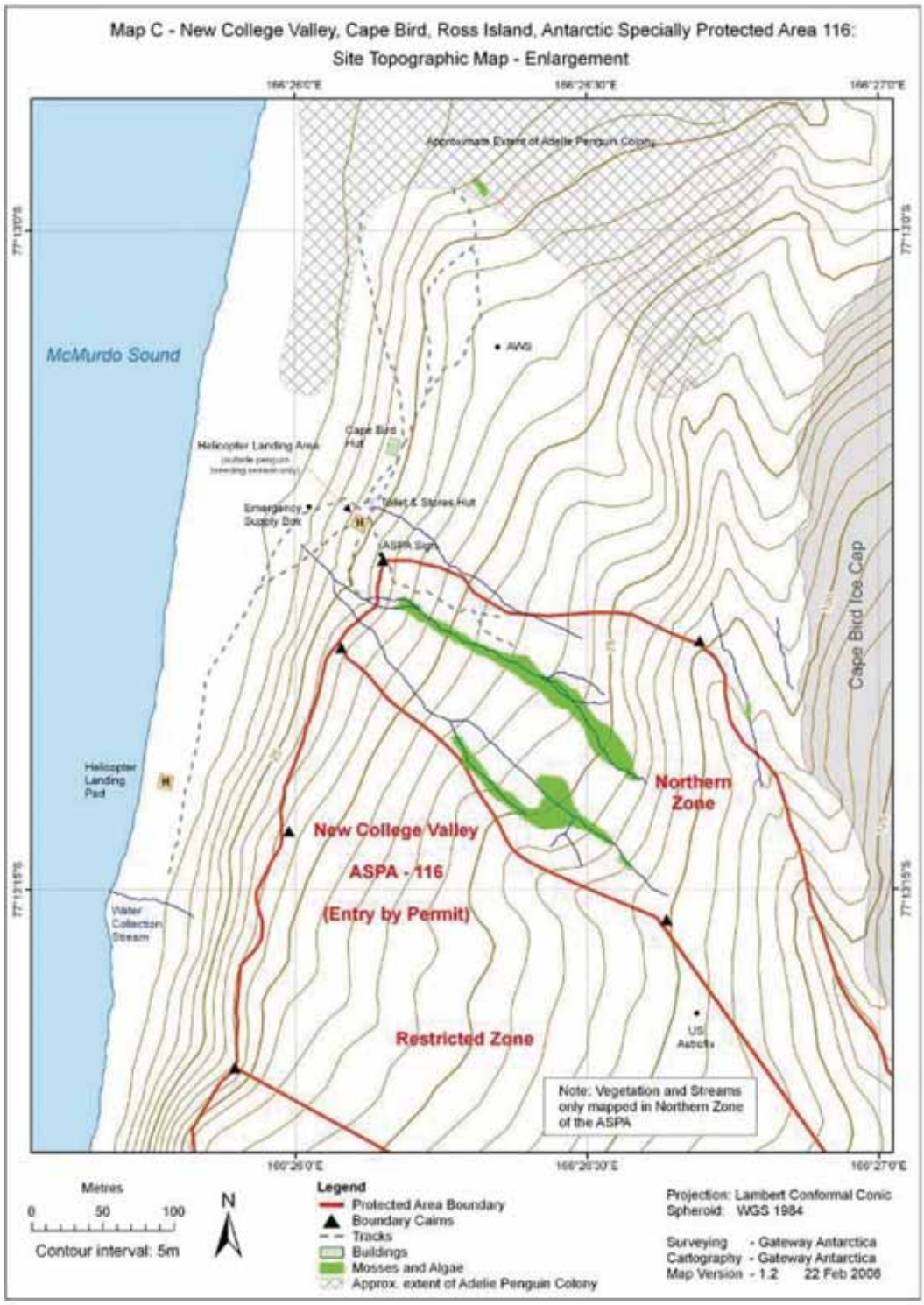
Figure 1a - New College Valley, Cape Bird, Ross Island, Antarctic Specially Protected Area 116: Perspective View





Source: New College Valley management plan


Map B - New College Valley, Cape Bird, Ross Island, Antarctic Specially Protected Area 116:
Site Topographic Map
166°25'30"E
166°26'0"E
166°26'30"E
166°27'0"E
166°27'30"E
77°13'15"S
77°13'30"S
AWS
Helicopter Landing Area
(outside penguin breeding season only)
Cape Bird Hut
Toilet & Stores Hut
Emergency Supply Box
ASPA Sign
McMurdo Sound
Helicopter Landing Pad
Water Collection Stream
Note: Vegetation and Streams only mapped in Northern Zone of the ASPA
Northern Zone
New College Valley
ASPA - 116
(Entry by Permit)
US Astrofix
Restricted Zone
Cape Bird Ice Cap
Metres
0 50 100
Contour interval: 5m
N
Legend
Protected Area Boundary
Boundary Cairns
Tracks
Buildings
Mosses and Algae
Approx. extent of Adelie Penguin Colony
Projection: Lambert Conformal Conic
Spheroid: WGS 1984
Surveying - Gateway Antarctica
Cartography - Gateway Antarctica
Map Version - 1.2 22 Feb 2006


Map C - New College Valley, Cape Bird, Ross Island, Antarctic Specially Protected Area 116:
Site Topographic Map - Enlargement
166°26'0"E
166°26'30"E
166°27'0"E
77°13'0"S
77°13'15"S
Approximate Extent of Adelie Penguin Colony
McMurdo Sound
AWS
Helicopter Landing Area
Cape Bird Hut
Emergency Supply Dep.
Toilet & Stores Hut
ASPA Sign
Cape Bird Ice Cap
Helicopter Landing Pad
Water Collection Stream
Northern Zone
New College Valley
ASPA - 116
(Entry by Permit)
Restricted Zone
US Antarctic
Note: Vegetation and Streams only mapped in Northern Zone of the ASPA
Metres
0 50 100
Contour interval: 5m
N
Legend
Protected Area Boundary
Boundary Cairns
Tracks
Buildings
Mosses and Algae
Approx. extent of Adelie Penguin Colony
Projection: Lambert Conformal Conic
Spheroid: WGS 1984
Surveying - Gateway Antarctica
Cartography - Gateway Antarctica
Map Version - 1.2 22 Feb 2006

Management Plan for Antarctic Specially Protected Area No. 127

HASWELL ISLAND
(Haswell Island and Adjacent Emperor Penguin Rookery on Fast Ice)

1. Description of values to be protected

Haswell Island is a unique breeding site for almost all breeding bird species in East Antarctica including the Antarctic petrel (*Talassoica antarctica*), Antarctic fulmar (*Fulmarus glacioloides*), Cape petrel (*Daption capense*), Snow petrel (*Pagodroma nivea*), Wilson's storm petrel (*Oceanites oceanicus*), South Polar skua (*Catharacta maccormicki*), and Adelie penguin (*Pygoscelis adeliae*). The Area supports five species of pinnipeds, including the Ross seal (*Ommatophoca rossii*) which is a Specially Protected Species.

South-east of the island, there is a large colony of Emperor penguins (*Aptenodytes forsteri*) on fast ice.

The Area consists of Haswell Island (66º31'S, 93º00'E), about 1 km^2 in area, the largest of a group of islands lying close to Mirny station, together with its littoral zone and the area of fast ice, when present. ATCM VIII (Oslo, 1975) approved its designation as SSSI 7 on the aforementioned grounds after a proposal by the USSR. Map 1 shows the location of the Haswell Islands (except Vkhodnoy Island), Mirny Station, and logistic activity sites. It was renamed and renumbered as ASPA No. 127 by Measure 1 (2002).

The boundaries of the Antarctic Specially Protected Area, Haswell Island (66º31'S, 93º00'E, about 1 km^2 in area) and the adjacent section of Davis Sea fast ice of approximately 5 km^2 (when present), which supports a colony of Emperor penguins are detailed in Map 2. It is one of a few Emperor penguin colonies in the vicinity of a permanent Antarctic station, and therefore it has advantages for the study of the species and its habitat.

Described by biologists during the first Soviet expeditions, the Area was studied in the 1970s and recent years, providing valuable materials for comparative analyses and monitoring of the long-term environmental impact of a large Antarctic station.

2. Aims and objectives

Research in the ASPA is conducted to provide a better understanding of how natural and anthropogenic environmental changes affect the status and dynamics of local populations of flora and fauna, and how these changes affect the interaction between key species of the Antarctic ecosystem.

Management at Haswell Island aims to:

- Avoid direct impact of logistic activities on the Area;
- Regulate access to the Area;
- Avoid anthropogenic changes in the structure and abundance of local populations of flora and fauna;
- Allow scientific research, provided it is for compelling scientific reasons that cannot be served elsewhere;

- Facilitate scientific research on the environment in the context of monitoring and assessment of human impact on populations:
- Encourage environmental education and awareness.

3. Management activities

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

- When a vessel is approaching Mirny station and upon arrival at the station, all persons arriving shall be informed of the existence and location of the ASPA and the relevant provisions of the Management Plan.
- Copies of the Management Plan and maps of the Area showing its location shall be available at all units engaged in logistic and scientific activities on the Haswell Islands.
- A sign showing the Area boundaries, with clear statements of entry restrictions ("No entry! Antarctic Specially Protected Area"), shall be placed at the crossing point of the lines Gorev Island – Fulmar Island and Cape Mabus – eastern extremity of Haswell Island to help avoid inadvertent entry into the Area following the formation of fast ice which is safe for pedestrian and vehicle traffic. Information signs shall be installed at the top of Cape Mabus slope, and at station activity sites in the direct vicinity of the Area.
- Markers and signs erected within the Area shall be secured, maintained in good condition, and will have no impact on the environment.
- Overflight shall only be allowed under those conditions as set out under *7. Permit Conditions*

The Management Plan shall be revised periodically to ensure that the values of the Antarctic Specially Protected Area are adequately protected. Any activity in the Area shall be preceded by an environmental impact assessment.

4. Period of designation

Designated for an indefinite period.

5. Maps

- Map 1: Location of the Haswell Islands, Mirny Station, and logistic activity sites.
- Map 2: Boundaries of Antarctic Specially Protected Area 127, Haswell Island.
- Map 3: Location of breeding seabird colonies.
- Map 4: Topographic map of Haswell Island.

6. Description of the Area

6(i) Geographic coordinates and boundary markers

The Area occupies a territory inside polygon ABFEDC (66º 31'10" S, 92º 59'20" E; 66º 31'10" S, 93º 03' E; 66º 32'30" S, 93º 03' E; 66º 32'30" S, 93º 01'E; 66º 31'45" S, 93º 01'E; 66º 31'45" S,

92º 59'20" E) (Map 2). The marked section of fast ice in the Davis Sea encompasses the most likely routes taken by Emperor penguins during the breeding season.

The Area boundaries on fast ice closer to the station can be broadly (visually) identified on site as directions EF (Vkhodnoy Island – Fulmar Island) and ED (Cape Mabus – eastern extremity of Haswell Island). A sign showing the directions of the Area boundaries, with clear statements of entry restrictions ("No entry! Antarctic Specially Protected Area"), shall be placed in point E. Information signs showing distance to the Area boundary shall be installed at station activity sites in the direct vicinity of the Area (at the top of Cape Mabus slope, and on Buromsky, Zykov, Fulmar, and Tokarev Islands).

It is highly unlikely that the outlying marine boundaries of the Area will be crossed inadvertently, as there is presently no activity this far away from the station. These boundaries have no visual features and shall be identified by the map.

There are no paths or roads within the Area.

6(ii) Natural features

The Area comprises Haswell Island (the largest island in the archipelago), its littoral zone, and the adjacent section of fast ice in the Davis Sea. Russia's Mirny Observatory on Mirny Peninsula, located in coastal nunataks south of the ASPA, has been operational since 1956.

For the larger part of the year, the sea within the Area is covered with fast ice, whose width reaches 30-40 km by the end of winter. Fast ice breaks up between December 17 and March 9 (February 3, on average) and freezes between March 18 and May 5 (April 6, on average). The probability that the ice-free period off Mirny will last more than 1 month is 85%, more than 2 months 45%, and more than 3 months 25%. The Area is always full of icebergs frozen in the ice. In summer, when fast ice disappears, icebergs drift westward along the coast. Seawater temperature is always below zero. The tide has an irregular daily pattern.

Coastal waters support a rich benthic fauna. Fish fauna in the Area is dominated by various icefish species, while Antarctic toothfish (*Dissostichus mawsoni*) and Antarctic silverfish (*Pleuragramma antarcticum*) are less abundant. An ample forage base and the availability of suitable nesting sites create a favorable environment for numerous seabirds. According to records, there are 12 bird species in the vicinity of Mirny (Table 1).

Table 1: The avifauna of the Haswell Islands (ASPA 127).

1	Emperor penguin (*Aptenodytes forsteri*)	B, M
2	Adelie penguin (*Pygoscelis adeliae)*	B, M
3	Chinstrap penguin (*Pygoscelis antarctica*)	V
4	Macaroni penguin (*Eudyptes chrysolophus*)	V
5	Southern fulmar (*Fulmarus glacioloides*)	B
6	Antarctic petrel (*Thalassoica antarctica*)	B
7	Cape petrel (*Daption capense*)	B
8	Snow petrel (*Pagodroma nivea*)	B
9	Wilson's storm petrel (*Oceanites oceanicus*)	B
10	Pomarine skua (*Stercorarius pomarinus*)	V
11	South-polar skua (*Catharacta maccormicki*)	B
12	Kelp gull (*Larus dominicanus*)	V

Notes: B – breeding species; M – molting sites in the vicinity of the station; V – vagrant species.

The coastal fauna is mainly represented by pinnipeds, among which Weddell seals (*Leptonychotes weddelli*) are most abundant. Other Antarctic seal species can be seen occasionally in very small numbers. Minke whales (*Balaenoptera acutorostrata*) and killer whales (*Orcinus orca*) have frequently been observed near Mirny.

At present, seabirds nest on six out of seventeen archipelago islands. Seven species breed directly on the islands, and one species – the Emperor penguin (*Aptenodytes forsteri*) – on fast ice. A few vagrant species have also been observed in the Area.

Emperor penguin *(Aptenodytes forsteri)*

The Emperor penguin colony of the Haswell Islands is located on fast ice in the Davis Sea 2 to 3 km north-east of the Mirny Observatory and usually within 1 km of Haswell Island. The colony was discovered and described by the Western Party of the Australasian Antarctic Expedition on November 25, 1912. However, a detailed study of the colony was initiated only after the establishment of the Mirny Observatory. Since its foundation in 1956, the observatory has been conducting periodic monitoring of the size of the breeding population. The first round-the-year observation of the colony was initiated by E.S. Korotkevich in 1956 (Korotkevich, 1958), continued until 1962 (Makushok, 1959; Korotkevich, 1960; Prior, 1968), and was then resumed by V.M. Kamenev in the late 1960s-early 1970s (Kamenev, 1977). After a long break, observations of the avifauna were resumed at the observatory in 1999-2004.

Table 2 shows a schedule of various phenological events in the Emperor penguin colony of the Haswell Islands.

Table 2: Dates of phenological events in the Emperor penguin colony, Haswell Islands.

Penguins arrive at the colony site	Last 10 days in March
Peak of the mating period	Late April – first ten days in May
Commencement of egg laying	First 5 days in May
Commencement of hatching	July 5–15
Chicks start leaving brood pouches	Last 10 days in August
Chicks start getting together in creches	First 10 days in September
Chicks start molting	Late October – early November
Adult birds start molting	Last 10 days in November – first 5 days in December
The colony starts disintegrating	Last 10 days in November – mid-December
Birds abandon the colony site	Last 5 days in December – first 10 days in January

The most recent data on the colony status were obtained during 2003-2004 when the colony consisted of 3 subcolonies located within 500-1,700 m of each other and separated by icebergs (Map 3). Single adult birds and those with eggs and chicks migrated between the subcolonies.

The estimated local population in the season 2003/2004 was approximately 9,000 birds during the egg laying period, the highest figure obtained from censusing over the last decade (1994–2001: 5,700-7,000 adult birds, RAE unpublished reports). According to estimates and censuses conducted in 1956–1966, the total population varied from 14,000 to 20,000 birds (Korotkevich, 1958, Makushok, 1959, Prior, 1964, Kamenev, 1977).

Available data on changes in population size indicate that the Haswell Island colony is characterized by a negative long-term trend: the population decreased by about 50% over the period 1950-2000 (from 14,000–20,000 to 7,000–9,000 birds). Short-term trend (last decade) is considered to be fluctuating. Systematic monitoring studies should continue on the Haswell Islands to reveal the causes of changes in the breeding population of Emperor penguins.

Table 3: Factors affecting the population of Emperor penguins on the Haswell Islands and relevant mitigation actions.

		Actions to mitigate the impact of anthropogenic factors
Anthropogenic factors	Disturbance by visitors	Visits to the colony should be strictly regulated
	Collection of eggs	The collection of eggs is prohibited, except in accordance with a permit for research issued by a national authority.
	Disturbance by flights	Flight route and height should be selected in accordance with this Management Plan
Natural factors	Climate changes and variability of food resources (Seasonal changes in ice conditions affect food availability and hence may affect adult survival rate and chick mortality; an early break-up of fast ice increases chick mortality in the corresponding season)	

Data on changes in the size of other populations are less complete (Table 4). Long-term changes may show a negative trend. However, it's not possible to make well-grounded conclusions based just on the two available records which are several decades apart.

Table 4: Long-term changes in the size of bird populations on the Haswell Islands. Trend: 0 = uncertain, -1 = negative, ? = supposed.

Species	**1960s-1970s**	**1999/2000**	**Trend**
Adelie penguin	41,000 adult birds	15-15,850 nests	0 ?
Southern fulmar	9,500-10,000 adult birds	2,300 occupied nests with eggs	-1 ?
Antarctic petrel	?	150-200 occupied nests with eggs	?
Cape petrel	750 adult birds	150 occupied nests with eggs	-1 ?
Snow petrel	600-700 adult birds	60-75 occupied nests	-1
Wilson's storm petrel	400-500 adult birds	30+ occupied nests	-1
Antarctic skua	24 pairs	19 pairs	0
	1950s-1970s	**1990s – early 2000s**	
Emperor penguin	14,000 – 18,000 adults	5,700 – 9,000 adults	-1

The data from Haswell Island area show possible long-term negative trends in different seabird species including both penguins and flying birds. Moreover, there are similar data on population decline of emperor penguins during late 1970s from the same large marine region from Terre Adélie area (Barbroud & Weimerskirch 2001). This suggests large-scaled climate changes may be responsible for the population dynamics in the Haswell Island area.

More research and further monitoring are needed to reveal population trends in the birds of Haswell Island and to understand their causes.

6(iii) Definition of seasons; restricted and prohibited zones within the Area

Entry into any part of the Area is allowed only for holders of a Permit issued by an appropriate National Authority.

Activity in the Area shall be subject to special restrictions during the bird breeding season:

- From mid-April to December in the vicinity of the Emperor penguin colony; and
- From October to March in the vicinity of the nesting sites on Haswell Island.

The location of the breeding colonies is shown in Map 3. Emperor penguins, which are especially sensitive to disturbance, shall also be protected outside the designated breeding site as the breeding site may vary in location.

6(iv) Structures within the Area

A beacon – a metal pole whose base is secured by stones – is located on Haswell Island. There are no other structures on the island.

A heated shack containing an emergency food supply may be located on one of the neighboring islands (but not on Haswell Island).

7. Permit conditions

7(i) Permit conditions

Entry into the Area is prohibited unless in accordance with a Permit issued by an appropriate national authority. Issue of a Permit to enter the Area must satisfy the following conditions:

- A Permit is issued only for purposes specified in para. 2 of the Management Plan;
- Permits shall be issued for a stated period;
- The actions permitted will not jeopardize the ecosystems of the Area or interfere with existing scientific research;
- Visits to the Area under a Permit shall be allowed to organized groups accompanied by an authorized person. Relevant information shall be entered in the Visit Logbook specifying the date and purpose of the visit and the number of visitors. The leader of Mirny station keeps the Logbook. The authorized person is appointed in accordance with national procedure; and
- A visit report shall be supplied to the authority named in the Permit by the end of the stated period or annually.

Permits shall be issued for scientific research, monitoring studies, or inspections that do not require collection of biological materials or fauna samples or that require collecting in small quantities. A Permit for a visit to or stay in the Area shall specify the scope of tasks to be implemented, the implementation period, and the maximum number of staff allowed to visit the Area.

7(ii) Access to and movement within the Area

Vehicles other than skidoos are prohibited within the Area.

When approaching or moving within the Area, care shall be taken to avoid any disturbance to birds and seals, especially during the breeding season. Deterioration of, the conditions of or approaches to the bird nesting sites or seal haulouts shall be prohibited at all times.

Haswell Island. The western or south-western slopes are most suitable for access (Map 4). Movement shall only be on foot.

Fast ice section. During the formation of fast ice which provides pedestrian and vehicle safety, entry into the section shall be at any suitable place from the Mirny Observatory. The use of any vehicles in the Area shall be prohibited during the nest sitting season (May-July). When using skidoos, visitors shall not approach the Emperor penguin colony closer than 500 m (irrespective of its location).

Overflight of the Area is prohibited during the most sensitive period of the Emperor penguin breeding cycle, from April 15 to August 31.

During the remainder of the year, overflight of the Area shall be conducted according to the following restrictions (Table 5). Direct overflights of the seabird breeding colonies should be avoided whenever it is possible.

Table 5: Minimum overflight heights within the Area according to aircraft type.

Aircraft type	Number of engines	Minimum height above ground	
		Feet	Meters
Helicopter	1	*2,460*	750
Helicopter	2	*3,300*	1,000
Fixed-wing	1 or 2	*2,460*	750
Fixed-wing	4	*3,300*	1,000

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

- Research on avifauna and other environmental studies that cannot be conducted elsewhere.
- Management activities, including monitoring.
- Education visits to the Emperor penguins colony except in the early nesting period (May – July).

7(iv) Installation, modification, or removal of structures

Structures or scientific equipment may be installed in the Area only for compelling scientific or management purposes approved by an appropriate authority pursuant to the effective regulations.

7(v) Location of field camps

Camping shall be allowed only for safety reasons, and every precaution shall be taken to avoid damage to the local ecosystem and disturbance to the local fauna.

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

No living organisms or chemicals other than chemicals required for scientific purposes specified in the Permit shall be introduced into the Area (chemicals introduced for scientific purposes shall be removed from the Area before the Permit expiry).

Fuel is not to be stored in the Area unless it is required for essential needs relating to the permitted activity. Anything introduced shall be for a stated period only, handled so that the risk to the ecosystem is minimized, and removed at the conclusion of the stated period. No permanent storage facilities shall be established in the Area.

7(vii) Taking of or harmful interference with native flora or fauna

Taking of or harmful interference with native flora or fauna is prohibited, except by Permit. In the case the activity is determined to have less than a minor or transitory impact, it should be conducted in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica, to be used as a minimum standard.

7(viii) 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 for scientific or management purposes specified in the Permit.

However, human waste may be removed from the Area, and dead or pathological samples of fauna and flora may be removed for laboratory analysis.

7(ix) Disposal of waste

All waste shall be removed from the Area.

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

Permits to enter the Area may be granted to carry out scientific observation, monitoring, and site inspection activities, which may involve limited collection of fauna samples, eggs, and other biological materials for scientific purposes. To help maintain the environmental and scientific values of the Area, visitors shall take every precaution against the introduction of alien materials and organisms.

Any long-term monitoring sites shall be appropriately marked on a map and on site. A map showing the boundary of the ASPA shall be displayed at Mirny Station. A copy of the Management Plan shall be displayed at Mirny Station. A copy of the Management Plan shall be freely available at Mirny Station.

Visits to the Area shall be limited to scientific, management and educational purposes.

7(xi) Requirements for reports

Parties should ensure that the principal holder of 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 organizing the scientific use of the Area.

8. References

Androsova, E.I. Antarctic and Subantarctic bryozoans // Soviet Antarctic Expedition Newsletter.-1973.-No. 87.-P.65-69. (in Russian)

Averintsev, V.G.. Ecology of sublittoral polychaetes in the Davis Sea // Animal Morphology, Systematics and Evolution.-L.,1978.-P.41-42. (in Russian)

Averintsev, V.G.. Seasonal variations of sublittoral polychaetes in the Davis Sea // Marine Fauna Studies.-L.,1982.-Vol.. 28(36).-P.4-70. (in Russian)

Barbroud C. & Weimerskirch H. 2001. Emperor Penguins and climate change. Nature, 411: 183 – 185.

Budylenko, G.A., and Pervushin, A.S. The migration of finwhales, sei whales and Minke whales in the Southern Hemisphere // Marine Mammals: Proceedings of VI All-Union Meeting.-Kiev, 1975.-Part.1.-P.57-59. (in Russian)

Bushueva, I.V. A new Acanthonotozommella species in the Davis Sea (East Antarctica) // Zool. Zhurn.-1978.-Vol.57, issue 3.-P.450-453. (in Russian)

Bushueva, I.V. A new Pseudharpinia (Amphipoda) species in the Davis Sea (Antarctica) // Zool. Zhurn.-1982.-Vol.61, issue.8.-P.1262-1265.

Bushueva, I.V. Some peculiarities of off-shore amphipod (Gammaridea) distribution in the Davis Sea (East Antarctica) // Hydrobiology and Biogeography of Cold and Moderate World Ocean Waters in the Off-shore Zone: Report Abstracts.-L.,1974.-P.48-49. (in Russian)

Bushueva, I.V. Some peculiarities of Paramola walkeri ecology in the Davis Sea (East Antarctica) / / Off-shore Biology: Abstracts of Reports Presented at the All-Union Conference. - Vladivostok,1975.-P.21-22. (in Russian)

Chernov, A., Mizin, Yu. 2001. Avifauna observations at Mirny Station during RAE 44 (1999-2000) — The State of the Antarctic Environment as Shown by Real-time Data from Russia's Antarctic Stations. — SPb: AARI. (in Russian)

Doroshenko, N.V. The distribution of Minke whales (Balaenoptera acutorostrata Lac) in the Southern Hemisphere // V All-Union Meeting on Marine Mammal Research: Report Abstracts. - Makhachkala, 1972.-Part1.-P.181-185. (in Russian)

Egorova, E.N. Biogeographic composition and possible development of gastropods and bivalves in the Davis Sea, // Soviet Antarctic Expedition Newsletter.-1972.-No. 83.-P.70-76. (in Russian)

Egorova, E.N. Mollusks of the Davis Sea (East Antarctica).- L.:Nauka, 1982.-144 pp. - (Marine

Fauna Research; No. 26(34). (in Russian)

Egorova, E.N. Zoogeographic composition of the mollusk fauna in the Davis Sea (East Antarctica) // Mollusks. Major Results of the Study: VI All-Union Mollusk Research Meeting.- L.,1979.-Vol.6.-P..78-79. (in Russian)

Gavrilo, M.V., Chupin, I.I., Mizin, Yu.A., and Chernov A.S. 2002. Study of the Biological Diversity of Antarctic Seabirds and Mammals. – Report on Antarctic Studies and Research under the World Ocean Federal Targeted Program. SPb: AARI (unpublished). (in Russian)

Gruzov, E.N. Echinoderms in coastal biocenoses of the Davis Sea (Antarctica) // Systematics, Evolution, Biology, and Distribution of Modern and Extinct Echinoderms.-L.,1977.-P.21-23. (in Russian)

Kamenev, V.M. Adaptive peculiarities of the reproduction cycle of some Antarctic birds. - Body Adaptation to Far North Conditions: Abstracts of Reports Presented at the All-Union Meeting. Tallinn, 1984. P. 72-76. (in Russian)

Kamenev, V.M. Antarctic petrels of Haswell Island // Soviet Antarctic Expedition Newsletter.-1979.-No. 99.-P.78-84. (in Russian)

Kamenev, V.M. Ecology of Adelie penguins of the Haswell Islands // Soviet Antarctic Expedition Newsletter. 1971. No. 82. P. 67-71. (in Russian)

Kamenev, V.M. Ecology of Cape and snow petrels. - Soviet Antarctic Expedition Newsletter. 1988. No. 110. P. 117-129. (in Russian)

Kamenev, V.M. Ecology of Emperor penguins of the Haswell Islands. – The Adaptation of Penguins. M., 1977. P. 141-156. (in Russian)

Kamenev, V.M. Ecology of Wilson's storm petrels (Oceanites oceanicus Kuhl) on the Haswell Islands // Soviet Antarctic Expedition Newsletter. 1977. No. 94. P. 49-57. (in Russian)

Kamenev, V.M. Protected Antarctica. – Lecturer's Aid. L.: Znanie RSFSR, 1986. P. 1-17. (in Russian)

Kamenev, V.M. The Antarctic fulmar (Fulmarus glacialoides) of the Haswell Islands // Soviet Antarctic Expedition Newsletter. - 1978. No. 98. P. 76-82. (in Russian)

Korotkevish, E.P. 1959. The bids of East Antarctica. – Arctic and Antarctic Issues. – No. 1. (in Russian)

Korotkevish, E.P. 1960. By radio from Antarctica. — Soviet Antarctic Expedition Newsletter. - ¹ 20-24. (in Russian)

Krylov, V.I., Medvedev, L.P. The distribution of the Ceteans in the Atlantic and South Oceans // Soviet Antarctic Expedition Newsletter.-1971.-No. 82.-P.64-66. (in Russian)

Makushok, V.M. 1959. Biological takings and observations at the Mirny Observatory in 1958. — Soviet Antarctic Expedition Newsletter. – No. 6. (in Russian)

Minichev, Yu.R. Opisthobranchia (Gastropoda, Opisthobranchia) of the Davis Sea // Marine Fauna Research.-L.,1972.-Vol.11(19).-P.358-382. (in Russian)

Mizin, Yu.V. 2004. Report on the Ecological and Environmental Research Program Conducted by RAE 48 at the Mirny Observatory – SPb: AARI, unpublished. (in Russian)

Popov, L.A., Studenetskaya, I.R. Ice-based Antarctic seals // The Use of the World Ocean Resources for Fishery Needs. An overview by the Central Research Institute of Fishery Information and Technical Studies. Series. 1.- M., 1971. Issue 5.-P.3-42. (in Russian)

Prior, M.E. 1964. Observations of Emperor penguins (Aptenodytes forsteri Gray) in the Mirny area in 1962. Soviet Antarctic Expedition Newsletter. – No. 47. (in Russian)

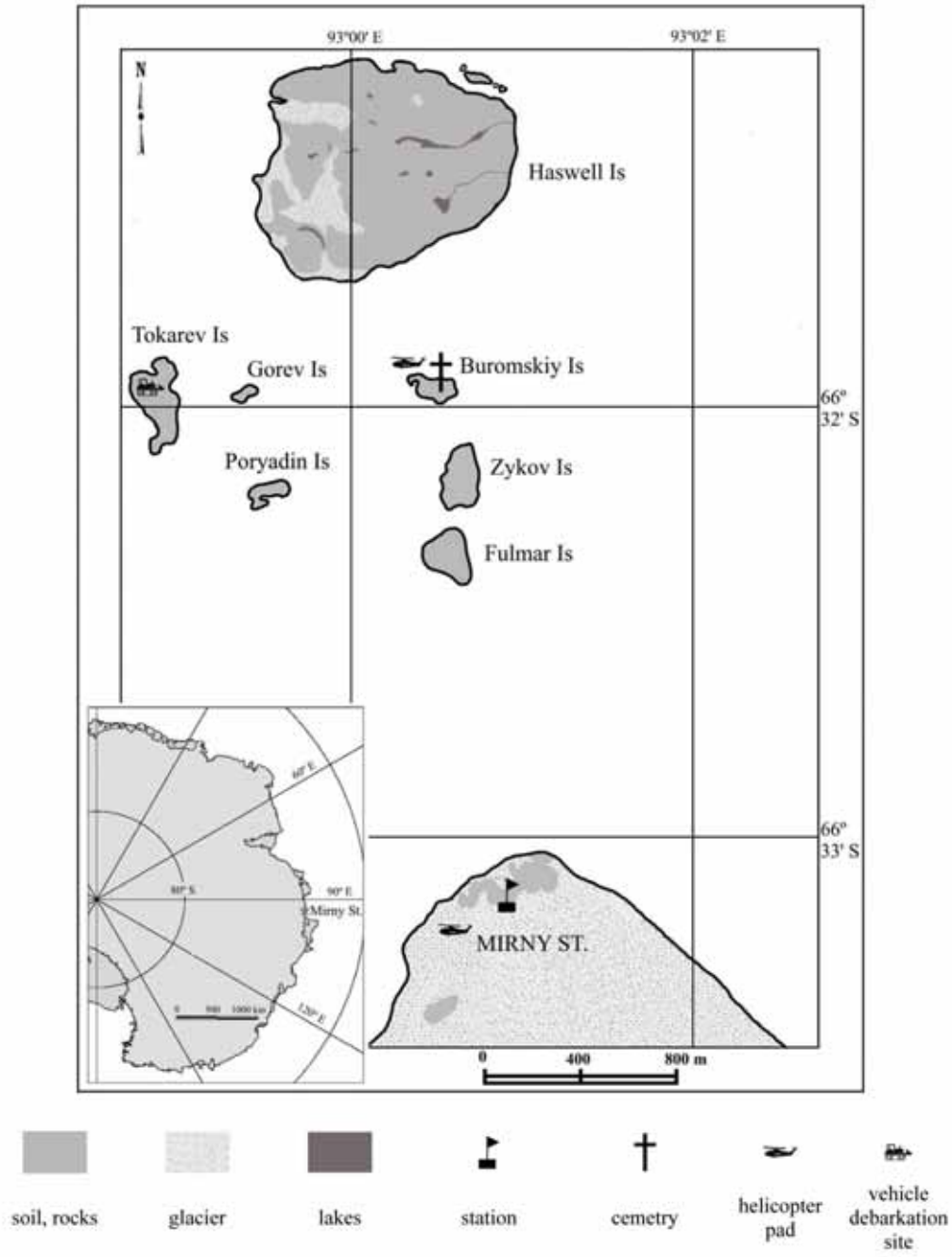
Pushkin, A.F. Some ecological and zoogeographic peculiarities of the Pantopoda fauna in the Davis Sea // Hydrobiology and Biogeography of Cold and Moderate World Ocean Waters in the Off-shore Zone: Report Abstracts.- L.,1974.-P.43-45. (in Russian)

Splettstoesser J.F., Maria Gavrilo, Carmen Field, Conrad Field, Peter Harrison, M. Messicl, P. Oxford, F. Todd 2000. Notes on Antarctic wildlife: Ross seals *Ommatophoca rossii* and Emperor penguins *Aptenodytes forsteri*. New Zealand Journal of Zoology, 27: 137-142.

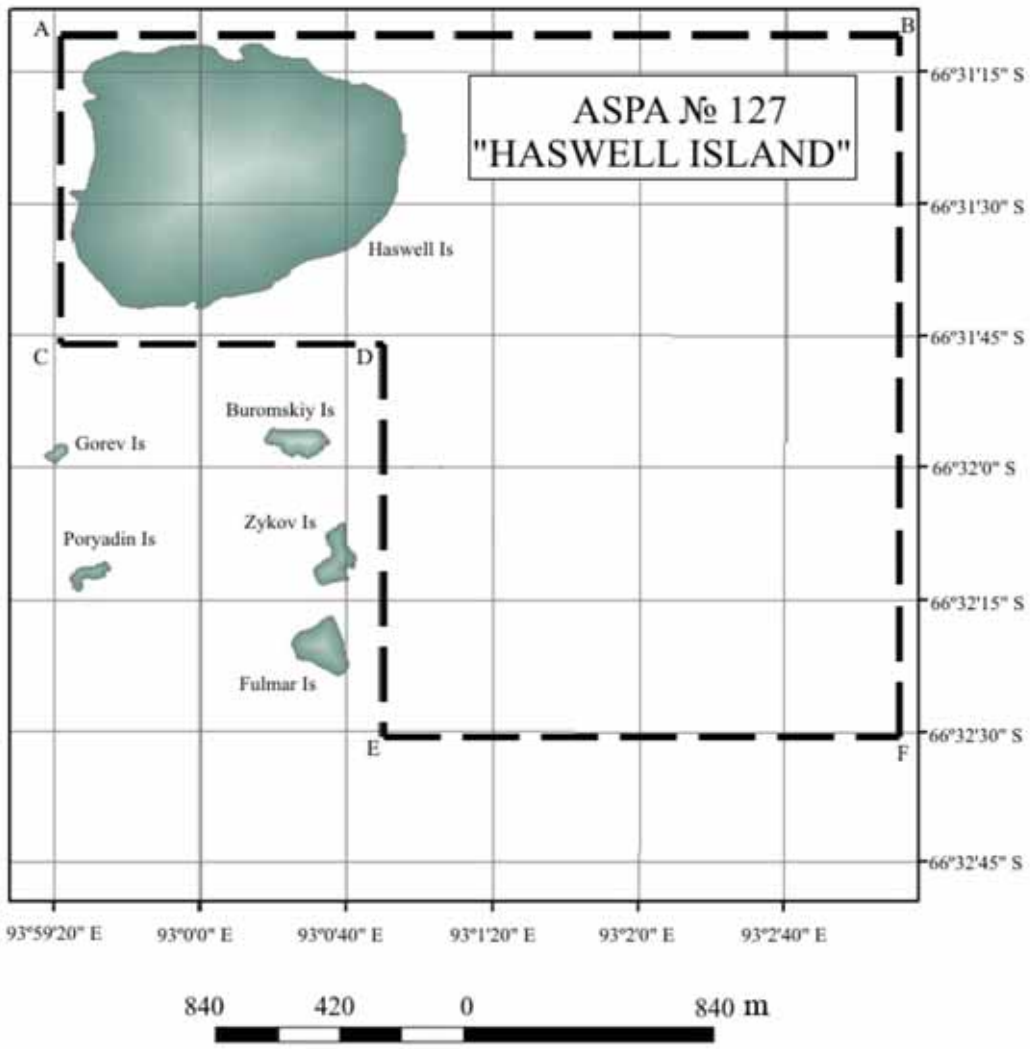
Stepaniants, R.D. Coastal hydrozoans of the Davis Sea (materials of the 11th Soviet Antarctic Expedition, 1965/66) // Marine Fauna Research.- L.,1972.-Vol.11(19).-P.56-79. (in Russian)

Final Report of the Twenty Second Antarctic Treaty Consultative Meeting (Tromsö, Norway, May 25 – June 5, 1998). [Oslo, Royal Ministry of Foreign Affairs], P. – 93 – 130. (in Russian).

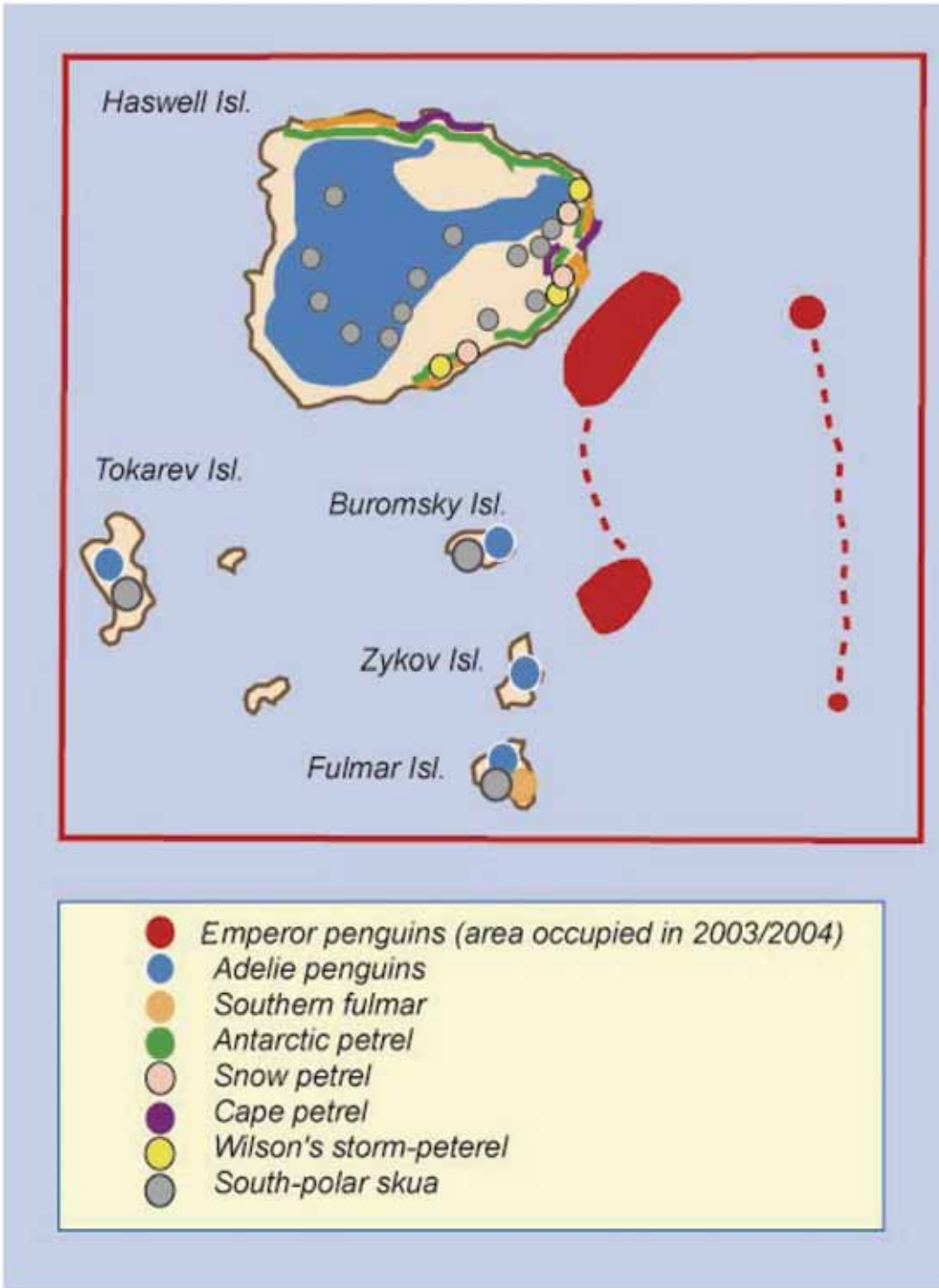
Map 1: Location of the Haswell Islands, Mirny Station, and logistic activity sites.



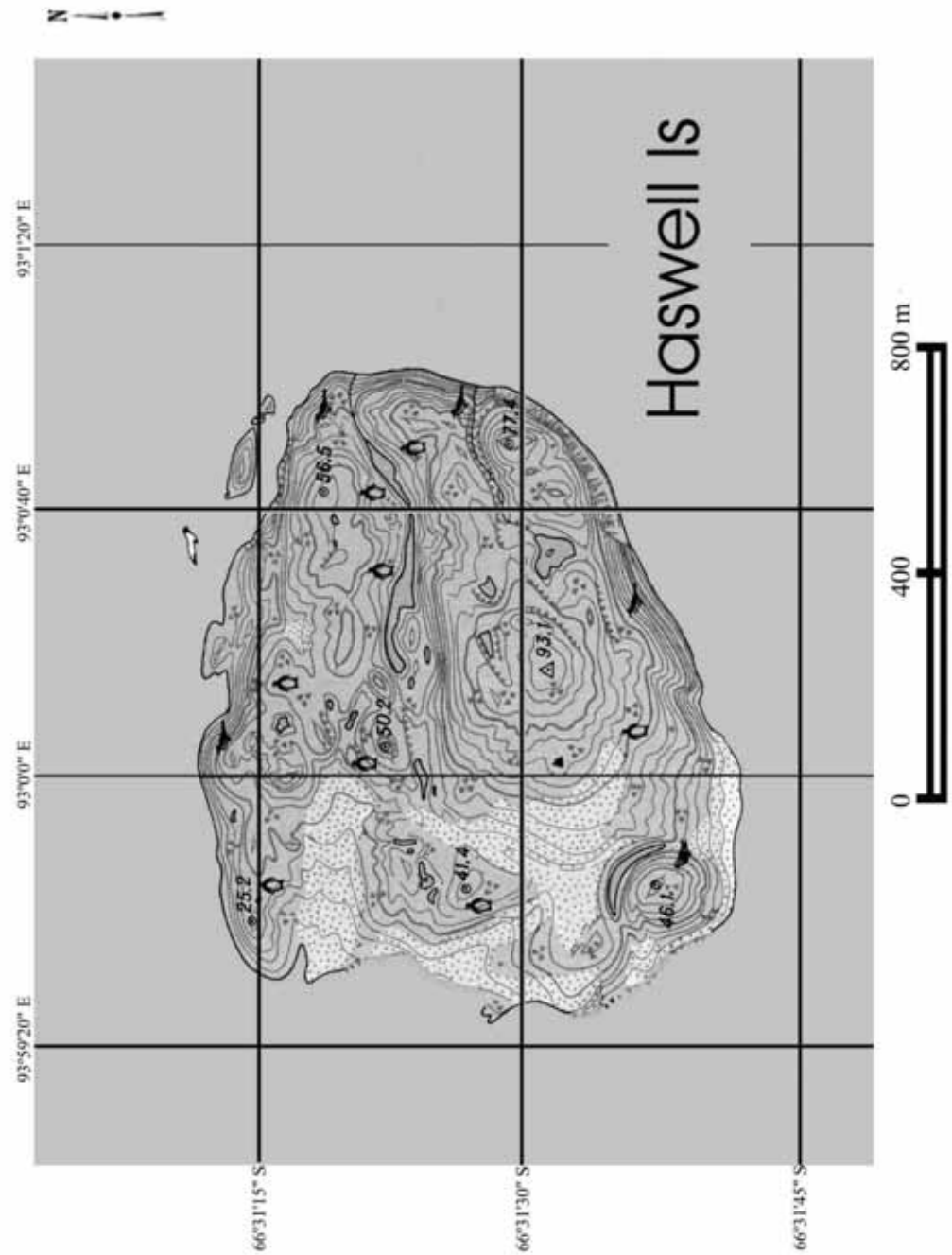
Map 2: Boundaries of Antarctic Specially Protected Area 127, Haswell Island.



Map 3: Location of breeding seabird colonies.



Map 4: Topographic map of Haswell Island.



Management Plan for Antarctic Specially Protected Area No. 131

CANADA GLACIER, LAKE FRYXELL, TAYLOR VALLEY, VICTORIA LAND

1. Description of values to be protected

An area of 1 km^2 to the east side of Canada Glacier was originally designated in Recommendation XIII-8 (1985) as SSSI No. 12 after a proposal by New Zealand on the grounds that it contains some of the richest plant growth (bryophytes and algae) in the southern Victoria Land Dry Valleys. As such, the Area is of exceptional intrinsic ecological value, and is also of scientific value to botanists, zoologists and microbiologists. The Area is designated primarily to protect the site's ecological values. It is also valuable as a reference site for other dry valley ecosystems.

The boundaries of this site have been changed such that the Area now includes biologically rich communities that were previously excluded. The Area comprises sloping ice-free ground with summer ponds and small meltwater streams draining from the Canada Glacier to Lake Fryxell. Most of the plant growth occurs in a flush area close to the glacier in the central part of the Area. The composition and distribution of the plant communities in the Area are correlated closely with the water regime. Thus, water courses and water quality are important to the values of the site. The Area is unusual in that it receives more consistent water flows compared with many other parts of the south Victoria Land Dry Valleys, and is sheltered from strong winds by the nearby 20 m glacier face.

The Area has been well-studied and documented, which adds to its scientific value. However, the plant communities are fragile and vulnerable to disturbance and destruction by trampling and sampling. Damaged areas will be slow to recolonise. Sites damaged at known times in the past have been identified, which are valuable in that they provide one of the few areas in the Dry Valleys where the long-term effects of disturbance, and recovery rates, can be measured.

The Area requires long-term special protection because of its exceptional moss communities for the south Victoria Land Dry Valleys and thus ecological importance; its scientific values; the limited geographical extent of the ecosystem; the vulnerability of the Area to disturbance through trampling, sampling, pollution or alien introductions; and in view of the existing and increasing pressure from scientific, logistic and tourist activities in the region.

2. Aims and objectives

Management at Canada Glacier aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem and elements of the ecosystem in particular moss communities 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 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:

- 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.
- 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 in the Taylor Valley that are within 20 km of the Area.
- Brightly coloured markers, clearly visible from the air and posing no significant threat to the environment, shall be placed to mark the helicopter landing pad.
- Wind direction indicators should be erected close to the designated helicopter landing site when necessary and removed when no longer required.
- 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 shall consult together with a view to ensuring these steps are carried out.
- Up to date Management Plans, maps and other relevant information shall be made available on National Programme websites.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map A: Canada Glacier, Taylor Valley, location map. Map specifications:
  Projection: Lambert conformal conic;
  Standard parallels: 1st 79° 18' 00" S; 2nd 76° 42' 00"S
  Central Meridian: 162° 30' 00" E Latitude of Origin: 78° 01' 16.2106" S;
  Spheroid: WGS84.
- Inset: McMurdo Dry Valleys and Ross Island region, showing the location of McMurdo Station (US) and Scott Base (NZ), and the location of the other specially protected areas in the Dry Valleys (Barwick Valley, Victoria Land, ASPA No. 123, and Linnaeus Terrace, Asgaard Range, Victoria land, ASPA No. 138).
- Map B: Canada Glacier, topographic map. Map specifications are the same as those for Map A. Contours are derived from the digital elevation model used to generate the orthophotograph in Map D. Precise area of moist ground associated with the flush is subject to variation seasonally and inter-annually.
- Map C: Canada Glacier, topographic map showing vegetation density map. Map specifications are the same as those for Map B. Vegetation density mapped and mummified seals identified.

- Figure 1: Perspective view of the Canada Glacier protected area, combining orthophoto and Landsat images. The perspective is from an elevation of 485 m (1600 ft), 1.1 km out from the Area at a bearing of 95° SE.

6. Description of the Area

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

General description

Canada Glacier is situated in the Taylor Valley, in the southern Victoria Land Dry Valleys. The designated Area encompasses most of the glacier forefield area on the east side of the lower Canada Glacier, on the north shore of Lake Fryxell (77°37'S, 163°03'E: Maps A and B). It comprises gently to moderately sloping ice-free ground at an elevation of 20m to 220m with seasonal melt water ponds and streams draining the Canada Glacier into Lake Fryxell.

Boundaries

The south boundary of the Area is defined as the shoreline of Lake Fryxell, to the water's edge, extending from where the Canada Glacier meets Lake Fryxell to about 1 km northeast (77°36'49.5"S 163°04'52.5"E). The southeast corner is near the neck of a small peninsula extending into Lake Fryxell. The peninsula, outside of the Area, is marked by a large rock (split) surrounded by a circle of rocks which was a benchmark for the 1985 NZ survey of the original SSSI. A wooden post marking Dry Valley Drilling Project Site 7 (1973) is about 10 m to the NW of this point. A moraine ridge extending from the southeast corner upward in a northerly direction defines the eastern boundary of the Area. A cairn is located on a knoll on this ridge 450m from the southeast corner point (77°36'40.9"S 163°04'23.9"E). The ridge dips sharply before joining the featureless slope of the main Taylor Valley wall: the northeast corner of the Area is in this dip and will be marked by a cairn.

From the northeast cairn, the northern boundary slopes gently upwards and west for 1.7km to Canada Glacier, where a large rock marks the northwest corner of the Area (77°36.434'S E162°59.772'E). The rock is situated on a small knoll at an elevation of 220m, approximately 300m from where the glacier emerges into the Taylor Valley. The western boundary follows the glacier edge for about 1km, down a slope of lateral moraine of fairly even gradient to the lake (77°37'12.2"S; 163°02'98.4"E).

Biology

The central flush area (Maps C and D), containing the richest stands of vegetation, is close to the glacier edge to the north and south of a small, shallow pond. The flush area is gently sloping and very moist with numerous small ponds and rivulets in the summer. The slopes above this area are better drained, but vegetation colonises several small stream channels which extend parallel to the glacier from the upper boundary of the Area down to the flush. Undulating moraines assist accumulation of persistent snow patches on this slope, which may also provide moisture for plant growth. Stream channels, and associated vegetation, become less obvious with distance from the glacier. These slopes and the central flush are drained to the Southeast by Canada Stream, one of three streams which dominate the water input to Lake Fryxell. From the 31/12/03 to the 31/12/04 the average discharge rate from the Canada Glacier Stream (F1) was 11.5 l/s (min = 0 l/s and max = 130.23l/s). The average water temperature over this time was 1.02°C (min = -9.1°C and max = 11.65°C) (*http://www.mcmlter.org/*).

Three moss species have been identified from the flush area: *Bryum subrotundifolium*, and *Pottia heimii* dominate with rare occurrences of *Bryum pseudotriquetrum.* Lichen growth in the Area is inconspicuous, but two epilithic lichens, *Carbonea capsulata* and an unknown species of *Sarcogyne*, and *Lecanora expectans* and *Caloplaca citrina* may be found in a small area near the outflow of the pond near Canada Glacier. Chasmoendolithic lichens occur in many boulders. Over 37 species of freshwater algae have been described at the site, predominantly from the Cyanophyta. The upper part of Canada Stream superficially appears sparse in algal growth. However, abundant encrusting epilithophytes grow on the undersides of stones and boulders. Two algae, *Prasiola calophylla* and *Chamaesiphon subglobosus*, have been observed only in this upper part of the stream. *Prasiola calophylla* growing in dense green ribbons beneath stones in the stream is generally only apparent when stones are overturned. Cyanobacterial mats are extensive in the middle and lower reaches of the stream. Mucilaginous colonies of *Nostoc commune* dominate wetter parts of the central flush, while oscillatoriacean felts cover much of the mineral fines. Epiphytic algae, dominated by *Nostoc,* are common over the surface of *Bryum argenteum* and *Pottia heimii*. The lower stream is similar in floral composition, although it is notable in that the alga *Tribonema elegans* is abundant while absent further upstream: this is the first record of this alga from Antarctica. *Phormidium* and *Gloeocapsa* species are common throughout the stream-course.

Invertebrates from six phyla have been described in the Area: the three main groups are Rotifera, Nematoda and Tardigrada, with Protozoa, Platyhelminthes, and Arthropoda also present.

Past human activity

Evidence of human activities is commonplace within the Area. The main forms of damage evident at sites of vegetation are paths, footprints and removal of core samples and larger clumps from moss turfs. A number of old markers exist in the flush area.

A plastic greenhouse was erected within the Area close to the flush from 1979 to 1983 for research and experimental growth of garden vegetables. The structure was removed at the end of each season except for 1983, when it was destroyed by a winter storm. Remains of the greenhouse found in the Area have been removed. The first New Zealand hut at Canada Glacier was relocated to a second site in 1989, and removed completely in 1995–96. The second site is now designated for essential camping associated with research, marked on Maps B and C. Paths marked by lines of rocks, areas cleared for use as campsites, an old helicopter pad, and several low rock structures associated with the first hut site have now been remediated. A series of at least four shallow pits (~1 m in depth) were dug close to the old hut site. The second hut site comprised two small buildings, several new campsites, and a new helicopter pad, which remains as the current helicopter landing site. The second hut site is the present preferred camping site.

6(ii) Restricted zones within the Area

None.

6(iii) Structures within and near the Area

Paths exist between the designated camp site and the glacier edge, crossing a moist area of plant growth, and between the lake shore and the weir on Canada Stream. An access route between Lake Hoare and Lake Fryxell runs just above the northern boundary.

A rock weir was constructed in the constricted part of Canada Stream in the 1981/1982 season and was fully removed at the end of the season. In 1990 a more substantial weir and 9-inch Parshall flume were installed nearby (Maps Band C). The flume is made of black fibreglass. The weir consists of polyester sandbags filled with alluvium from near the stream channel: areas disturbed

during construction were restored and after one season were not evident. The upstream side of the weir is lined with vinyl-coated nylon. A notch has been built into the weir for relief in case of high flow. Clearance of seasonal snow from the channel has been necessary to prevent water from backing up at the weir. Data logging instrumentation and batteries are stored in a plywood crate located nearby on the north side of the stream. The weir is maintained by the Long Term Ecological Research project.

Signposts and cairns mark the Area boundaries.

The US Fryxell Hut (20m ASL) is located 1.5 km to the east, and Hoare Hut (65m ASL) is located 3km to the west of the Area (Map A).

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

The nearest protected areas to Canada Glacier are Linnaeus Terrace (ASPA No. 138) 47 km west in the Wright Valley, and Barwick Valley, Victoria Land (ASPA No. 123) 50 km to the NW (Inset, Map A).

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:

- 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;
- the actions permitted will not jeopardise the ecological or scientific values of the Area;
- access to any zone marked as possessing medium density or higher vegetation (Map C) should be carefully considered and special conditions to access such areas should be attached to the Permit;
- any management activities are in support of the aims of the Management Plan;
- the actions permitted are in accordance with the 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;
- permits 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 or by helicopter. Helicopter access should be from south of the line marked on the accompanying site maps, and overflight within the Area less than 100 m Above Ground Level (AGL) north of this line is prohibited. Helicopters shall land only at the designated site (163° 02' 53" E, 77° 36' 58" S: Map B) and overflight of the Area should generally be avoided. Exceptions to these flight restrictions, which will only be granted for an exceptional scientific or management purpose, must be specifically authorised by Permit. Use of helicopter smoke grenades within the Area is prohibited unless absolutely necessary for safety, and then these should be retrieved. Visitors, pilots, air crew, or passengers en route elsewhere on helicopters, are prohibited from moving on foot beyond the immediate vicinity of the designated landing and camping site unless specifically authorised by a Permit.

Pedestrians travelling up- or down-valley shall not enter the Area without a Permit. Permitted visitors entering the Area are encouraged to keep to established routes where possible. Visitors should avoid walking on visible vegetation or through stream beds. Care should be exercised

walking in areas of moist ground, 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, and step on larger stones when stream crossing is necessary. Care should also be taken of salt-encrusted vegetation in drier areas, which can be inconspicuous. 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.

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.

In view of the importance of the water regime to the ecosystem, activities should be conducted so that disturbance to water courses and water quality is minimised. Activities occurring outside of the Area (e.g. on the Canada Glacier) which may have the potential to affect water quality should be planned and conducted taking possible downstream effects into account. Those conducting activities within the Area should also be mindful of any downstream effects within the Area and on Lake Fryxell.

7(iii) Installation, modification or removal of structures

Any structures erected or scientific equipment installed within the Area are to be specified in a Permit. Scientific equipment shall be 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. Permanent installations are prohibited.

7(iv) Location of field camps

Nearby permanent camps outside of the Area should be used as a base for work in the Area. Camping at the designated campsite (Maps B and C) may be permitted to meet specific essential scientific or management needs.

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 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 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 protective measures.
- Any specific sites of long-term monitoring shall be appropriately marked.
- To help maintain the ecological and scientific values of the plant communities found 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 camping and sampling equipment and markers — before entering the Area.

7(x) Requirements for reports

Parties should ensure that the principal holder for each permit issued submit 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.

8. Bibliography

Broady, P.A. 1982b. Taxonomy and ecology of algae in a freshwater stream in Taylor Valley, Victoria Land, Antarctica. *Archivs fur Hydrobiologia Supplement 63*, 3, Algological Studies, 32, 331-349.

Conovitz, Peter A., Diane M. McKnight, Lee H. MacDonald, Andrew G. Fountain & Harold R. House. 1998. Hydrologic Processes Influencing Streamflow Variation in Fryxell Basin, Antarctica. *Ecosystem Processes in a Polar Desert: The McMurdo Dry Valleys, Antarctica. Antarctic Research Series* 72: 93-108.

Lewis, K.J., Fountain, A.G. & Dana, G.L. 1999. How important is terminus cliff melt? A study of the Canada Glacier terminus, Taylor Valley, Antarctica. *Global and Planetary Change*, 22(1-4), p.105-115. International Association of Meteorology and Atmospheric Sciences (IAMAS)/International

Association of Physical Sciences of the Ocean (IAPSO) joint assembly, international symposium on Glaciers of the Southern Hemisphere, Melbourne, Victoria, Australia, July 7-9, 1997, edited by A.G. Fountain, A. Ruddell and G. Kaser. Publisher: Elsevier, Amsterdam, Netherlands.

Lewis, K.J., Fountain, A.G. & Dana, G.L. 1998. Surface Energy Balance and Meltwater Production for a Dry Valley Glacier, Taylor Valley, Antarctica. *International Symposium on Antarctica and Global Change: Interactions and Impacts, Hobart, Tasmania, Australia, July 13-18, 1997*. Papers. Edited by W.F. Budd, et al; Annals of glaciology, Vol.27, p.603-609. United Kingdom

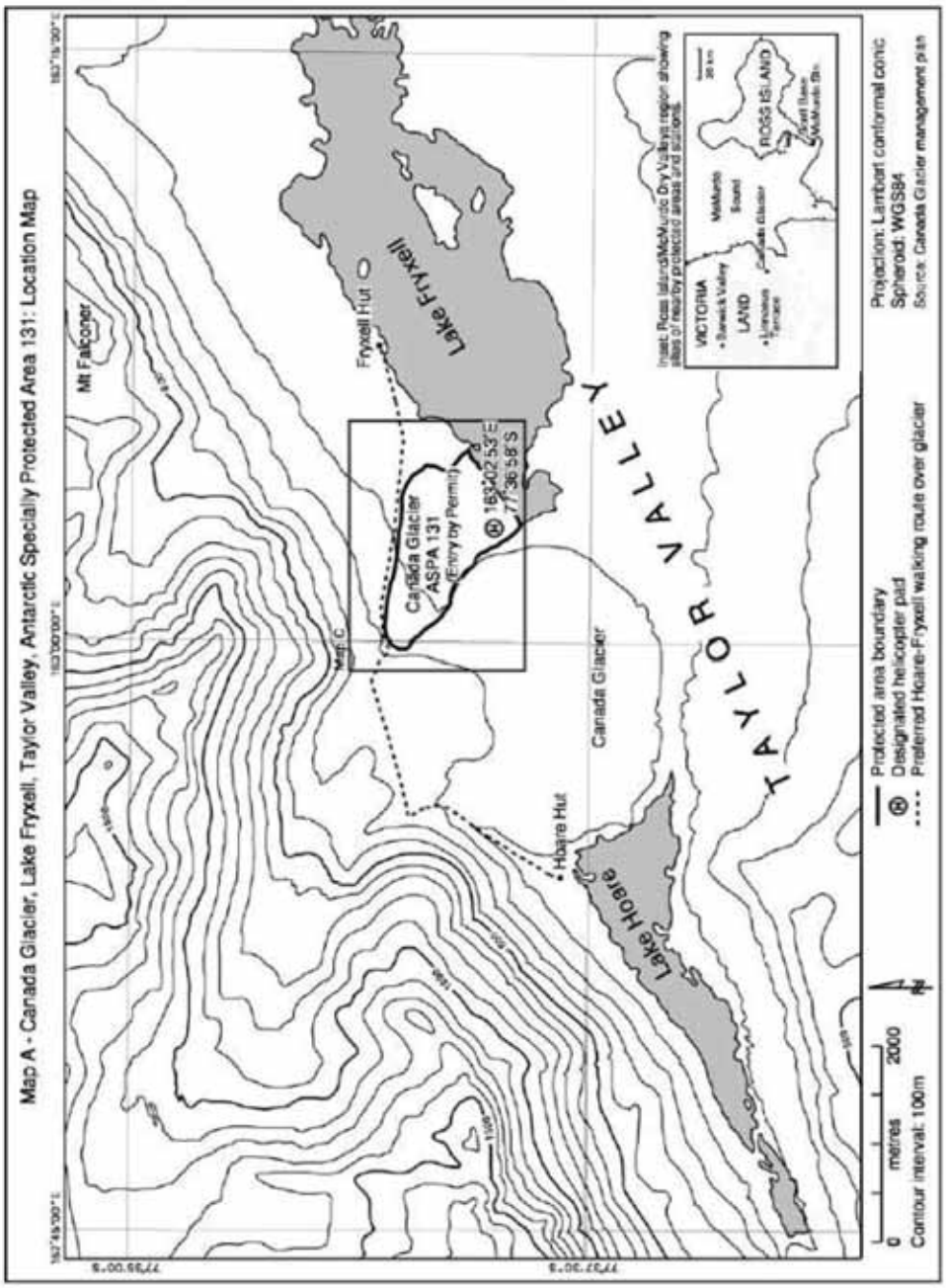
McKnight, D.M. & Tate, C.M. 1997. Canada Stream: A Glacial Meltwater Stream in Taylor Valley, South Victoria Land, Antarctica. *Journal of the North American Benthological Society*, 16(1), p.14-17.

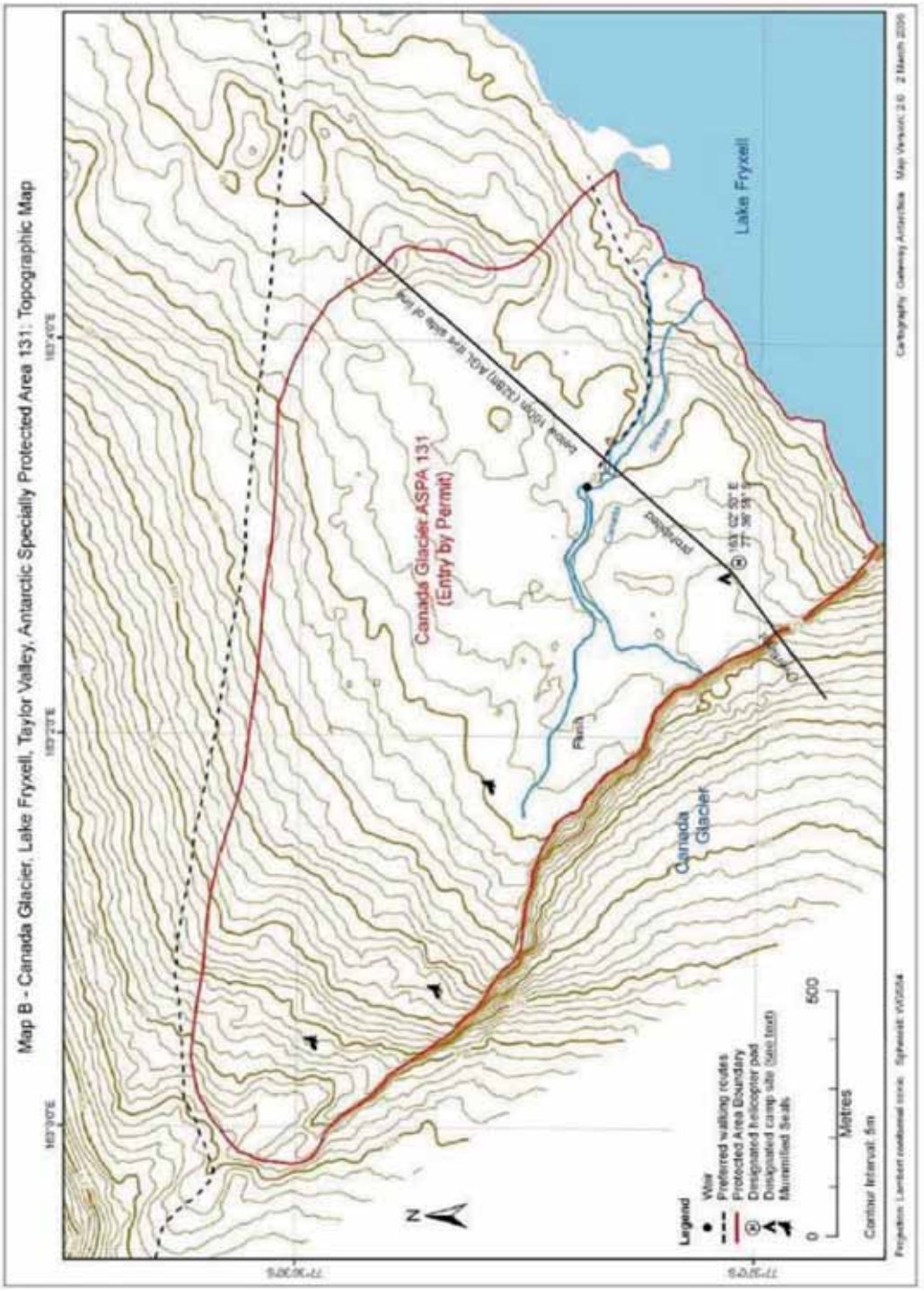
Seppelt, R.D., Green, T.G.A. 1998. A Bryophyte Flora for Southern Victoria Land, Antarctica. *New Zealand Journal of Botany.* Vol 36, 617-635

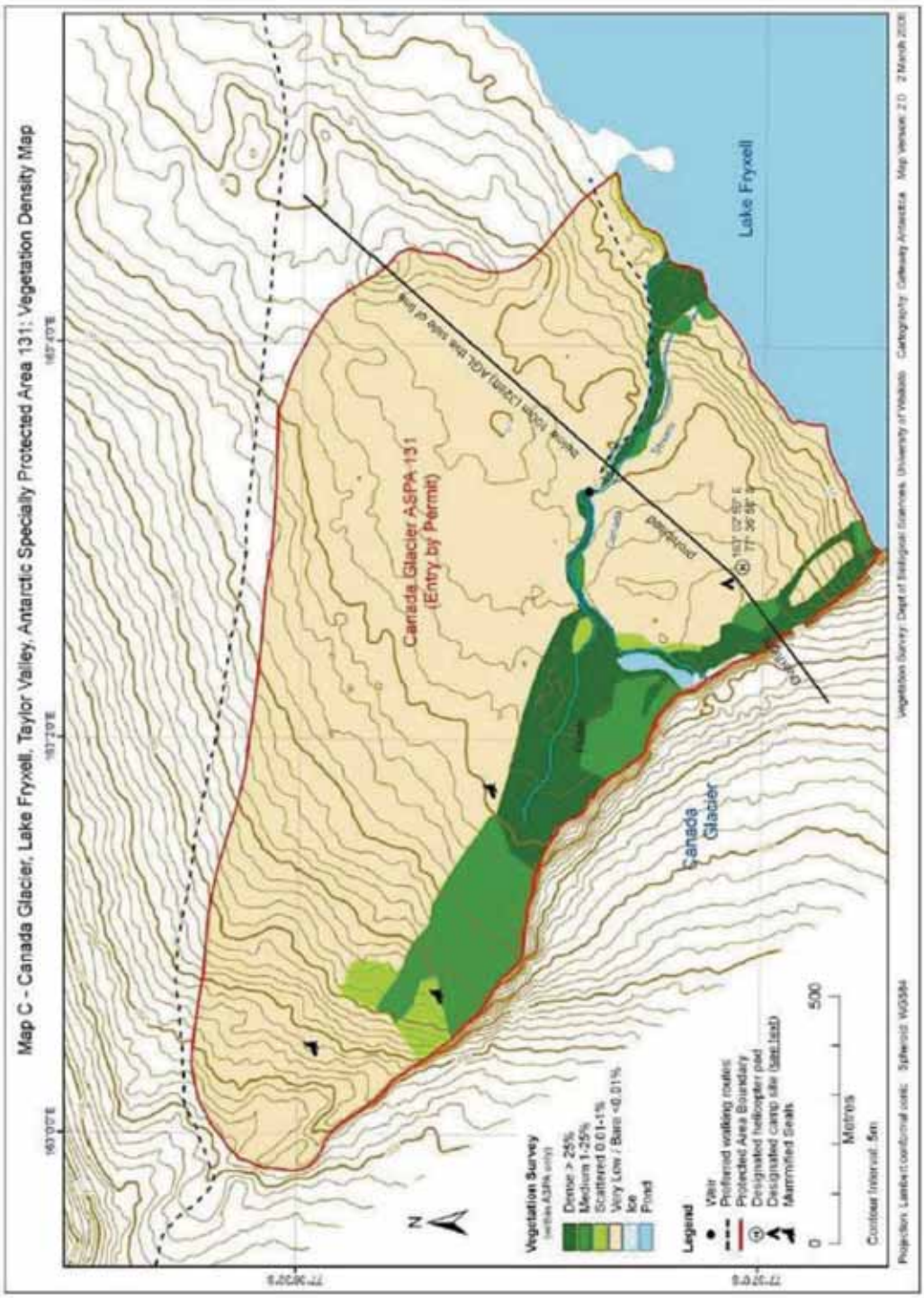
Sjoling, S. & Cowan, D.A. 2000. Detecting Human Bacterial Contamination in Antarctic Soils. *Polar Biology*, 23(9), p.644-650.

Skotnicki, M.L., Ninham, J.A. & Selkirk, P.M. 1999. Genetic Diversity and Dispersal of the Moss *Sarconeurum glaciale* on Ross Island, East Antarctica. *Molecular Ecology*. Vol 8, Issue 5, 753-762

Vandal, G.M., R.P. Mason, D.M. McKnight & W. Fitzgerald. 1998. Mercury speciation and distribution in a polar desert lake (Lake Hoare, Antarctica) and two glacial meltwater streams. *Science of the Total Environment*, 213(1-3): 229-237.


Map A - Canada Glacier, Lake Fryxell, Taylor Valley, Antarctic Specially Protected Area 131: Location Map
Mt Falconer
Fryxell Hut
Lake Fryxell
Canada Glacier
ASPA 131
(Entry by Permit)
163°02'53"E
77°36'58"S
Map C
Canada Glacier
Hoare Hut
Lake Hoare
TAYLOR VALLEY
Inset: Ross Island/McMurdo Dry Valleys region showing sites of nearby protected areas and stations
VICTORIA LAND
ROSS ISLAND
McMurdo Sound
Protected area boundary
Designated helicopter pad
Preferred Hoare-Fryxell walking route over glacier
0 metres 2000
Contour interval: 100m
Projection: Lambert conformal conic
Spheroid: WGS84
Source: Canada Glacier management plan


Map B - Canada Glacier, Lake Fryxell, Taylor Valley, Antarctic Specially Protected Area 131: Topographic Map
Canada Glacier ASPA 131
(Entry by Permit)
Lake Fryxell
Canada Glacier
Legend
Weir
Preferred walking routes
Protected Area Boundary
Designated helicopter pad
Designated camp site (total limit)
Mummified Seals
N
0
500
Metres
Contour Interval: 5m


Map C - Canada Glacier, Lake Fryxell, Taylor Valley, Antarctic Specially Protected Area 131: Vegetation Density Map
Canada Glacier ASPA 131
(Entry by Permit)
Lake Fryxell
Canada Glacier
Vegetation Survey
Dense > 25%
Medium 1-25%
Scattered 0.01-1%
Very Low / Bare <0.01%
Ice
Pond
Legend
Weir
Preferred walking routes
Protected Area Boundary
Designated helicopter pad
Designated camp site (see text)
Mummified Seals
0
500
Metres
Contour Interval: 5m
N

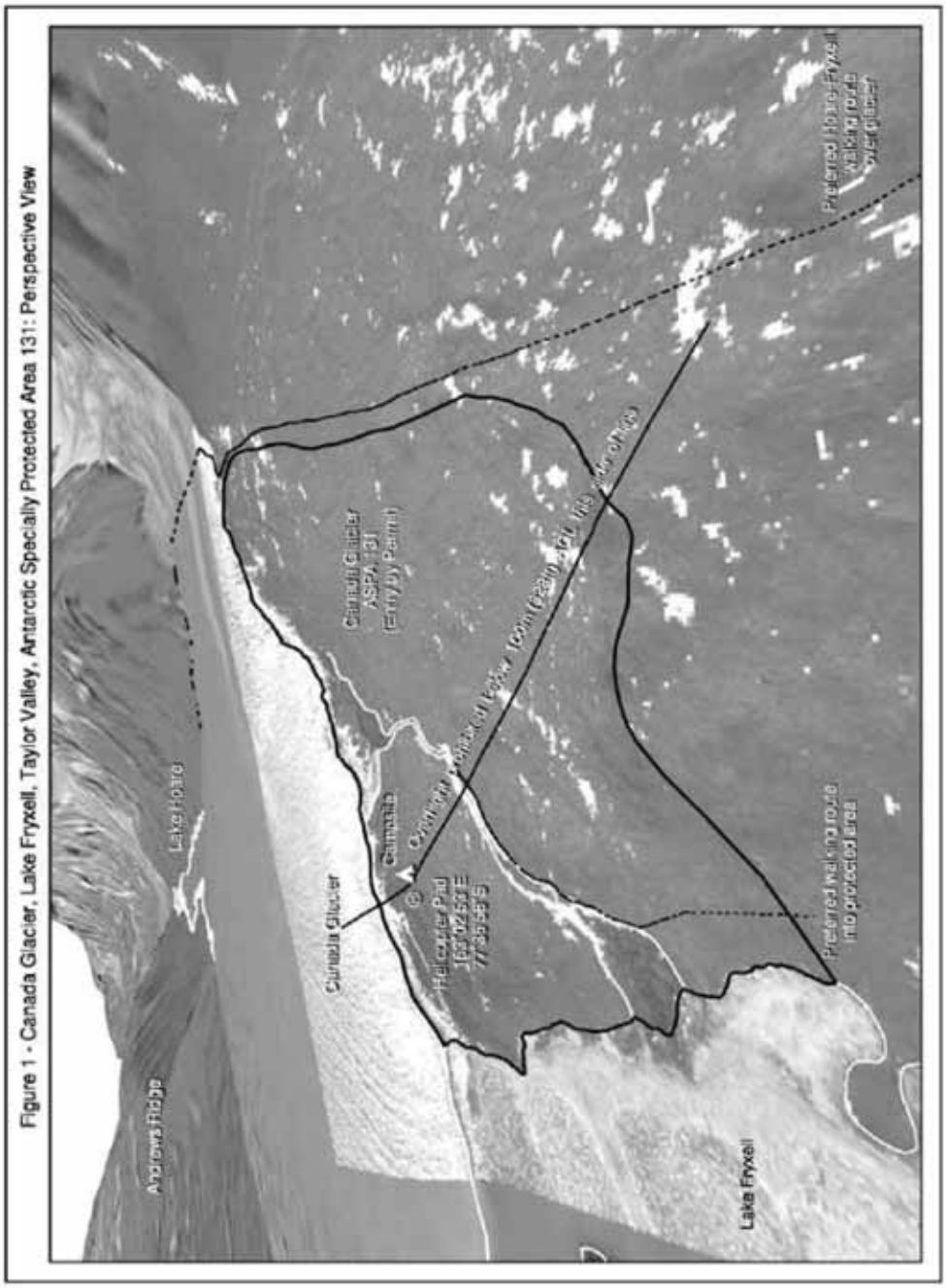


Figure 1 - Canada Glacier, Lake Fryxell, Taylor Valley, Antarctic Specially Protected Area 131: Perspective View
Andrews Ridge
Lake Hoare
Canada Glacier
Canada Glacier ASPA 131 (Entry by Permit)
Canada
Helicopter Pad
Preferred walking route into protected area
Lake Fryxell
Preferred Hoare-Fryxell walking route over glacier

Management Plan for Antarctic Specially Protected Area No. 134

CIERVA POINT AND OFFSHORE ISLANDS, DANCO COAST, ANTARCTIC PENINSULA

1. Description of values to be protected

This area was originally designated as SSSI No. 15 in ATCM Recommendation XIII-8, after a proposal by Argentina, as an important example of well developed maritime vegetation having breeding colonies of at least five bird species.

During the XXI Antarctic Treaty Consultative Meeting (Christchurch, 1997), the revised Management Plan for the Area was adopted in accordance with the format established by Annex V and Measure 3 (1997). During the XXV Antarctic Treaty Consultative Meeting (Warsaw, 2002), Annex V having entered into force, the *Site of Special Scientific Interest* No. 15 became, by Decision 1 (2002), *Antarctic Specially Protected Area* No. 134.

The original reasons for the designation of the Area are still relevant. This Area has great scientific value due to its unusual biodiversity, which includes numerous species of birds, flora, and invertebrates. The unique topography of the Area together with the abundance and diversity of the vegetation create highly favourable conditions for the formation of numerous microhabitats which, in turn, support the development of biodiversity and give the Area exceptional aesthetic value.

Long-term research programs could be endangered by accidental human interference, destruction of vegetation and soil, pollution of water bodies, and perturbation of birds, especially during reproductive periods.

2. Aims and objectives

Management of ASPA No. 134 aims to:

- Protect the biodiversity of the Area, avoiding major changes in the structure and composition of communities of flora and fauna;
- Prevent unnecessary human disturbance;
- Allow the development of scientific research that cannot be conducted elsewhere, and the continuance of long-term biological studies established in the Area, as well as the development of any other type of scientific research that does not compromise the values for which the Areas is protected;
- Allow the development of studies and monitoring activities to assess the direct and indirect effects of the activities of the neighbouring station (Primavera Base).

3. Management activities

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

- The Primavera Base staff will be specifically instructed as to the conditions of the Management Plan;

- Movement will be limited to areas free of vegetation, avoiding proximity to fauna, except when otherwise required by scientific projects and the corresponding permits of harmful interference have been obtained;
- Collection of samples will be limited to the minimum required for approved scientific research plans;
- Visits shall be made as necessary to ensure that management and maintenance measures are adequate;
- All signs, as well as other structures erected in the Area with scientific or management objectives, will be adequately secured and maintained in proper conditions;
- Pedestrian paths to research sites will be marked to limit movement.

4. Period of designation

Designated for an indefinite period.

5. Maps

Map 1 shows the general location of ASPA No. 134. Map 2 shows the ASPA in relation to Danco Coast. The shaded area indicates the group of areas that make up ASPA No. 134 (the subtidal marine environment between the continental and insular portions is not included in the ASPA). Map 3 shows the area surrounding Primavera Base in detail, excluded from ASPA No. 134.

6. Description of the Area

6(i) Geographical co-ordinates, limits, and natural features

Cierva Point (lat. 64° 09' 23''S, lon. 60° 57' 17''W[1]) is located on the south coast of Cierva Cove, to the north of Hughes Bay, between the Danco and Palmer Coasts, in the northwestern portion of the Antarctic Peninsula. The site comprises the ice-free area between the southwest coast of Cierva Cove and the northeast coast of Santucci Cove. Also included are Apéndice and José Hernández Islands and the Moss and Penguin Islands, found to the west-southwest of Cierva Point. Although the intertidal zone of each of these areas is included in the Area, the subtidal marine environment is not.

Primavera Base (Argentina) and its associated installations, as well as the beach area utilized for access to the base, are excluded from the Area.

The Area has high species richness of animals and plants, and the abundance of some of these is, in some cases, exceptional.

The cover of mosses, lichens, and grasses is very extensive. The most conspicuous vegetal communities are the associations of dominant lichens, the moss turf dominated by *Polytrichum-Chorisodontium* and the *Deschampsia-Colobanthus* subformation. The moss turves cover areas of more than 100 square metres, with an average depth of about 80 cm. The present flora includes the two Antarctic flowering plant species, 18 moss species, 70 lichen species (two hepatic), as well as 20 species of fungi. The non-marine microalgae, especially on Moss and Penguin Islands, are very abundant with unusual records. Terrestrial arthropods are also very numerous and are occasionally associated with tidal pools in the littoral zone of the Area.

[1] Data corresponding to Primavera Base.

There are twelve species of nesting birds in the Area: Chinstrap Penguin (*Pygoscelis antarctica)*, Gentoo Penguin (*Pygoscelis papua)*, Southern Giant Petrel (*Macronectes giganteus)*, Cape Petrel (*Daption capense)*, Wilson's Storm Petrel (*Oceanites oceanicus)*, Antarctic Shag (*Phalacrocorax. bransfieldensis*), Pale-faced Sheathbill (*Chionis alba)*, Skuas (predominant species *Catharacta maccormickii)*, Kelp Gull (*Larus dominicanus)* and Antarctic Tern *(Sterna vittata)*.

The most numerous colonies correspond to those of the Chinstrap Penguin (*Pygoscelis antarctica)*, Gentoo Penguin (*Pygoscelis papua)*, Wilson's Storm Petrel (*Oceanites oceanicus)*, South Polar skua (*Catharacta maccormickii*) and Kelp Gull (*Larus dominicanus).*

A summary of the estimated number of nesting pairs by species and nesting site is presented in Table 1.

Table 1: Estimated number of nesting pairs by species and Base nesting site.

Species / Nesting Site	CiervaPoint	Apéndice Island	José Hernández Island	Penguin Island	Moss Island
Pygoscelis Antarctica	-	-	550	1500	-
Pygoscelis papua	600	900	-	-	-
Macronectes giganteus		<10	-	-	35
Daption capense	<10	23	-	<5	30
Pagodroma nivea	<5	-	-	-	-
Oceanites oceanicus	1000	1000	100	100	100
Phalacrocorax bransfieldensis	-	-	21	<10	-
Chionis alba	<5	<5	<5	<5	<5
Catharacta sp.	450	<5	<5	<5	10
Larus dominicanus	160	70	15	<10	120
Sterna vittata	45	15	35	-	15

As well, the Area has great aesthetic value. The great diversity in relief and coastal forms, due to the presence of different geologies and a pronounced system of fractures, in addition to an extensive and varied vegetation cover, provide unusual scenic diversity in the Antarctic environment.

6(ii) Restricted zones within the Area

None.

6(iii) Location of structures within the Area

There are no structures within the Area. Primavera Base (Argentina), located to the northwest of Cierva Point and adjacent to the Area, is only open during the summer. It is composed of eight buildings and a place delimited for helicopter landings.

6(iv) Location of other Protected Areas within close proximity

ASPA No. 152, western portion of the Bransfield Strait (Mar de la Flota), in front of Low Island, South Shetland Islands, 90 kilometres northwest of ASPA No. 134; and ASPA No. 153, eastern portion of the Dallmann Bay, in front of the western coast of Brabant Island, Palmer Archipelago, 90 kms west of ASPA No. 134.

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:

- It is only issued for a scientific purpose, in accordance with the objectives of the Management Plan, that cannot be met elsewhere;
- The actions permitted will not jeopardize the natural ecological system of the Area;
- Any management activities (inspection, maintenance, or revision) are in support of the objectives of the Management Plan;
- The actions permitted are in accordance with this Management Plan;
- The permit, or authorised copy, must be carried by the principal investigator authorized to enter the Area;
- A post-visit report is given to the competent national authority mentioned in the permit.

7(i) Access to and movements within the Area

Access to the Area will be by permit issued by a competent authority, and will only be issued for activities which are in accordance with this Management Plan.

There is only one access for helicopters outside of the Area, in the area adjacent to Primavera Base. Helicopters may only land in the specified area to the east-southeast of the Base. The aircraft route to be used is limited to a north approach and departure. The operation of aircrafts over the Area will be carried out, as a minimum requirement, in compliance with that established in Resolution 2 (2004), "Guidelines for the Operation of Aircraft near Concentrations of Birds". As a general rule, no aircraft should fly over the ASPA at less than 610 metres (2000 feet), except in cases of emergency or aircraft security.

Marine access is allowed from any point of the islands included in the Area. Vehicle traffic of any type is not permitted.

Tourism or any other recreational activity is not permitted. Movements within the Area will be carried out avoiding disturbance to the flora and fauna, especially during the breeding season.

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

- Scientific research activities that cannot be conducted elsewhere and that do not jeopardise the ecosystem of the Area;
- Essential management activities, including monitoring;
- If it is considered necessary for scientific or conservation reasons, access to determined bird nesting sites and mammal colonies may include greater restrictions between the end of October and the beginning of December. This period is considered especially sensitive, because it coincides with peaks in egg-laying for nesting birds in the Area.

7(iii) Installation, modification or removal of structures

No additional structures will be built or equipment installed within the Area, except for essential scientific or management activities with appropriate permits.

Any scientific equipment installed in the Area, as well as any sign of the investigation, should be approved by permit and clearly indicated, showing the country, the name of the principal investigator,

and the year of installation. All the installed materials should pose the minimum risk of pollution to the Area or the minimum risk of causing disturbance to the vegetation or to the fauna.

Signs of investigation should not remain after the permit expires. If a specific project cannot be finished within the allowed time period, an extension should be sought that authorizes the continued presence of any object in the Area.

7(iv) Location of field camps

The Parties that utilize the Area will normally have Primavera Base available for lodging. Only tents shall be installed, with the purpose of housing instrumentation or scientific material, or for employees as a base for observation.

7(v) Restriction on material and organisms which may be brought into the Area

No living animals or plant material shall be deliberately introduced into the Area.

No uncooked poultry products shall be introduced.

No herbicides or pesticides shall be introduced into the Area. Any other chemical product, which should be introduced with the corresponding permit, shall be removed from the Area upon conclusion of the activity for which the permit was granted. The use and type of chemical products should be documented, as clearly as possible, for the knowledge of other researchers.

Fuel, food, and other materials are not to be stored in the Area, unless required for essential purposes by the activity authorized in the corresponding permit.

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

Any taking or harmful interference, except in accordance with a permit, is prohibited. When an activity involves taking or harmful interference, these should be consistent with the *SCAR Code of Conduct for the use of Animals for Scientific Purposes* in Antarctica as a minimum requirement.

Information on taking or harmful interference will be exchanged through the System of Information Exchange of the Antarctic Treaty, and its record should be incorporated, at the least, into the *Antarctic Master Directory* or, in Argentina, into the *National Antarctic Data Centre*. The researchers that take samples of any kind will show that they are familiar with previous collections to minimize the risk of possible duplication.

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

Any material from the Area may only be collected and removed from the Area with an appropriate permit. Collection of dead biological specimens for scientific purposes should not exceed such a level that the collection degrades the nutritional base of local scavenger species.

7(viii) Disposal of waste

Any non-physiological waste shall be removed from the Area. Residual waters and domestic residual liquids can be discharged into the ocean, in accordance with Article 5 of Annex III of the Madrid Protocol.

Waste resulting from research activities in the Area can be temporarily stored at Primavera Base until it is removed. Said storage should be carried out in compliance with Annex III to the Madrid Protocol, marked as trash, and appropriately closed to avoid accidental losses.

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

Permits may be granted to enter the Area to conduct biological monitoring and inspection activities, which may include the collection of samples of plants and animals for research purposes, the erection and maintenance of signs, or other management measures. All the structures and markings installed in the Area for scientific purposes, including signs, should be approved in the permit and clearly identified by country, indicating the name of the principal investigator and the year of installation. All signs and structures should be removed when, or before, the permit expires. If a specific project cannot be finished within the allowed time period, an extension should be solicited to leave objects in the Area.

7(x) Requirements for reports

The main permit holder, for each permit and once the activity has finished, shall submit a report of the activities conducted in the Area, using the format previously turned in together with the permit. The report should be sent to the permit issuing authority.

Records of permits and post-visit reports relating to the ASPA will be exchanged with the rest of the Consultative Parties as part of the System of Information Exchange according to Art. 10.1 of Annex V.

The permits and reports should be stored and made accessible to any interested Party, SCAR, CCAMLR, COMNAP, so as to provide necessary information of human activities in the Area to ensure adequate management.

Figure 1: General location of Antarctic Specially Protected Area No. 134, Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula.

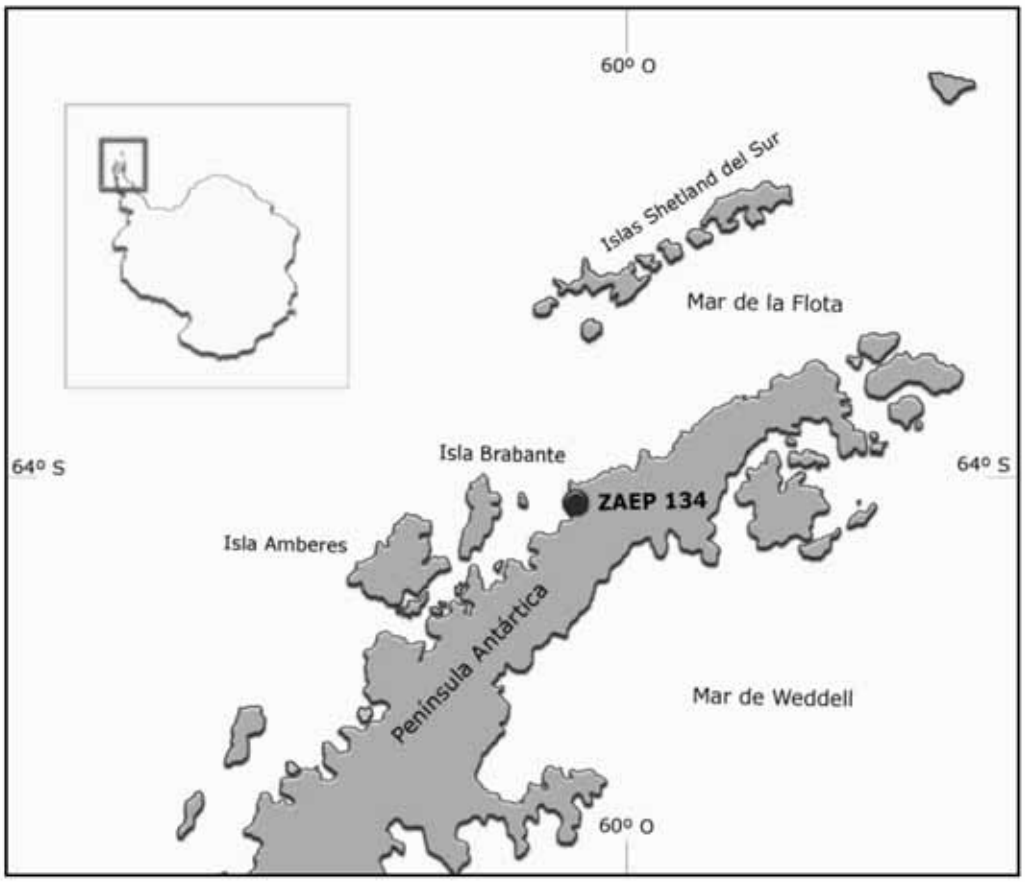


Figure 2: Antarctic Specially Protected Area No. 134, Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula. In shading, the group of areas that make up ASPA 134 (the subtidal marine environment between the continental and insular portions is not included in the ASPA).

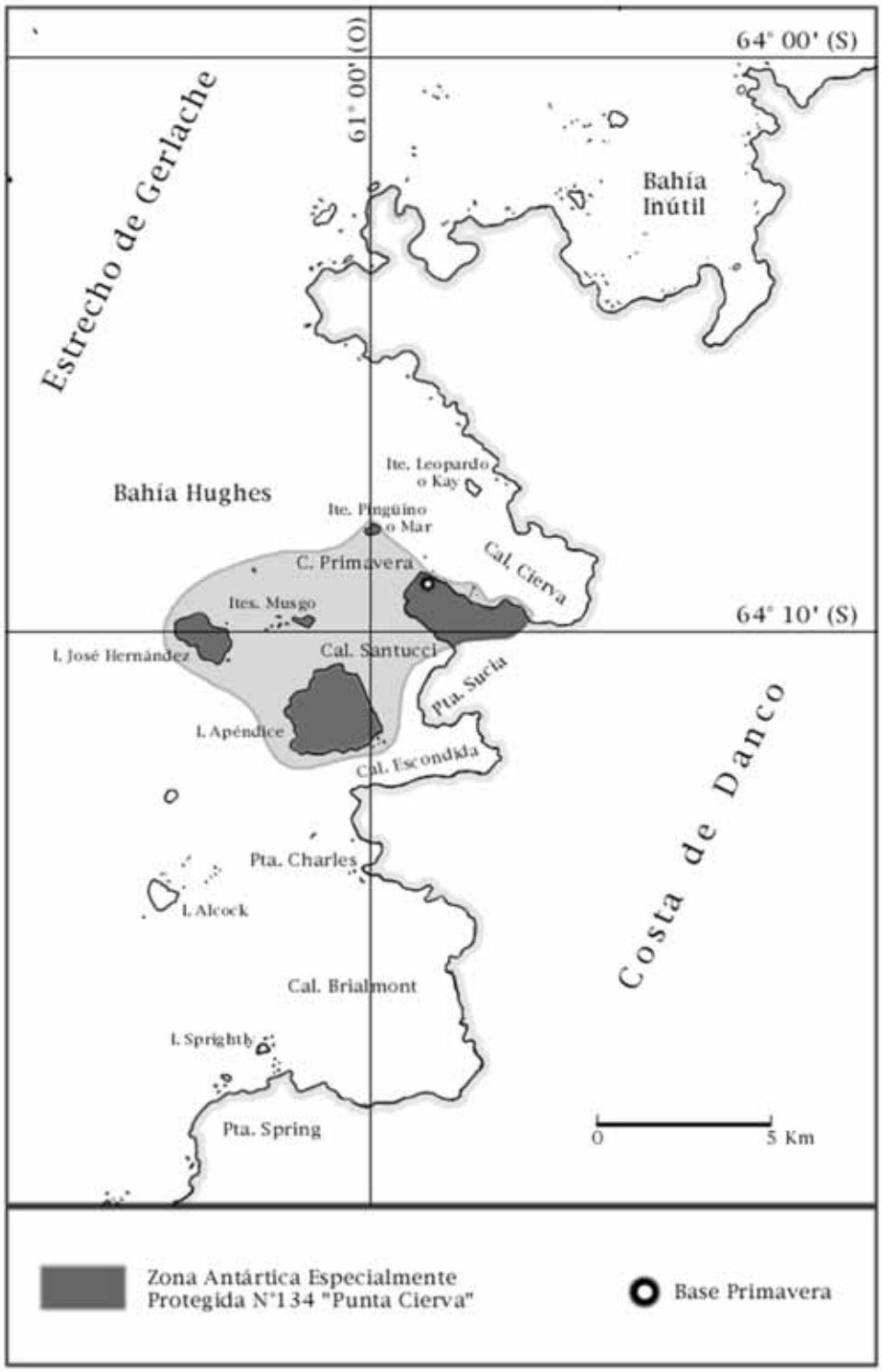
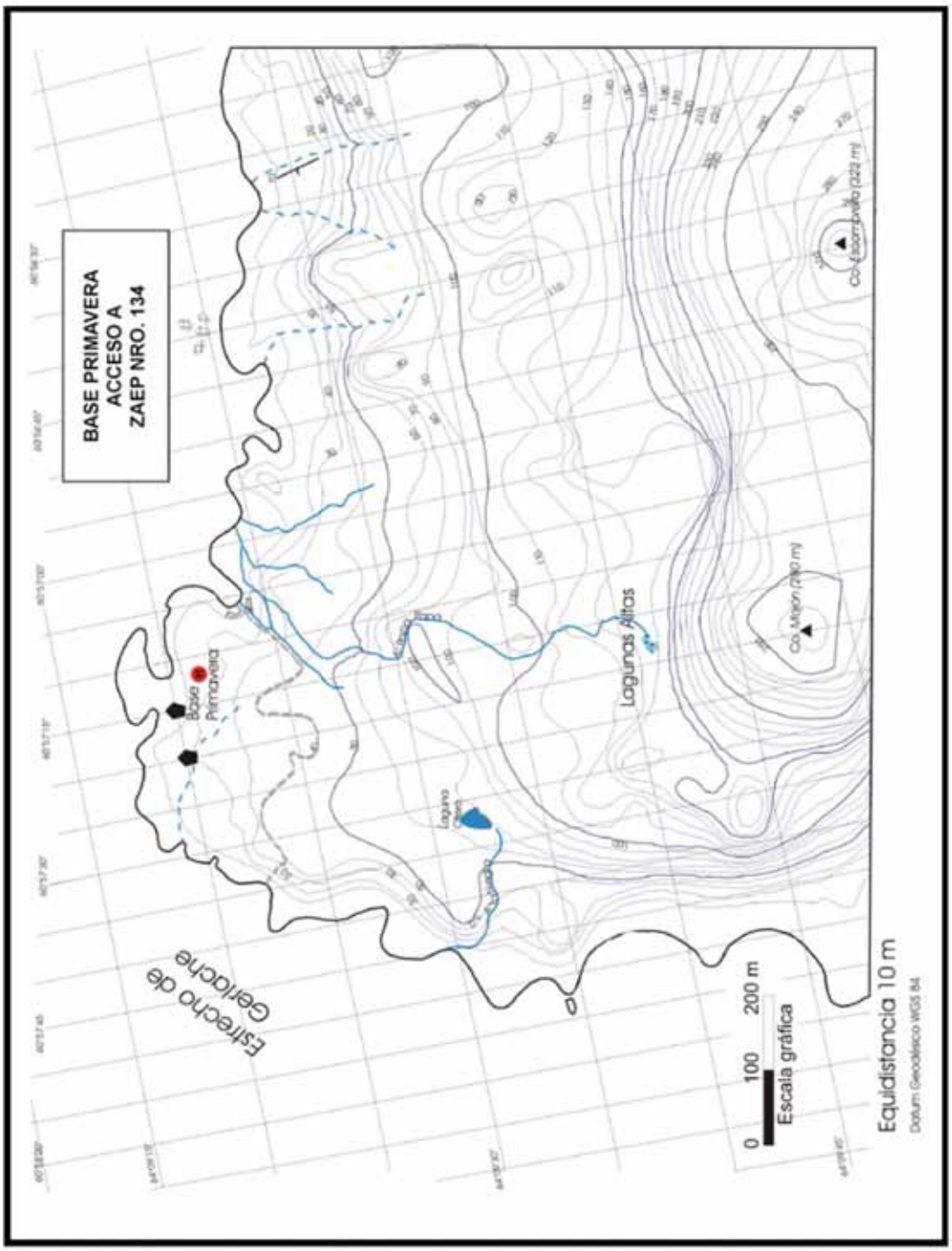


Figure 3: Area of Cierva Point that includes Primavera Base (the grey pointed line above the 40 m contour line indicates the base area, excluded from ASPA No.134).



Management Plan for Antarctic Specially Protected Area No. 136

CLARK PENINSULA, BUDD COAST, WILKES LAND

Introduction

Clark Peninsula was originally designated as a Site of Special Scientific Interest No. 17 under Recommendation XIII-8 (1985) and a revised Management Plan was adopted under Measure 1 (2000). The Area is approximately 9.75 km^2 in area and is adjacent to the Windmill Islands on the Budd Coast, Wilkes Land, East Antarctica (Map A). Scientific research within the Area has focused on plant communities and long term population studies of Adélie penguin colonies. The protection of this flora and fauna within the Area allows for valuable comparison with similar plant communities and penguin colonies closer to Casey Station (approximately 5 kilometres to the south-west) which are subject to greater levels of human disturbance.

1. Description of values to be protected

With the exception of 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 associations 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 in the fields of botany, microbiology, soil science and glacial geomorphology.

Moss and lichen communities in the Area are used as control plots to monitor the environmental impacts of Casey Station. The Area provides baseline and comparative 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 before present (BP).

Significant and relatively undisturbed breeding populations of Adélie penguins *(Pygoscelis adeliae)* and South Polar skuas *(Catharacta maccormicki)* are present within the Area at Whitney and Blakeney Points. In addition, breeding Wilson's storm petrels *(Oceanites oceanicus)* and Snow petrels *(Pagodroma nivea)* are present in most ice-free areas. The monitoring of the breeding populations of Adélie penguins at Whitney Point since 1959 provides valuable comparative data for assessing and measuring human impacts and disturbance of penguin colonies on Shirley Island which is within the Station Limits of Casey Station. These long-term population data on Adélie penguin numbers are amongst the longest in the Antarctic.

The Area supports exceptional vegetation cover for a continental Antarctic coastal ice-free location, and exhibits a wide range of plant communities. The Area requires protection because of its ecological importance, its significant scientific value and the limited geographical extent of the plant communities. The Area is vulnerable to disturbance from trampling, scientific sampling, pollution and alien introductions, while being sufficiently distant from Casey Station to avoid immediate

impacts and disturbances from activities undertaken there. It is because of the scientific and ecological values, and the usage of the Area for long term monitoring, that it should continue to be protected.

Primary Reason for Designation

Clark Peninsula provides a unique and visible time sequence of the emergence of the area of the Windmill Islands from the sea since the Holocene deglaciation. Prior to the emergence of Whitney Point and Blakeney Point, the central ridge between them consisted of islets that were occupied by Adélie penguins. Soon after the emergence of the two points, the penguins began to occupy them. This historical penguin presence is understood to have lead to the current abundance and density of the plant communities in the Area, the nature of which is not seen anywhere else in the Antarctic. The obvious interaction of these two phenomena provides an exceptional stage for research.

2. Aims and objectives

The aim of this Management Plan is to provide continued protection to the features and values of Clark Peninsula. The objectives of the Plan are to:

- avoid degradation of, or substantial risk to, the values of the Area by minimising human disturbance;
- protect 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 disturbance;
- prevent or minimise the introduction of non-native species into the Area; and
- 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, and clearly stating entry restrictions, shall be placed at appropriate locations at the boundaries of the Area to help avoid inadvertent entry;
- information about the Area, including a statement of the special restrictions that apply and a copy of this Management Plan, shall be displayed prominently 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. Copies of this Management plan will also be provided to 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;
- visits shall be made as necessary for management purposes; and
- the Management Plan shall be reviewed at least every five years and revised as required.

4. Period of designation

Designated for an indefinite period.

5. Maps

- Map A: Antarctic Specially Protected Areas, Windmill Islands, East Antarctica
- Map B: Antarctic Specially Protected Area No. 136, Clark Peninsula, Windmill Islands, East Antarctica. *Topography and distribution of birds.*
- Map C: Antarctic Specially Protected Area No. 136, Clark Peninsula, Windmill Islands, East Antarctica. *Distribution of major vegetation types.*
- Map D: Antarctic Specially Protected Area No. 136, Clark Peninsula, Windmill Islands, East Antarctica. *Geology.*

Specifications for all Maps:

Horizontal Datum: WGS84 Projection: UTM Zone 49.

6. Description of the Area

6(i) Geographical co-ordinates, boundary markers and natural features

Clark Peninsula is an area of rock exposures and permanent ice and snow fields situated on the north side of Newcomb Bay at the east end of Vincennes Bay on Budd Coast, Wilkes Land. The Area covers approxiamtely 9.75 km^2 and is located at latitude 66°15'S and longitude 110°36'E.

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°15'16" S, longitude 110°32' E, to trigonometrical station G7 at latitude 66°15'29" S, longitude 110°33'24" E thence to a point to the east-south-east on the Løken Moraines. The eastern boundary is the westernmost limit of the 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 Maps A, B, C and D.

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

The Windmill Islands offshore from the Area represent one of the easternmost outcrops of a Mesoproterozoic low-pressure granulite facies terrain that extends west to the Bunger Hills and farther west to the Archaean complexes in Princess Elizabeth Land, and eastward to minor exposures in the Dumont d'Urville area and at Commonwealth Bay.

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.

Outcrops of metapelitic rock and leucocratic granite gneiss are dominant on Clark Peninsula. 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 surface geology of Clark Peninsula is shown at Map D.

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 aligned south-west to north-east on Clark Peninsula, and at both Whitney Point and Blakeney Point. In the vicinity of abandoned penguin colonies, the soils are pebbly and rich in organic matter derived from penguin guano with some silts. Melt streams and pools and small lakes are prevalent in summer. The distribution of lakes on Clark Peninsula is shown at Map B.

Conditions on Clark Peninsula, in comparison with many other continental Antarctic areas, are sufficiently mild to have allowed the formation of relatively stable, complex, well developed, and species-rich vegetation. The ice-free rocks support an extensive cover of lichen, while mosses predominate in lower lying areas. Principal factors responsible for the distribution of vegetation on Clark Peninsula are exposure to wind, availability of water and the location of abandoned penguin colonies.

To the north-east of the Peninsula, well-developed *Umbilicaria decussata*, *Pseudephebe minuscula*, *Usnea sphacelata* communities dominate. Farther 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 pseudo triquetrum*, *Schistidium 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 Adélie 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 C. The microflora comprises algae, with *Botrydiopsis constricta* and *Chlorella conglomerata* dominating, together with bacteria, yeasts and filamentous fungi.

Adélie penguin (*Pygoscelis adeliae*) colonies are present at two localities in the Area, Whitney Point and Blakeney Point. Approximately 9,000 breeding pairs were present in 2004/05 at Whitney Point, and approximately 4,600 breeding pairs were present at Blakeney Point in 1991. The breeding populations of Adélie penguins at Whitney Point and at Blakeney Point have increased since studies commenced in 1959/60. This is in contrast to nearby Shirley Island (3 km to the southwest and close to 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 as shown on Map B.

Terrestrial invertebrate microfauna comprises 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 to be 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 (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 generally scour the exposed areas. Snow gathers in the lee of rock outcrops and in depressions in the substratum and forms deeper drifts farther down the slopes.

6(ii) Special Zones within the Area

There is one special zone within the Area. To allow access from the plateau to the sea for scientific research or management purposes, over-snow vehicle access is permitted within the Transit Zone north east of a line that runs from the ASPA boundary at the Løken Moraines at 110°38'34"E 66°14'47"S and runs north-west to meet the coastline at 110°36'54"E 66°14'31"S. Vehicles must travel only on ice or snow covered ground to avoid disturbance to vegetation and relic penguin colonies. Use of this Transit Zone may be subject to specific permit conditions.

6(iii) Location of structures within and adjacent to the Area

The only structure known to exist in the Area is a severely deteriorated wood and canvas hide, known as the "Wannigan" (colloquial name) located on "Lower Snow Slope" (unofficial place name) on the western facing slope of Whitney Point. This hide was constructed in 1959 for behavioural studies of breeding Adélie penguins by R.L. Penney. There are a number of boundary markers along the southern boundary and a number of survey markers within the Area.

The "Wilkes Hilton" refuge hut is located approximately 200 m south of the southern boundary. Approximately 1 km to the southwest is the abandoned Wilkes Station on Stonehocker Point. Another Refuge Hut, "Jack's Donga" is located approximately 1.5 km north of the northern boundary of the Area.

6(iv) Location of other Protected Areas in the vicinity

Other protected areas within 50 km include (see Map A):

- Antarctic Specially Protected Area No. 135, north-eastern Bailey Peninsula (66°17'S, 110º33'E): 2.5 km southwest of Clark Peninsula, across Newcomb Bay, adjacent to Casey Station;
- Antarctic Specially Protected Area No. 103, Ardery Island (66°22'S, 110°27'E), and Odbert Island (66°22'S, 110°33'E) Budd Coast: located in Vincennes Bay, 13 km south of the former Wilkes Station; and
- Antarctic Specially Protected Area No. 160, Frazier Islands (66°13'S 110°11'E): approximately 16 km to the NW in Vincennes Bay.

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 objectives and provisions of this Management Plan.

Permits shall be issued for a specified period and the permit or an authorised copy shall be carried within the Area. 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 be from "Wilkes Hilton" Refuge Hut in the southwest, "Jack's Donga" Refuge Hut in the northeast, 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.

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.

Access to the sea ice by oversnow vehicles for scientific purposes or management activities is permitted within the Transit Zone that is north east of a line that runs from the ASPA boundary at the Løken Moraines at 110°38'34"E 66°14'47"S and runs north-west to meet the coastline at 110°36'54"E 66°14'31"S. All vehicles must travel only on ice or snow covered ground to avoid disturbance to vegetation and relic penguin colonies. Vehicles are not allowed within the remainder of the Area (except for emergency situations) and access in all other circumstances should be by foot.

Helicopters are not allowed to land within the Area, except in emergencies or for essential management activities.

Pedestrian traffic in the Area should be kept to the minimum necessary to achieve the objectives of permitted activities. As much as possible, visitors should avoid walking on visible vegetation and in areas of moist ground, where foot traffic can easily damage sensitive soils, plant or algae communities, and degrade water quality.

To avoid disturbance, breeding penguins should not be approached within 30m during the breeding season – October to April – unless essential to the conduct of a 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, and which will not jeopardise the values for which the Area has been designated;
- essential management activities, including monitoring;
- sampling, which should be the minimum required for the approved research program(s).

7(iii) Installation, modification or removal of structures

No structures are to be erected or scientific equipment installed within the Area, except for essential scientific or management activities 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. Field parties should camp at either the "Wilkes Hilton" Refuge Hut or at "Jack's Donga" Refuge Hut.

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 all necessary precautions shall be taken against accidental introductions to the Area.

No poultry material, poultry products, herbicides or pesticides shall be taken into the Area. All chemicals, including radio-nuclides or stable isotopes, shall be removed from the Area at or before the conclusion of the associated activity.

Fuel is not to be stored in the Area unless required for essential purposes connected with a permitted activity. Such fuel storage is to be in containers of 20 litres or less. Permanent depots are not permitted.

All material introduced to the Area 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 inadvertent release into 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 Article 3 of of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, 1991.

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 under 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 unless the impact of the removal is likely to be greater than leaving the material *in situ.* The appropriate Authority must be notified and approval obtained before any material is moved or removed from the Area.

7(viii) Disposal of waste

All wastes generated in the Area, including human faeces and urine, shall be removed from 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 undertake 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;
- all sites of long-term monitoring activities shall be appropriately marked and a Global Positioning System (GPS) location obtained for lodgement with the Antarctic Data Directory System through the appropriate National Authority. All GPS data are to be recorded in visit reports and lodged within 3 months of the end of field activities in which the GPS data were captured;
- 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, visitors shall thoroughly clean footwear and any equipment, particularly sampling equipment and markers to be used in the Area, before entering the Area.

7(x) Mitigation measures

It is not acceptable to abandon a site without restoring it, as far as is possible, to its original state. Soil pits must be refilled to maintain the integrity of the area. Likewise all markers should be removed at the conclusion of their related activity.

7(xi) Requirements for reports

The principal Permit Holder for each permit is to submit to the appropriate National Authority a report on 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 Plan of Management.

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 considered in any review of the Plan of Management and in organising the use of the Area. A copy of the report should be forwarded to the National Party responsible for development of the Management Plan (Australia) to assist in management of the Area, and monitoring of bird populations. Additionally visit reports should provide detailed information on census data, locations of any new colonies or nests not previously recorded, a brief summary of research findings and copies of photographs taken of the Area.

8. Supporting documentation

Some of the data used within this paper and for mapping purposes was obtained from the Australian Antarctic Data Centre (IDN Node AMD/AU), a part of the Australian Antarctic Division (Commonwealth of Australia). The data regarding breeding seabird distributions are from the Australian Antarctic Program's Science Project 1219, titled Monitoring for long-term or cumulative impacts in Southern Ocean seabirds, for the period 1999-2005.

Adamson, E., & Seppelt, R. D. 1990. A Comparison of Airborne Alkaline Pollution Damage in Selected Lichens and Mosses at Casey Station, Wilkes Land, Antarctica. In: Kerry, K. R., and Hempel, G. (Eds.), *Antarctic Ecosystems: Ecological Change and Conservation*, Springer-Verlag, Berlin, pp. 347-353.

Azmi, O. R., & Seppelt, R. D. 1997. Fungi in the Windmill Islands, continental Antarctica. Effect of temperature, pH and culture media on the growth of selected microfungi. Polar Biology 18: 128-134.

Azmi, O. R., & Seppelt, R. D. 1998. The broad scale distribution of microfungi in the Windmill islands region, continental Antarctica. Polar Biology 19: 92-100.

Beyer, L. & Bölter, M. 2002. Geoecolgy of Antarctic Ice-Free Coastal Landscapes. Ecological Studies, Vol. 154. Springer-Verlag Berlin Heidelberg.

Beyer, L., Pingpank, K., Bolter, M. & Seppelt, R. D. 1998. Small-distance variation of carbon and nitrogen storage in mineral Antarctic Cryosols near Casey Station (Wilkes Land). Zeitschrift fur Pflanzenahrung Bodendunde 161: 211-220.

Blight, D. F. 1975. *The Metamorphic Geology of the Windmill Islands Antarctica, Volumes 1 and 2*, PhD thesis, University of Adelaide.

Blight, D. F. & Oliver, R. L. 1997. The metamorphic geology of the Windmill Islands Antarctica: a preliminary account. Journal of the Geological Society of Australia, 24: 239-262.

Blight, D. F. & Oliver, R. L.1982. Aspects of the Geological history of the Windmill Islands, Antarctica. In: Craddock, C. (Ed.), *Antarctic Geoscience*, University of Wisconsin Press, Madison, WI, pp. 445-454.

Cowan, A. N. 1979. Giant Petrels at Casey, Antarctica. Australian Bird Watcher 8: 66-67.

Cowan, A. N. 1981. Size variation in the Snow petrel (*Pagodroma nivea*). Notornis 28: 169-188.

Emslie, S. D. & Woehler, E. J. 2005. A 9000 year record of Adélie penguin occupation and diet in the Windmill Islands, East Antarctica. Antarctic Science 17, 57-66.

Giese, M. 1998. Guidelines for people approaching breeding groups of Adélie penguins (*Pygoscelis adeliae*), Polar Record 34 (191): 287-292.

Goodwin, I. D. 1993. Holocene deglaciation, sea-level change, and the emergence of the Windmill Islands, Budd Coast, Antarctica, Quaternary Research, 40: 70-80.

Heatwole, H., Saenger, P., Spain, A., Kerry, E. & Donelan, J. 1989. Biotic and chemical characteristics of some soils from Wilkes Land Antarctica, Antarctic Science 1: 225-234.

Hovenden, M. J., & Seppelt, R. D. 1995. Exposure and nutrients as delimiters of lichen communities in continental Antarctica, Lichenologist 27: 505-516.

Martin, M. R., Johnstone, G. W. & Woehler, E. J. 1990. Increased numbers of Adélie Penguins *Pygoscelis adeliae* breeding near Casey, Wilkes Land, East Antarctica. Corella 14, 119-122.

Melick, D. R., Hovenden, M. J., & Seppelt, R. D. 1994. Phytogeography of bryophyte and lichen vegetation in the Windmill Islands, Wilkes land, Continental Antarctica, Vegetatio 111: 71-87.

Melick, D. R. & Seppelt, R. D. 1990. Vegetation patterns in Relation to climatic and endogenous changes in Wilkes Land, continental Antarctica, Journal of Ecology, 85: 43- 56.

Murray, M. D. & Luders, D. J. 1990. Faunistic studies at the Windmill Islands, Wilkes Land, east Antarctica, 1959-80. ANARE Research Notes 73, Antarctic Division, Kingston.

Olivier, F., Lee, A. V. & Woehler, E. J. 2004. Distribution and abundance of snow petrels *Pagodroma nivea* in the Windmill Islands, East Antarctica. Polar Biology 27, 257-265.

Orton, M. N. 1963. A Brief Survey of the fauna of the Windmill Islands, Wilkes Land, Antarctica. The Emu 63: 14-22.

Paul, E., Stüwe, K., Teasdale, J. & Worley, B. 1995. Structural and metamorpohic geology of the Windmill Islands, east Antarctica: field evidence for repeated tectonothermal activity. Australian Journal of Earth Sciences 42: 453-469.

Roser, D. J., Melick, D. R. & Seppelt, R. D. 1992. Reductions in the polyhydric alcohol content of lichens as an indicator of environmental pollution. Antarctic Science 4: 185-189.

Roser, D. J., Melick, D. R., Ling, H. U. & Seppelt, R. D. 1992. Polyol and sugar content of terrestrial plants from continental Antarctica. Antarctic Science 4: 413- 420.

Roser, D. J., Seppelt, R. D. & Nordstrom. 1994. Soluble carbohydrate and organic content of soils and associated microbiota from the Windmill Islands, Budd Coast, Antarctica. Antarctic Science 6: 53-59.

Smith, R. I. L. 1980. Plant community dynamics in Wilkes Land, Antarctica, Proceedings NIPR Symposium of polar biology, 3: 229-224.

Smith, R. I. L. 1986. Plant ecological studies in the fellfield ecosystem near Casey Station, Australian Antarctic Territory, 1985-86. British Antarctic Survey Bulletin, 72: 81-91.

Woehler, E. J. 1990. Two records of seabird entanglement at Casey, Antarctica. Marine Ornithology 18, 72-73.

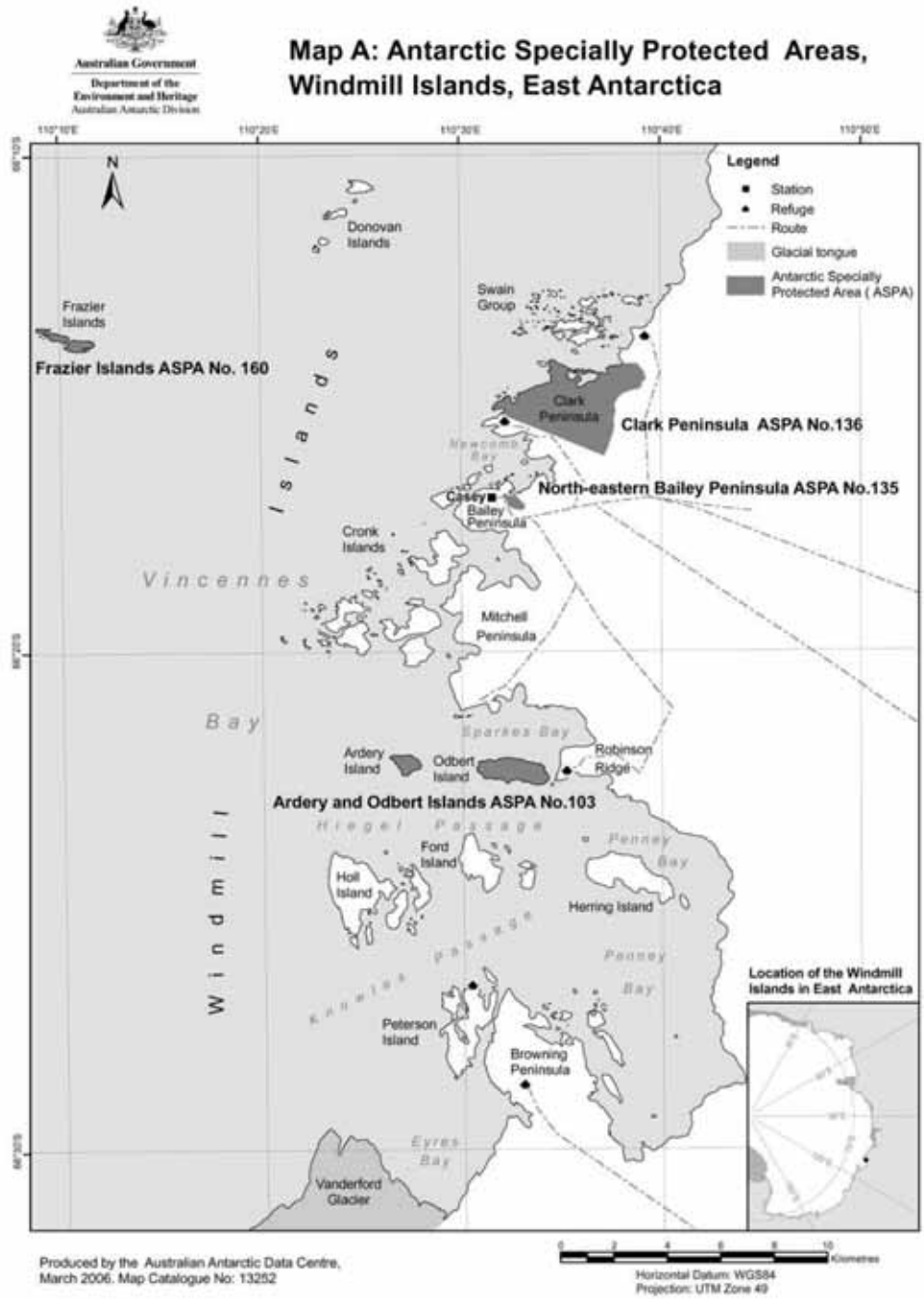
Woehler, E. J. 1993. Antarctic seabirds: their status and conservation in the AAT. RAOU Conservation Statement 9, 8pp.

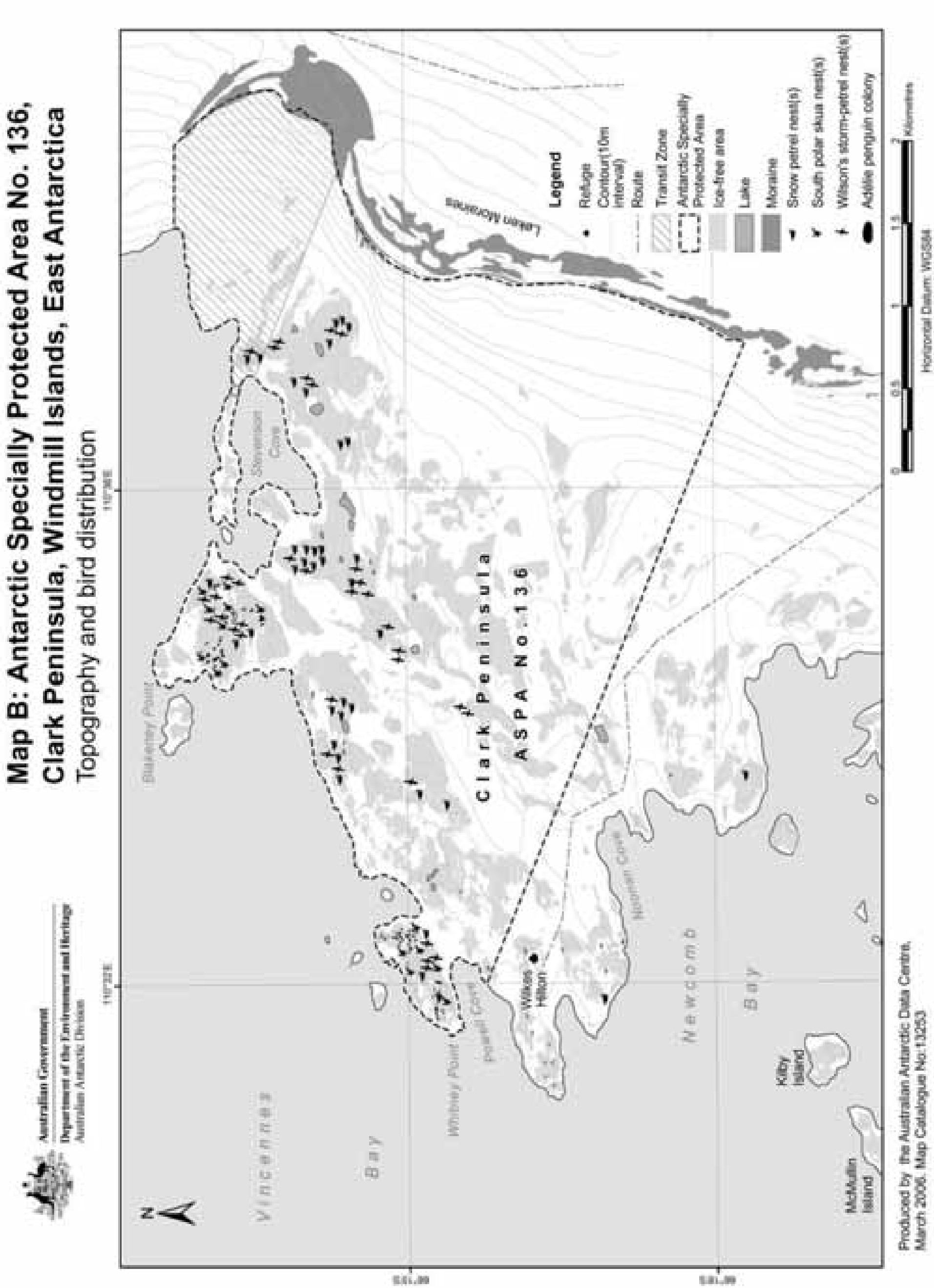
Woehler E. J., Riddle M. J. & Ribic C.A. 2003. Long-term population trends in southern giant petrels in East Antarctica. In: Huiskes AHL, Gieskes WWC, Rozema J, Schorno RML, van der Vies SM and Wolff W (eds) *Antarctic Biology in a global context*. Backhuys Publishers, Leiden, pp 290-295.

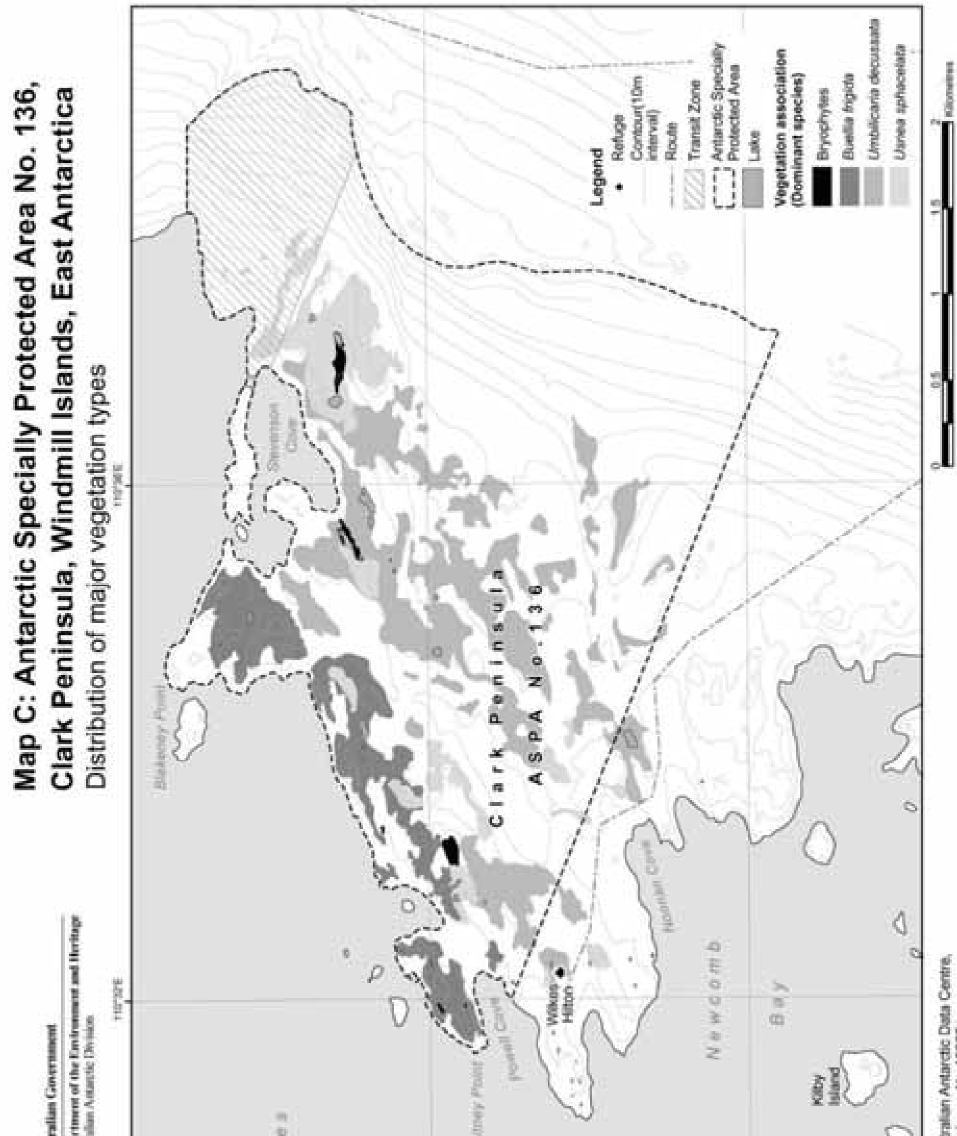
Woehler, E. J., Martin, M. R. & Johnstone, G. W. 1990. The status of Southern Giant-Petrels, *Macronectes giganteus*, at the Frazier Islands, Wilkes Land, East Antarctica. Corella 14, 101-106.

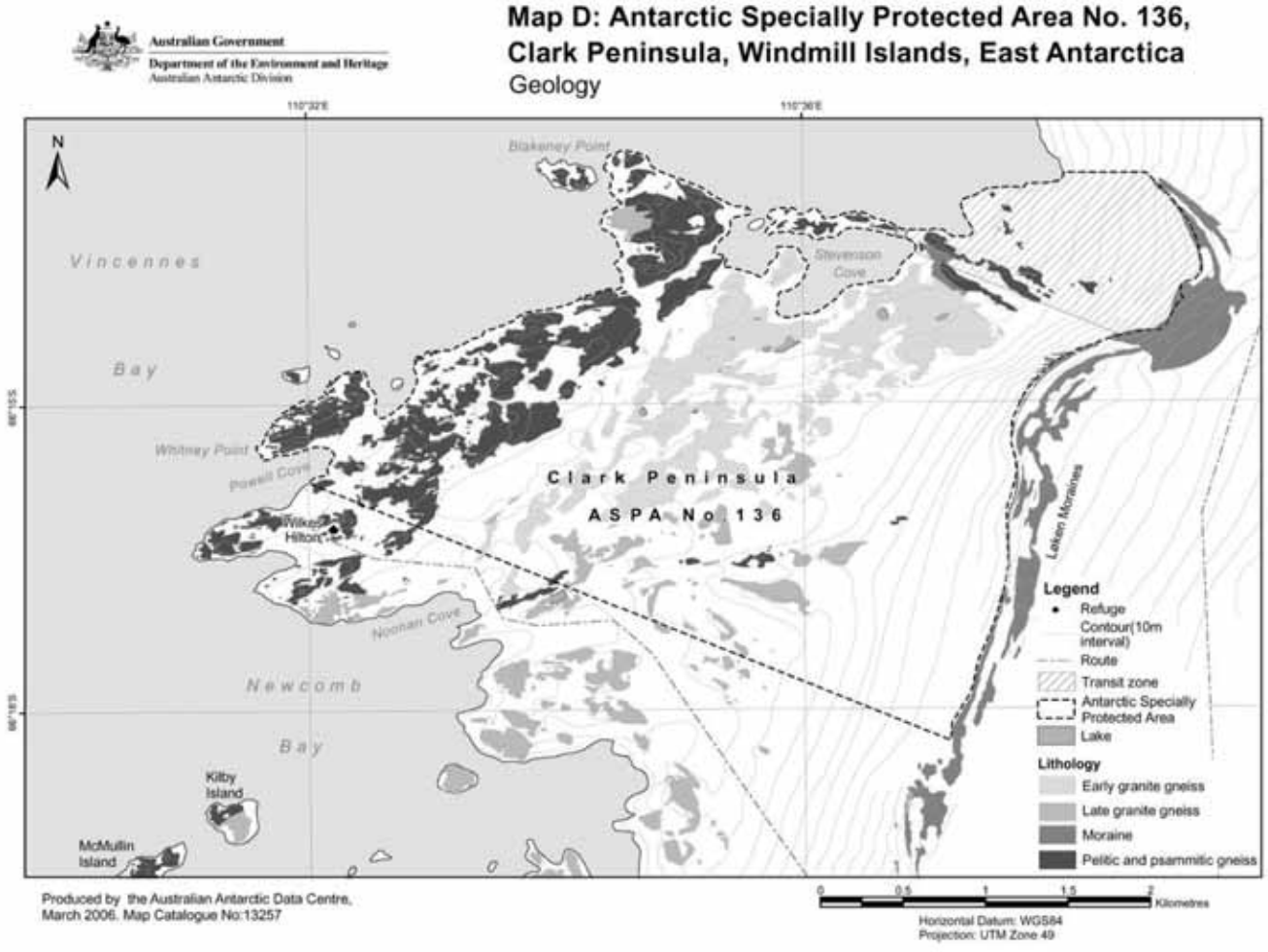
Woehler, E. J., Slip, D. J., Robertson, L. M., Fullagar, P. J. & Burton, H. R. 1991. The distribution, abundance and status of Adélie penguins *Pygoscelis adeliae* at the Windmill Islands, Wilkes Land, Antarctica, Marine Ornithology 19: 1-18.

Woehler, E. J., Penney, S. M., Creet, S. M. & Burton, H. R. 1994. Impacts of human visitors on breeding success and long-term population trends in Adélie Penguins at Casey, Antarctica, Polar Biology 14: 269-274.


Australian Government
Department of the Environment and Heritage
Australian Antarctic Division
Map A: Antarctic Specially Protected Areas, Windmill Islands, East Antarctica
110°10'E
110°20'E
110°30'E
110°40'E
110°50'E
N
Legend
Station
Refuge
Route
Glacial tongue
Antarctic Specially Protected Area (ASPA)
Donovan Islands
Swain Group
Frazier Islands
Frazier Islands ASPA No. 160
Clark Peninsula
Clark Peninsula ASPA No.136
Newcomb Bay
Casey
Bailey Peninsula
North-eastern Bailey Peninsula ASPA No.135
Cronk Islands
Vincennes Bay
Mitchell Peninsula
Sparkes Bay
Ardery Island
Odbert Island
Robinson Ridge
Ardery and Odbert Islands ASPA No.103
Hiegel Passage
Ford Island
Holl Island
Penney Bay
Herring Island
Peterson Island
Browning Peninsula
Eyres Bay
Vanderford Glacier
Windmill Islands
Location of the Windmill Islands in East Antarctica
Produced by the Australian Antarctic Data Centre, March 2006. Map Catalogue No: 13252
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49


Map B: Antarctic Specially Protected Area No. 136,
Clark Peninsula, Windmill Islands, East Antarctica
Topography and bird distribution
Australian Government
Department of the Environment and Heritage
Australian Antarctic Division
Vincennes
Bay
Newcomb
Bay
Clark Peninsula
ASPA No. 136
Whitney Point
Powell Cove
Wilkes Hilton
Stevenson Cove
Blakeney Point
Noonan Cove
Löken Moraines
Kilby Island
McMullin Island
Legend
Refuge
Contour (10m interval)
Route
Transit Zone
Antarctic Specially Protected Area
Ice-free area
Lake
Moraine
Snow petrel nest(s)
South polar skua nest(s)
Wilson's storm-petrel nest(s)
Adélie penguin colony
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by the Australian Antarctic Data Centre,
March 2006. Map Catalogue No:13253


Map C: Antarctic Specially Protected Area No. 136,
Clark Peninsula, Windmill Islands, East Antarctica
Distribution of major vegetation types
Australian Government
Department of the Environment and Heritage
Australian Antarctic Division
Legend
Refuge
Contour(10m interval)
Route
Transit Zone
Antarctic Specially Protected Area
Lake
Vegetation association (Dominant species)
Bryophytes
Buellia frigida
Umbilicaria decussata
Usnea sphacelata
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Clark Peninsula
ASPA No. 136
Vincennes Bay
Newcomb Bay
Blakeney Point
Stevenson Cove
Whitney Point
Powell Cove
Wilkes Hilton
Kilby Island
McMullin Island
Produced by the Australian Antarctic Data Centre, March 2006. Map Catalogue No 13255


Australian Government
Department of the Environment and Heritage
Australian Antarctic Division
Map D: Antarctic Specially Protected Area No. 136,
Clark Peninsula, Windmill Islands, East Antarctica
Geology
110°32'E
110°36'E
66°15'S
66°18'S
N
Blakeney Point
Vincennes
Bay
Stevenson Cove
Whitney Point
Powell Cove
Clark Peninsula
ASPA No 136
Wilkes Hilton
Lakes Moraines
Noonan Cove
Newcomb
Bay
Kilby Island
McMullin Island
Legend
Refuge
Contour(10m interval)
Route
Transit zone
Antarctic Specially Protected Area
Lake
Lithology
Early granite gneiss
Late granite gneiss
Moraine
Pelitic and psammitic gneiss
0 0.5 1 1.5 2 Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by the Australian Antarctic Data Centre,
March 2006. Map Catalogue No:13257

Management Plan for Antarctic Specially Protected Area No. 165

EDMONSON POINT, WOOD BAY, ROSS SEA

1. Description of values to be protected

Edmonson Point (74°20' S, 165°08' E, 5.49 km^2), Wood Bay, Victoria Land, Ross Sea, was proposed as an Antarctic Specially Protected Area (ASPA) by Italy on the grounds that it has outstanding ecological and scientific values which require protection from possible interference that might arise from unregulated access. The Area includes ice-free ground and a small area of adjacent sea at the foot of the eastern slopes of Mount Melbourne (2732 m), which is of limited extent and is the subject of ongoing and long-term scientific research.

The terrestrial and freshwater ecosystem at Edmonson Point is one of the most outstanding in northern Victoria Land. An exceptional diversity of freshwater habitats is present, with numerous streams, lakes, ponds and seepage areas, exhibiting nutrient conditions ranging from eutrophic to oligotrophic. Such a range of freshwater habitats is rare in Victoria Land. Consequently, these habitats support a high diversity of algal and cyanobacterial species, with over 120 species so far recorded, and the stream network is the most extensive and substantial in northern Victoria Land. The volcanic lithology and substrata locally nutrient-enriched by birds, together with a localised abundance of water, provide a habitat for relatively extensive bryophyte development. Plant communities are highly sensitive to changes in the hydrological regime, and environmental gradients produce sharply defined community boundaries. Thus, the range of vegetation is diverse, and includes epilithic lichen communities, some of which are dependent on high nitrogen input from birds, communities associated with late-lying snow patches, and moss-dominated communities that favour continually moist or wet habitats. The site represents one of the best examples of the latter community type in Victoria Land. Invertebrates are unusually abundant and extensively distributed for this part of Antarctica.

The nature and diversity of the terrestrial and freshwater habitats offer outstanding scientific opportunities, especially for studies of biological variation and processes along moisture and nutrient gradients. The site is considered one of the best in Antarctica for studies of algal ecology. These features were among those that led to the selection of Edmonson Point as a key site in the Scientific Committee on Antarctic Research's Biological Investigations of Terrestrial Antarctic Systems (BIOTAS) programme in 1995-96. A coordinated multinational research programme, known as BIOTEX-1, established study sites and made extensive collections of soil, rock, water, snow, guano, bacteria, vegetation (cyanobacterial mats, fungi, algae, lichens, bryophytes) and of terrestrial invertebrates.

The scientific value of Edmonson Point is also considered exceptional for studies on the impact of climate change on terrestrial ecosystems. Its location at approximately the mid-point in a north-south latitudinal gradient extending along Victoria Land is complementary to other sites protected for their important terrestrial ecological values, such as Cape Hallett (ASPA No. 106) and Botany Bay, Cape Geology (ASPA No. 154), which are about 300 km to the north and south respectively. This geographical position is recognised as important in a continent-wide ecological research network (e.g. the Scientific Committee on Antarctic Research 'RiSCC' programme). In addition, the lakes are among the best in northern Victoria Land for studies of biogeochemical processes with short- and long-term variations. Together with the unique properties of the permafrost active layer, which is unusually thick in this location, these features are considered particularly useful as sensitive indicators of ecological change in response to levels of UV radiation and in shifting climate.

A colony of approximately 2000 pairs of Adélie penguins (*Pygoscelis adeliae*) has been a focus of ongoing research since 1994-95 together with a colony of approximately 120 pairs of south polar skuas (*Catharacta maccormicki*). The Edmonson Point Adélie penguin colony is included in the ecosystem monitoring network of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The site is considered a good example of this species assemblage, which is representative of those found elsewhere. It is unusual, however, for the diverse range of breeding habitat available for south polar skuas, and also because of the unusually high skua to penguin ratio (1:20). The geographical position, the size of the colonies, the terrain and habitat features of the site, the natural protection given by the summer fast ice extension and the distance from Mario Zucchelli Station at Terra Nova Bay (which isolates the colony from research station disturbance but allows for logistic support) make Edmonson Point particularly suitable for the research being undertaken on these birds. The research contributes to the CCAMLR Ecosystem Monitoring Programme (CEMP), focusing on population monitoring, reproductive success, feeding and foraging strategies, migration, and behaviour. This research is important to broader studies of how natural and human-induced variations in the Antarctic ecosystem may affect the breeding success of Adélie penguins, and to understand the potential impact of harvesting of Antarctic krill (*Euphausia superba*).

The near-shore marine environment is a good and representative example of the sea-ice habitat used by breeding Weddell seals to give birth and wean pups early in the summer season. Only one other ASPA in the Ross Sea region has been designated to protect Weddell seals (ASPA No. 137 Northwest White Island, McMurdo Sound), but that site was designated because the small breeding group of seals in that locality is highly unusual; in contrast, inclusion here is as a representative example similar to breeding sites throughout the region.

In addition to the outstanding biological values, a diversity of geomorphic features is present, including a series of ice-cored moraines incorporating marine deposits, raised beaches, patterned ground, a cuspate foreland, and fossil penguin colonies. The cuspate foreland at Edmonson Point is a rare feature in Victoria Land, and is one of the best examples of its kind. It is unusual in that it is not occupied by a breeding colony of penguins, as is the case at Cape Hallett and Cape Adare. The glacial moraines that incorporate marine deposits, including seal bones and shells of the bivalves *Laternula elliptica* and *Adamussium colbecki*, are particularly valuable for dating regional glacier fluctuations. Sedimentary sequences in the north-west of Edmonson Point contain fossils from former penguin colonies. These are useful for dating the persistence of bird breeding at the site, which contributes to reconstructions of Holocene glacial phases and palaeoclimate.

The wide representation and the quality of phenomena at Edmonson Point have attracted interest from a variety of disciplines and research has been carried out at the site for more than 20 years. Over this period, substantial scientific databases have been established, which adds to the value of Edmonson Point for current, on-going and future research. It is important that pressures from human activities in the Area are managed so that the investments made in these long-term data sets are not inadvertently compromised. These factors also make the site of exceptional scientific value for multi-disciplinary studies.

Given the duration and range of past activities, Edmonson Point cannot be considered pristine. Some environmental impacts have been observed, such as occasional damage to soils and moss communities by trampling, dispersal of materials from scientific equipment by wind, and alteration of habitat by construction of facilities. In contrast, the ice-free area at Colline Ippolito (Ippolito Hills) (1.67 km^2) approximately 1.5 km to the north-west, has received relatively little visitation and human disturbance at this site is believed to be minimal. As such, Colline Ippolito is considered particularly valuable as a potential reference area for comparative studies to the main Edmonson Point, and it is important that this potential scientific value is maintained. While the precise effects of scientific research and human presence at both sites are uncertain, because detailed studies on

human impact have not yet been undertaken, contaminants in the local marine ecosystem remain very low and human impacts on the ecosystem as a whole, particularly at Colline Ippolito, are considered to be generally minor.

The biological and scientific values at Edmonson Point and Colline Ippolito are vulnerable to human disturbance. The vegetation, water-saturated soils and freshwater environments are susceptible to damage from trampling, sampling and pollution. Scientific studies could be compromised by disturbance to phenomena or to installed equipment. It is important that human activities are managed so that the risks of impacts on the outstanding values of the Area are minimised.

The total Area of 5.49 km^2 comprises the ice-free area of Edmonson Point (1.79 km^2), the smaller but similar ice-free area at Colline Ippolito (1.12 km^2) approximately 1.5 km to its north which is designated a Restricted Zone, and the adjacent marine environment (2.58 km^2) extending 200 m offshore from Edmonson Point and Colline Ippolito and including Baia Siena (Siena Bay) (Map 1).

2. Aims and objectives

Management at Edmonson Point aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;
- allow scientific research while ensuring protection from mutual interference and/or over-sampling;
- allow scientific research provided it is for reasons which cannot reasonably be served elsewhere;
- protect sites of long-term scientific studies from disturbance;
- preserve a part of the natural ecosystem as a potential reference area for the purpose of future comparative studies;
- 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 shall be undertaken to protect the values of the Area:

- Copies of this management plan, including maps of the Area, shall be made available at Mario Zucchelli Station at Terra Nova Bay (Italy), Gondwana Station (Germany), and at any other permanent stations established within 100 km of the Area;
- Structures, markers, signs, fences or other equipment erected within the Area for scientific or management purposes shall be secured and maintained in good condition and removed when no longer necessary;
- Durable wind direction indicators should be erected close to the designated helicopter landing sites whenever it is anticipated there will be a number of landings in a given season;
- Markers, which should be clearly visible from the air and pose no significant risk to the environment, should be placed to mark the designated helicopter landing sites;
- Markers, such as a series of durable sticks, should be placed to mark the preferred inland walking routes between the Adélie penguin colony and the designated helicopter landing sites;

- 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 shall 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 1: Edmonson Point ASPA No. 165, Wood Bay, Victoria Land, Ross Sea. Map specifications: Projection: UTM Zone 58S; Spheroid: WGS84; Ice-free areas and coastline derived from rectified Quickbird satellite image with a ground pixel resolution of 70 cm, acquired 04/01/04 by Programma Nazionale di Ricerche in Antartide (PNRA), Italy. Horizontal accuracy approx ±10 m; elevation information unavailable.

  Inset 1: the location of Wood Bay in Antarctica.

  Inset 2. The location of Map 1 in relation to Wood Bay and Terra Nova Bay. The location of Mario Zucchelli Station (Italy), Gondwana Station (Germany), and the nearest protected areas are shown.
- Map 2: Edmonson Point, ASPA No. 165, Physical / human features and access guidelines. Map derived from digital orthophotograph with ground pixel resolution of 25 cm, from ground GPS surveys and observations, and from Quickbird satellite image (04/01/04).

  Map specifications: Projection: Lambert Conformal Conic; Standard parallels: 1st 72° 40' 00" S; 2nd 75° 20' 00"S; Central Meridian: 165° 07' 00" E; Latitude of Origin: 74° 20' 00" S; Spheroid: WGS84; Vertical datum: Mean Sea Level. Vertical contour interval 10 m. Horizontal accuracy: ±1 m; vertical accuracy expected to be better than ±1 m.
- Map 3: Restricted Zone, Colline Ippolito: Edmonson Point ASPA No. 165. Map derived from Quickbird satellite image (04/01/04). Map specifications as for Map 2, except for horizontal accuracy which is approx ±10 m, and elevation information is not available. Sea level is approximated from coastline evident in satellite image.
- Map 4: Edmonson Point ASPA No. 165, topography, wildlife and vegetation. Map specifications as for Map 2, except for contour interval which is 2 m.

Map data and preparation: PNRA, Dipartimento di Scienze Ambientali (Università di Siena), Environmental Research & Assessment (Cambridge), Gateway Antarctica (Christchurch).

6. Description of the Area

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

General description

Edmonson Point (74°20' S, 165°08' E) is a coastal ice-free area of 1.79 km^2 situated at Wood Bay, 50 km north of Terra Nova Bay, and 13 km east of the summit and at the foot of Mount Melbourne (2732 m), Victoria Land. The Area comprises a total of 5.49 km^2, including the entire ice-free

ground of Edmonson Point (1.79 km^2), the separate ice-free area of Colline Ippolito (Ippolito Hills) (1.12 km^2) approximately 1.5 km north-west of Edmonson Point, and the nearshore marine environment and intervening sea of Baia Siena (Siena Bay) between these ice-free areas (2.58 km^2), which lie east and at the foot of the permanent ice sheet extending from Mount Melbourne (Map 1). Part of the glacier from Mount Melbourne separates the two ice-free areas on land. A broad pebbly beach extends the length of the coastline of Edmonson Point, above which cliffs rise up to 128 m towards the south of the Area. The topography of the Area is rugged, with several hills of volcanic origin of up to 134 m in height, and ice-free slopes rising to around 300 m adjacent to the ice sheet, although accurate elevation information in these areas is not currently available. Undulating ice-cored moraines, boulder fields and rock outcrops are separated by small ash plains and shallow valleys. The Area is dissected by numerous valleys and melt streams, with several small lakes, and seepage areas being common features throughout the Area. In the central region of Edmonson Point are several wide shallow basins, at about 25 m elevation, covered by fine scoria and coarse sand, mixed with extensive carpets of vegetation and areas of patterned ground. The northern coast of Edmonson Point is a cuspate foreland comprising several raised beaches.

The environmental character of Colline Ippolito is similar to that of Edmonson Point. This area has a narrow boulder beach backed by a ridge running parallel to the coast. Small meltwater streams run through shallow gullies and across flats into two lakes behind the coastal ridge in the north. Ridges and cones rise to about 200 m before merging with the snow fields and glaciers of Mount Melbourne in the south.

Boundaries

The margin of the permanent ice sheet extending from Mount Melbourne is defined as the boundary in the west, north and south of the Area (Maps 1-3). The eastern boundary is marine, which in the southern half of the Area follows the coastline 200 m offshore from the southern to northern extremities of the ice-free area of Edmonson Point. From the northern extremity of Edmonson Point, the eastern boundary extends NW across Baia Siena for a distance of 2 km to a position 200 m due east from the coast of the northern extremity of Colline Ippolito. Baia Siena is thus enclosed within the Area. Boundary markers have not been installed because the ice sheet margin and the coast are obvious boundary references.

Climate

No extended meteorological records are available for Edmonson Point, although annual data for McMurdo Station, Scott Base and Cape Hallett suggest the average mean temperature in the Edmonson Point vicinity would be around -16º C, and the mean annual snow accumulation about 20-50 cm, equivalent to 10-20 cm of water (Bargagli *et al.,* 1997). Short-term data are available for December 1995 – January 1996, collected during the BIOTEX 1 expedition. During this period temperatures ranged from -7º C to 10º C, with 0º C exceeded every day. Relative humidity was low (15-40% day, 50-80% night), precipitation occasional as light snow and wind speeds mostly low. From late January weather conditions deteriorated, with frequent subzero daytime temperatures, snow-fall and high winds. Data available for summer seasons in 1998-99 and 1999-00 from a weather station installed near the penguin colony suggest prevailing summer winds at Edmonson Point come from the east, southeast and south. Daily average wind speeds were generally in the range of 3-6 knots, with daily maximums usually being of 6-10 knots, occasionally reaching up to 25-35 knots. Daily average air temperatures ranged from around -15°C in October, -6°C in November, -2.5°C in December to -1°C in January, decreasing to -3.5°C again in February (Olmastroni, pers. comm., 2000). The highest daily maximum in the two summer periods was recorded as 2.6°C on 25 December 1998. The average air temperature recorded over both summers was approximately -4°C, while the average wind speed was 4.5 knots. Average daily relative humidity generally ranged between 40-60%.

Geology and soils

The geology at Edmonson Point is derived from Cenozoic eruptive activity of Mount Melbourne (Melbourne Volcanic Province), part of the McMurdo Volcanic Group (Kyle, 1990), combined with glacial deposits from the marine-based ice sheet that covered much of the Victoria Land coastline during the last glacial maximum (7500 to 25000 years B.P.) (Baroni and Orombelli, 1994). The volcanic complex at Edmonson Point is composed of a large subaerial tuff ring, scoria cones, lava flows, and subaquatic megapillow lava sequences (Wörner and Viereck, 1990). The rocks are mainly of basaltic and/or trachytic composition, and include various additional volcanic products, such as accumulations of tuffs, pumices and debris deposits (Simeoni *et al.,* 1989; Bargagli *et al.,* 1997). The ground surface is composed mainly of dry, coarse-textured volcanic materials with a low proportion of silt and clay (Bargagli *et al.,* 1997). These exposed surfaces, as well as beneath the surfaces of stones and boulders, are often coated with white encrustations or efflorescences of soluble salts. Most of the ground is dark-coloured, with brownish or yellowish patches of scoria and tuffite. Unstable scree is common on hill slopes, which are dry and mostly unvegetated. Valley and basin floors are covered by fine scoria and coarse sand (Bargagli *et al.,* 1999).

Geomorphology

A series of marine deposits are visible on the cuspate foreland at the northern extremity of Edmonson Point. The gently sloping raised beaches of the foreland are composed of differing ratios of sands, pebbles and boulders distributed over lava flows (Simeoni *et al.,* 1989). Numerous small crater-like pits, many containing melt-water or ice, can be observed just above the high tide mark in this locality; these are thought to have been formed by extreme tides and the melting of coastal ice accumulations. South of the cuspate foreland, volcanic bedrock exposures are common over much of the ground extending up to about 800 m inland from the coast, most evident in the prominent hills of about 120 m in height in the central northern part of Edmonson Point. A series of late-Pleistocene moraines and related tills lie on the western side of these exposures, with bands of Holocene ice-cored moraine, talus and debris slopes adjacent to the glacier ice which extends from Mount Melbourne (Baroni and Orombelli, 1994).

Streams and lakes

There are six lakes on Edmonson Point, ranging in length up to 350 m, and in area from approximately 1600 m^2 up to 15,000 m^2 (Map 2). Two further lakes occur behind the coastal ridge at Colline Ippolito, the largest of which is approximately 12,500 m^2 (Map 3). In addition, on Edmonson Point there are approximately 22 smaller ponds of diameters of less than 30 m (Broady, 1987). The larger ponds are permanently ice-covered, with peripheral moats forming during the summer. Detailed physico-chemical characteristics and limnology of the lakes of Edmonson Point are reported in Guilizzoni *et al*. (1991). There are numerous streams throughout the Area, some of which are supplied with meltwater from the adjacent ice sheet, while others are fed by lakes and general ice / snow melt. Several stream beds have flood terraces of fine soil covered by pumice-like pebbles of 5-10 mm diameter. Many of the streams and pools are transient, drying up shortly after the late snow patches in their catchments disappear.

Plant biology

Compared to several other sites in central Victoria Land, Edmonson Point does not have a particularly diverse flora, and there are only a few extensive closed stands of vegetation. Six moss species, one liverwort, and at least 30 lichen species have been recorded within the Area (Broady, 1987; Lewis Smith, 1996, 1999; Lewis Smith pers. comm., 2004; Castello, 2004). Cavacini (pers. comm., 2003) noted that recent analyses have identified at least 120 alga and cyanobacteria species present at

Edmonson Point. These are present in a range of forms including algal mats on soil and as epiphytes on mosses, and in a range of habitats such as in lakes, streams and snow, and on moist ornithogenic and raw mineral soils. At the onset of summer, snow melt reveals small stands of algae and moss on valley floors, although much of these lie buried by up to 5 cm of wind-blown and melt-washed fine mineral particles. This community is capable of rapid growth during December, when moisture is available and soil temperatures are relatively high, bringing shoot apices up to a centimetre above the surface as the surface accumulation of sand is washed or blown away. Increased water flow or strong winds can quickly bury these stands, although sufficient light for growth can penetrate 1-2 cm below the surface (Bargagli *et al.,* 1999).The principal moss communities occur on more stable substrata which are not subjected to burial by sand, for example in sheltered depressions or along the margins of ponds and meltwater streams, and seepage areas below late snow beds where moisture is available for several weeks. Some of these are among the most extensive stands found in continental Antarctica, being of up to 3000 m^2, most notably the stand of *Bryum subrotundifolium* (= *B. argenteum*) several hundred metres west of the main Adélie colony (Map 4). Other, less extensive, notable stands occur near the lake adjacent to the Adélie colony (Map 4), and smaller localized stands of *Ceratodon purpureus* (with relatively thick deposits of dead organic material) being found in a valley in the north of Edmonson Point and in the upper area of the principal stream in the northern ice-free area. Greenfield *et. al*. (1985) suggested that, apart from Cape Hallett, no area in the Ross Sea has a comparable abundance of plants, although in 1996 a similarly extensive area colonised almost exclusively by *Bryum subrotundifolium* (= *B. argenteum*) was discovered on Beaufort Island (ASPA No. 105), approximately 280 km to the south of Edmonson Point.

The moss-dominated communities comprise up to seven bryophyte species, several algae and cyanobacteria and, at the drier end of the moisture gradient, several lichens encrusting moribund moss (Lewis Smith, 1999; Bargagli *et al.,* 1999). There are mixed communities or zones of *Bryum subrotundifolium* (= *B. argenteum*), *B. pseudotriquetrum* and *Ceratodon purpureus*. In some wetter sites the liverwort *Cephaloziella varians* occurs amongst *C. purpureus*. Dry, very open, often lichen-encrusted moss communities usually contain *Hennediella heimii*, and often occur in hollows which hold small late snow patches. *Sarconeurum glaciale* occurs in a stable scree above the large lake in the south of the Area (Lewis Smith, 1996). The upper portions of moss colonies are often coated with white encrustations of soluble salts (Bargagli *et al.,* 1999).

The lichen communities are relatively diverse, with 24 species identified and at least six crustose species so far unidentified, although few are abundant (Castello, 2004; Lewis Smith, pers. comm. 2004). Epilithic lichens are generally sparse and not widespread, being mainly crustose and microfoliose species restricted to rocks used as skua perches and occasionally on stable boulders in scree, moist gullies and temporary seepage areas. Macrolichens are scarce, with *Umbilicaria aprina* and *Usnea sphacelata* found in a few places. The former species is more abundant on the gently sloping intermittently inundated outwash channels of Colline Ippolito, together with *Physcia* spp. and associated with small cushions of *Bryum subrotundifolium* (= *B. argenteum*) (Given, 1985, 1989), *B. pseudotriquetrum* and *Ceratodon purpureus* (Lewis Smith, pers comm. 2004). *Buellia frigida* is the most widespread crustose lichen on the hard lavas, but a distinct community of nitrophilous species occurs on rocks used as skua perches (*Caloplaca, Candelariella, Rhizoplaca, Xanthoria*). In gravelly depressions below late snow beds, moss turves are often colonised by encrusting cyanobacteria and ornithocoprophilic lichens (*Candelaria, Candelariella, Lecanora, Xanthoria*) and, where there is no bird influence, by the white *Leproloma cacuminum* (Lewis Smith, 1996).

Early work on the algal flora at Edmonson Point identified 17 species as Cyanophyta, 10 as Chrysophyta and 15 as Chlorophyta (Broady, 1987). More recent analyses (Cavacini, pers. comm., 2003) have identified 120 alga and cyanobacteria species, which is considerably more than the numbers of species of Cyanophyta (28), Chlorophyta (27), Bacillariophyta (25) and Xanthophyta

(5) recorded previously (Cavacini, 1997, 2001; Fumanti *et al.,* 1993, 1994a, 1994b; Alfinito *et al.,* 1998). Broady (1987) observed few areas of algal vegetation on ground surfaces; the most extensive were oscillatoriacean mats in moist depressions in areas of beach sand, which may have been temporary melt ponds prior to when the survey was undertaken. Similar mats were found adjacent to an area of moss with a *Gloeocapsa* sp. as an abundant associate. *Prasiococcus calcarius* was observed in the vicinity of the Adélie penguin colony, both as a small area of rich green crusts on soil and growing on an area of moribund moss cushions. Other epiphytic algae include Oscillatoriaceae, *Nostoc* sp., unicellular chlorophytes including *Pseudococcomyxa simplex*, and the desmid *Actinotaenium cucurbita*. Substantial stream algae were observed with waters containing oscillatoriacean mats over the stream beds, wefts of green filaments attached to the surface of stones (mainly *Binuclearia tectorum* and *Prasiola* spp.), small ribbons of *Prasiola calophylla* on the under-surfaces of stones, and dark brown epilithic crusts of cyanophytes (dominated by *Chamaesiphon subglobosus* and *Nostoc* sp.) coating boulders. Ponds present in beach sand contained *Chlamydomonas* sp. and cf. *Ulothrix* sp., while ponds fertilized by penguin and skua guano contained *Chlamydomonas* sp. and black benthic oscillatoriacean mats. Other ponds also contained rich benthic growths of Oscillatoriaceae, frequently associated with *Nostoc sphaericum*. Other abundant algae were *Aphanothece castagnei*, *Binuclearia tectorum*, *Chamaesiphon subglobosus*, *Chroococcus minutus*, *C. turgidus¸ Luticola muticopsis*, *Pinnularia cymatopleura*, *Prasiola crispa* (particularly associated with penguin colonies and other nitrogen-enriched habitats), *Stauroneis anceps*, various unicellular chlorophytes, and – in the highest conductivity pond in beach sand – cf. *Ulothrix* sp.

Algae and cyanobacteria are locally abundant in moist soils, and filaments and foliose mats of *Phormidium* spp. (dominant on patches of wet ground and in shallow lake bottoms), aggregates of *Nostoc commune* and a population of diatoms have been identified (Wynn-Williams, 1996; Lewis Smith pers. comm., 2004). The fungal species *Arthrobotrys ferox* has been isolated from moss species *Bryum pseudotriquetrum* (= *B. algens*) and *Ceratodon purpureus*. *A. ferox* produces an adhesive secretion which has been observed to capture springtails of the species *Gressittacantha terranova* (about 1.2 mm in length) (Onofri and Tosi, 1992).

Invertebrates

There is a high diversity of soil nematodes in the moist soils at Edmonson Point when compared to other areas described in Victoria Land. Nematodes found at Edmonson Point include *Eudorylaimus antarcticus, Monhysteridae* sp., *Panagrolaimus* sp., *Plectus antarcticus, P. frigophilus*, and *Scottnema lyndsayea* (Frati, 1997; Wall pers. comm., 2000). The latter species, previously only known from the McMurdo Dry Valleys, was found at Edmonson Point in 1995-96 (Frati, 1997). Less abundant are the springtails, most commonly *Gressittacantha terranova*, which was found under rocks and on soil and mosses in a number of moist microhabitats (Frati, 1997). Red mites (likely to be either *Stereotydeus* sp. or *Nanorchestes*, although species not identified) are common in aggregations beneath stones in moist habitats, and Collembola, rotifers, tardigrades and a variety of protozoans are also found (Frati *et al.,* 1996; Lewis Smith, 1996; Wall pers. comm., 2000; Convey pers. comm., 2003).

Breeding birds

Adélie penguins (*Pygoscelis adeliae*) breed in two groups near the coast in the central and eastern-most part of Edmonson Point, occupying an area of about 9000 m^2 (Map 4). The number of breeding pairs recorded between 1981-2005 is summarised in Table 1, the average number in this period being 1808. In 1994-95 the majority of birds were recorded to arrive around 30-31 October, while the majority of the season's chicks had fledged by 12 February, with fledging complete by 21 February (Franchi *et al.,* 1997). An abandoned nesting site, occupied approximately 2600-3000 years ago, lies about 1 km to the northwest of the current colony, on bedrock adjacent to the cuspate foreland (Baroni and Orombelli, 1994).

Table 1. Adélie penguins (breeding pairs) at Edmonson Point 1981-2005 (data Woehler, 1993; Olmastroni, 2005, *pers. comm*.).

Year	No. of breeding pairs
1981	1300
1984	1802
1987	2491
1989	1792
1991	1316
1994	1960
1995	1935
1996	1824
1997	1961
1999	2005
2001	1988
2003	2588
2005	2091

A breeding colony of south polar skuas (*Catharacta maccormicki*) within the Area is one of the most numerous in Victoria Land, with over 120 pairs, of which 36 pairs occupy Colline Ippolito (CCAMLR, 1999; Pezzo *et al*., 2001; Volpi, 2005. Pers. comm.). Furthermore the Area includes two "club sites", nearby large freshwater ponds, used throughout the breeding seasons by groups of non-breeders ranging between 50 and 70 individuals (Pezzo 2001; Volpi 2005 pers. comm.). Flocks of snow petrels (*Pagodroma nivea*) have been observed flying over the Area, and Wilson's storm petrels (*Oceanites oceanicus*) have been sighted regularly. Neither of these latter two species is known to breed within the Area.

Breeding mammals

At Edmonson Point numerous (>50) Weddell seals (*Leptonychotes weddellii*) regularly breed in the near shore marine environment (on fast ice) within the Area. Females use this area to give birth and raise pups on the fast ice along the coastline of the whole Area. Later in the summer Weddell seals frequently haul out on beaches within the Area.

Scientific research

CCAMLR Ecosystem Monitoring Programme (CEMP) Studies

1. The presence at Edmonson Point of breeding penguin colonies and the absence of krill fisheries within their foraging range make this a critical site for comparative studies and inclusion with other CEMP sites in the ecosystem monitoring network established to meet the objectives of CCAMLR. The purpose of protected area designation is to allow planned research and monitoring to proceed, while avoiding or reducing, to the greatest extent possible, other activities which could interfere with or affect the results of the research and monitoring programme or alter the natural features of the site.

2. The Adélie penguin is a species of particular interest for CEMP routine monitoring and directed research at this site. For this purpose the Adélie Penguin Monitoring Program, a joint research project between Italian and Australian biologists, has been ongoing at Edmonson Point since 1994-95. An Automated Penguin Monitoring System (APMS) along with on-site observations by researchers, forms the basis of a study of at least 500-600 nests within the northern sector of the colony as part of the CEMP (CCAMLR, 1999; Olmastroni *et al*., 2000). Fences have been installed to direct penguins over a bridge which registers their weight, identity and crossing direction as they move between the sea and their breeding colony.

3. Parameters routinely monitored include trends in population size (A3), demography (A4), duration of foraging trips (A5), breeding success (A6), chick fledging weight (A7), chick diet (A8) and breeding chronology (A9).

4. The studies on Adélie penguins also involve population monitoring, experiments with satellite transmitters and temperature-depth recorders to investigate foraging location and duration. Combined with stomach flushing to record the diet of monitored penguins, this programme is developing comprehensive observations of the Adélie penguin feeding ecology (Olmastroni, 2002). Diet data (Olmastroni *et al*., 2004) confirmed the results of studies from krill distribution in the Ross Sea (Azzali and Kalinowski, 2000; Azzali *et al.,* 2000) and indicate that this colony is located at a transition point in the availability of *E. superba* between northern and more southerly colonies where this species is absent or rare in the diet of penguins (Emison, 1968; Ainley, 2002). These studies also highlighted the importance of fish to the diet of the Adélie penguin, which represented up to 50% of stomach contents in some years.

Local sea ice and weather data contribute to the understanding of possible factors affecting the breeding biology of this species (Olmastroni *et al*., 2004). Moreover behavioural studies are also part of the research (Pilastro *et al.,* 2001).

Research on the south polar skua colony focuses on breeding biology (Pezzo *et al*., 2001), population dynamics, biometry, reproductive biology and migratory patterns. Since 1998/99 more than 300 south polar skuas have been banded by metal and coloured rings, which facilitate field research that requires the recognition of individual birds and will allow for identification of birds migrating from the Area.

Other scientific activities

Studies of terrestrial ecology at Edmonson Point were initiated in the 1980s, although this type of research and other forms of science increased in the 1990s, in particular by Italian scientists. Edmonson Point was the location of BIOTEX 1, the first SCAR Biological Investigation of Antarctic Terrestrial Ecosystems (BIOTAS) research expedition, during December 1995 and January 1996. Ten researchers from three countries participated in a variety of scientific projects which included: taxonomic, ecological, physiological and biogeographical studies on cyanobacteria, algae, bryophytes, lichens (including chasmolithic and endolithic communities), nematodes, springtails and mites; studies of soil and freshwater biogeochemistry; microbial metabolic activity and colonisation studies; and investigations into the photosynthetic responses to ambient and controlled conditions of mosses, lichens and plant pigments that may act as photoprotectants (Bargagli, 1999). While the BIOTAS programme has now formally concluded, it is expected that further studies of this type will be on-going at Edmonson Point.

Human activities / impacts

Edmonson Point was probably first visited on 6 February 1900 when Carsten Borchgrevink landed just north of Mount Melbourne on "a promontory almost free of snow .... about 100 acres in extent" and climbed about 200 m up the slopes (Borchgrevink, 1901: 261). The Wood Bay region was rarely mentioned during the following 70 years, and presumably was visited only infrequently. Activity in the area increased in the 1980s, first with visits by the GANOVEX expeditions (Germany). Botanical research was undertaken in December 1984 (Given, 1985; Greenfield *et. al*., 1985; Broady, 1987) and in January 1989, at which time the first proposals for special protection of the site were made (Given, 2003. Pers. comm.). Italy established a station in close proximity at Terra Nova Bay in 1986-87 and increased research interest in the site followed.

The modern era of human activity at Edmonson Point has been largely confined to science. The impacts of these activities have not been described, but are believed to be minor and limited to items such as campsites, footprints, markers of various kinds, human wastes, scientific sampling, handling of limited numbers of birds (e.g. installation of devices to track birds, stomach lavage, biometric measurements, etc), and potentially some impacts associated with helicopter access and installation and operation of camp and research facilities at the penguin colony and on the northern cuspate foreland. At least one fuel spill of around 500 ml, and other smaller spills, were reported in 1996 as a result of refuelling operations at the generator and fuel store located at the penguin colony (see disturbed sites marked on Map 4). In addition, seaborne litter is occasionally washed onto beaches within the Area. The Restricted Zone at Colline Ippolito has received less human activity than Edmonson Point and impacts in this area are expected to be negligible.

6(ii) Restricted and managed zones within the Area

Restricted Zone

The ice-free area of Colline Ippolito (1.12 km^2) approximately 1.5 km north-west of Edmonson Point is designated as a Restricted Zone in order to preserve part of the Area as a reference site for future comparative studies, while the remainder of the terrestrial Area (which is similar in biology, features and character) is more generally available for research programmes and sample collection. The northern, western and southern boundaries of the Restricted Zone are defined as the margins of the permanent ice extending from Mount Melbourne, and are coincident with the boundary of the Area (Maps 1 and 3). The eastern boundary of the Restricted Zone is the mean low water level along the coastline of this ice-free area.

Access to the Restricted Zone is allowed only for compelling scientific reasons or management purposes (such as inspection or review) that cannot be served elsewhere within the Area.

6(iii) Structures within and near the Area

CEMP Site: A fibreglass cabin for field observation, containing instrumentation and APMS panel, and two Nunsen huts for 4 people were installed by PNRA in 1994/95 to support CEMP research. These structures are located on a rocky knoll at an elevation of 16 m, 80 m from the coast and 40 m south of the northern sub-colony of penguins (Maps 2 and 4). At the beginning of each field season a generator and a number of fuel drums are temporarily stored about 20 m from the camp and removed at the end of each season. Adjacent to the northern penguin sub-colony, fences of metal net (30-50 cm) have been installed to direct penguins over the APMS weigh bridge.

Other activities: Approximately 50 plastic cloches were installed at 10 locations throughout the Area in 1995-96 as part of BIOTEX-1 (Maps 2 and 4). A number of additional cloches were installed the previous year at four locations (Wynn-Williams, 1996). It is not precisely known how many of

these cloches remain within the area. Temporary camp facilities were installed at the location of the designated camp site for the duration of the BIOTEX-1 programme, which have now been removed.

The nearest permanent stations are Mario Zucchelli Station at Terra Nova Bay (Italy) and Gondwana Station (Germany), which lie approximately 50 km and 45 km south respectively.

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

The nearest protected areas to Edmonson Point are the summit of Mount Melbourne (ASPA No. 118), which lies 13 km to the west, and a marine area at Terra Nova Bay (ASPA No. 161), which lies approximately 52 km to the south (Map 1, Inset 2).

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 scientific research on the Area, or for compelling scientific reasons that cannot be served elsewhere; or
- it is issued for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- access to the Restricted Zone is allowed only for compelling scientific reasons or management purposes (such as inspection or review) that cannot be served elsewhere within the Area;
- the actions permitted will not jeopardise the ecological 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 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

Access to the Area shall be by small boat, on foot or by helicopter. Movement over land within the Area shall be on foot or by helicopter. Access to the Area by vehicle is restricted according to the conditions described below.

Small boat access

The Edmonson Point part of the Area may be entered at any point where pinnipeds or seabird colonies are not present on or near the beach. Access for purposes other than CEMP research should avoid disturbing pinnipeds and seabirds (Map 1 and 2). There are no special restrictions on landings from the sea, although when accessing the main ice-free area of Edmonson Point visitors shall land at the northern cuspate foreland and avoid landing at breeding bird colonies (Map 2).

Restricted conditions of vehicle access

Use of vehicles within the Area is prohibited, except at the southern boundary of the Area where they may be used on sea ice to gain access to the shore, from where visitors shall proceed on foot. Thus, vehicle use shall avoid interference with animal feeding routes and the Adélie penguin colony. When using vehicles on sea ice, care should be exercised to avoid Weddell seals which may be present: speed should be kept low and seals shall not be approached by vehicle closer than 50 m. Access over land by vehicles is allowed to the boundary of the Area. Vehicle traffic shall be kept to the minimum necessary for the conduct of permitted activities.

Aircraft access and overflight

All restrictions on aircraft access and overflight stipulated in this plan shall apply during the period 15 October–20 February inclusive. Aircraft may operate and land within the Area according to strict observance of the following conditions:

(i) All overflight of the Area for purposes other than access shall be conducted according to the height restrictions imposed in the following table:

Minimum overflight heights within the Area according to aircraft type.

Aircraft type	Number of Engines	Minimum height above ground	
		Feet	Metres
Helicopter	1	*2461*	750
Helicopter	2	*3281*	1000
Fixed-wing	1 or 2	*1476*	450
Fixed-wing	4	*3281*	1000

(ii) Helicopter landing is normally allowed at only three designated sites (Maps 1-4). The landing sites with their coordinates are described as follows:

(A) shall be used for most purposes, located on the northern cuspate foreland of Edmonson Point (Map 2) (74°19’24"S, 165°07’12"E);

(B) is allowed in support of the Adélie Penguin Monitoring Programme when necessary for transport of heavy equipment / supplies (Map 2) (74°19’43"S, 165°07’57"E); and

(C) is allowed for access to the Restricted Zone, located at the northern ice-free area (Colline Ippolito, Map 3) (74°18’50"S, 165°04’29"E).

(iii) In exceptional circumstances, helicopter access may be specifically authorised elsewhere within the Area for the purpose of supporting science or management according to conditions imposed by the Permit on access location(s) and timing. Landing of helicopters at sites of mammals and seabird sites and significant vegetation shall be avoided at all times (Maps 2-4).

(iv) The designated aircraft approach route is from the west of the Area, from over the lower eastern ice slopes of Mount Melbourne (Maps 1-3). Aircraft shall approach the main designated landing site (A) on the cuspate foreland from the north-west over or near Baia Siena (Siena Bay). When appropriate, access to landing site (B) should follow the same route and proceed a further 700 m SE. The departure route is identical in reverse.

(v) When appropriate, access to landing site (C) should be from the lower eastern ice slopes of Mount Melbourne and proceed directly to the landing site from the south over the land or where this is not feasible over Baia Siena (Siena Bay), avoiding skuas nesting to the north of the landing site;

(vi) Use of smoke grenades to indicate wind direction is prohibited within the Area unless absolutely necessary for safety, and any grenades used should be retrieved.

Foot access and movement within the Area

Movement on land within the Area shall be on foot. Visitors should move carefully so as to minimise disturbance to the breeding birds, soil, geomorphological features and vegetated surfaces, and should walk on rocky terrain or ridges if practical to avoid damage to sensitive plants and the often waterlogged soils. 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. Pedestrians that are not undertaking research or management related to the penguins shall not enter the colonies and should maintain a separation distance from the breeding birds of at least 15 m at all times. Care should be exercised to ensure monitoring equipment, fences and other scientific installations are not disturbed.

Pedestrians moving between the helicopter landing sites (A) or (B) to the Adélie colony shall follow the preferred walking routes marked on Maps 2 and 4 or follow a route along the beach.

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

- The research programme associated with the CCAMLR CEMP
- Scientific research that will not jeopardise the ecosystem of the Area;
- Essential management activities, including monitoring.

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 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 to the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit. Permanent structures are prohibited.

7(iv) Location of field camps

Semi-permanent camps and temporary camping is permitted within the Area at the primary designated site on the cuspate foreland of Edmonson Point (Map 2). Camping at the CEMP Research camp (Maps 2 & 4) is permitted only for purposes of the Adélie Penguin Monitoring Programme. When necessary within the Restricted Zone for purposes specified in the Permit, temporary camping is permitted at the designated site (C) (74°18’51"S, 165°04’16"E) approximately 100 m west of helicopter landing site (Map 3).

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 against accidental introductions. In view of the presence of breeding bird colonies at Edmonson Point, no poultry products, including products containing uncooked dried eggs, including wastes from such products, shall be released 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 authorised by Permit for specific scientific or management purposes. Fuel spill clean-up equipment should be made available for use at locations where fuel is being regularly handled. 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 or 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 rock, soil, native flora or fauna that their distribution or abundance on Edmonson Point 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, except human wastes, shall be removed from the Area. Human wastes shall either be removed from the Area, or incinerated using purpose-designed technologies such as a propane-burning toilet, or in the case of liquid 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

1. 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.

2. Any specific long-term monitoring sites shall be appropriately marked.

3. To help maintain the ecological and scientific values of Edmonson Point 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 thoroughly cleaned. 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.

8. Bibliography

Ainley, D.G. 2002. *The Adélie Penguin. Bellwether of climate change*. Columbia University Press, New York.

Alfinito, S., Fumanti, B. and Cavacini, P. 1998. Epiphytic algae on mosses from northern Victoria Land (Antarctica). *Nova Hedwigia* 66 (3-4): 473-80.

Ancora, S., Volpi, V., Olmastroni, S., Leonzio, C. and Focardi, S. 2002. Assumption and elimination of trace elements in Adélie penguins from Antarctica: a preliminary study. *Marine Environmental Research* 54: 341-44.

Azzali M. and J. Kalinowski. 2000. Spatial and temporal distribution of krill *Euphausia superba* biomass in the Ross Sea. In: Ianora A. (ed). *Ross Sea Ecology*. Springer, Berlin, 433-455.

Azzali M., J. Kalinowski, G. Lanciani and G. Cosimi. 2000. Characteristic Properties and dynamic aspects of krill swarms from the Ross Sea. In: Faranda F. G.L., Ianora A. (Ed). *Ross Sea Ecology*. Springer, Berlin, 413-431.

Bargagli, R., Martella, L. and Sanchez-Hernandez, J.C. 1997. The environment and biota at EdmonsonPoint (BIOTEX 1): preliminary results on environmental biogeochemistry. In di Prisco, G., Focardi, S. and Luporini, P. (eds) *Proceed. Third Meet. Antarctic Biology,* Santa Margherita Ligure, 13-15 December 1996. Camerino University Press: 261-71.

Bargagli, R. 1999. Report on Italian activities. *BIOTAS Newsletter* No. 13. Austral Summer 1998/ 99. A.H.L. Huiskes (ed) Netherlands Institute of Ecology: 16-17.

Bargagli, R., Sanchez-Hernandez, J.C., Martella, L. and Monaci, F. 1998. Mercury, cadmium and lead accumulation in Antarctic mosses growing along nutrient and moisture gradients. *Polar Biology* 19: 316-322.

Bargagli, R., Smith, R.I.L., Martella, L., Monaci, F., Sanchez-Hernandez, J.C. and Ugolini, F.C. 1999. Solution geochemistry and behaviour of major and trace elements during summer in a moss community at Edmonson Point, Victoria Land, Antarctica. *Antarctic Science* 11(1): 3-12.

Bargagli, R., Wynn-Williams, D., Bersan, F., Cavacini, P., Ertz, S., Freckman, D. Lewis Smith, R., Russell, N. and Smith, A. 1997. Field Report – BIOTEX 1: First BIOTAS Expedition (Edmonson Point – Baia Terra Nova, Dec 10 1995 – Feb 6 1996). *Newsletter of the Italian Biological Research in Antarctica* 1 (Austral summer 1995-96): 42-58.

Baroni, C. and Orombelli, G. 1994. Holocene glacier variations in the Terra Nova Bay area (Victoria Land, Antarctica). *Antarctic Science* 6(4): 497-505.

Broady, P.A. 1987. A floristic survey of algae at four locations in northern Victoria Land. *New Zealand Antarctic Record* 7(3): 8-19.

Borchgrevink, C. 1901. *First on the Antarctic Continent: Being an Account of the British Antarctic Expedition 1898-1900.* G. Newnes. Ltd, London.

Cannone, N. and Guglielmin, M. 2003. Vegetation and permafrost: sensitive systems for the development of a monitoring program of climate change along an Antarctic transect. In: Huiskes, A.H.L., Gieskes, W.W.C., Rozema, J., Schorno, R.M.L., Van der Vies, S.M., Wolff, W.J. (Editors) *Antarctic biology in a global context*. Backhuys, Leiden: 31-36

Cannone, N., Guglielmin, M., Ellis Evans J.C., and Strachan R. in prep. Interactions between climate, vegetation and active layer in Maritime Antarctica. (submitted to *Journal of Applied Ecology*)

Cannone, N., Guglielmin, M., Gerdol, R., and Dramis, F. 2001. La vegetazione delle aree con permafrost per il monitoraggio del Global Change nelle regioni polari ed alpine. Abstract and Oral Presentation, 96à Congresso della Societa Botanica Italiana, Varese, 26-28 Settembre 2001.Castello, M. 2004. Lichens of the Terra Nova Bay area, northern Victoria Land (continental Antarctica). *Studia Geobotanica* 22: 3-54.

Cavacini, P. 1997. La microflora algale non marina della northern Victoria Land (Antartide). Ph.D. Thesis. Università "La Sapienza" di Roma. 234 pp.

Cavacini, P. 2001. Soil algae from northern Victoria Land (Antarctica). *Polar Bioscience* 14: 46-61.

CCAMLR. 1999. Report of member's activities in the Convention Area 1998/99: Italy. CCAMLR-XVIII/MA/14.

Clarke, J., Manly, B., Kerry, K., Gardner, H., Franchi, E. and Focardi, S. 1998. Sex differences in Adélie penguin foraging strategies. *Polar Biology* 20: 248-58.

Corsolini, S. and Trémont, R. 1997. Australia-Italy cooperation in Antarctica: Adélie Penguin monitoring program, Edmonson Point, Ross Sea Region. *Newsletter of the Italian Biological Research in Antarctica* 1 (Austral summer 1995-96): 59-64.

Corsolini, S., Ademollo, N., Romeo, T., Olmastroni, S. and Focardi, S. 2003. Persistent organic pollutants in some species of a Ross Sea pelagic trophic web. *Antarctic Science* 15(1): 95-104.

Corsolini, S., Kannan, K., Imagawa, T., Focardi, S. and Giesy J.P. 2002. Polychloronaphthalenes and other dioxin-like compounds in Arctic and Antarctic marine food webs. *Environmental Science and Technolology* 36: 3490-96.

Corsolini, S., Olmastroni, S., Ademollo, N. and Focardi, S. 1999. Concentration and toxic evaluation of polychlorobiphenyls (PCBs) in Adélie Penguin (*Pygoscelis adeliae*) from Edmonson Point (Ross Sea, Antarctica). Tokyo 2-3 December 1999.

Emison, W. B. 1968. Feeding preferences of the Adélie penguin at Cape Crozier, Ross Island. Antarctic Research Series 12: 191-212.

Ertz, S. 1996. BIOTEX field report: December 1995 – February 1996. Strategies of Antarctic terrestrial organisms to protect against ultra-violet radiation. Unpublished field report in BAS Archives AD6/2/1995/NT3.

Fenice M., Selbmann L., Zucconi L. and Onofri S. 1997. Production of extracellular enzymes by Antarctic fungal strains. *Polar Biology* 17:275-280.

Franchi, E., Corsolini, S., Clarke, J.C., Lawless R. and Tremont, R. 1996. The three dimensional foraging patterns of Adélie penguins at Edmonson Point, Antarctica. Third International Penguin Conference, Cape Town, South Africa, 2-6 September 1996.

Franchi, E., Corsolini, S., Focardi, S., Clarke, J.C., Trémont, R. and Kerry, K.K. 1997. Biological research on Adélie penguin (*Pygoscelis adeliae*) associated with the CCAMLR Ecosystem Monitoring Program (CEMP). In di Prisco, G., Focardi, S. and Luporini, P. (eds) *Proceed. Third Meet. Antarctic Biology,* Santa Margherita Ligure, 13-15 December 1996. Camerino University Press: 209-19.

Frati, F. 1997. Collembola of the north Victoria Land: distribution, population structure and preliminary data for the reconstruction of a molecular phylogeny of Antarctic collembola. *Newsletter of the Italian Biological Research in Antarctica* 1 (Austral summer 1995-96): 30-38.

Frati F. 1999. Distribution and ecophysiology of terrestrial microarthropods in the Victoria Land. *Newsletter of the Italian Biological Research in Antarctica* 3: 13-19.

Frati F., Fanciulli P.P., Carapelli A. and Dallai R. 1997. The Collembola of northern Victoria Land (Antarctica): distribution and ecological remarks. *Pedobiologia* 41: 50-55.

Frati F., Fanciulli P.P., Carapelli A., De Carlo L. and Dallai R. 1996. Collembola of northern Victoria Land: distribution, population structure and preliminary molecular data to study origin and evolution of Antarctic Collembola. Proceedings of the 3rd Meeting on Antarctic Biology, G. di Prisco, S. Focardi and P. Luporini eds., Camerino Univ. Press: 321-330.

Fumanti, B., Alfinito, S. and Cavacini, P. 1993. Freshwater algae of Northern Victoria Land (Antarctica). *Giorn. Bot. Ital.,* 127 (3): 497.

Fumanti, B., Alfinito, S. and Cavacini, P. 1994a. Freshwater diatoms of Northern Victoria Land (Antarctica). 13th International Diatom Symposium, 1-7 September 1994, Acquafredda di Maratea (PZ), Italy, Abstract book: 226.

Fumanti, B., Alfinito, S. and Cavacini, P. 1994b. Floristic survey of the freshwater algae of Northern Victoria Land (Antarctica). Proceedings of the 2nd meeting on Antarctic Biology, Padova, 26-28 Feb. 1992. Edizioni Universitarie Patavine: 47-53.

Guilizzoni P., Libera V., Tartagli G., Mosello R., Ruggiu D., Manca M., Nocentini A, Contesini M., Panzani P., Beltrami M. 1991. Indagine per una caratterizzazione limnologica di ambienti lacustri antartici. Atti del 1° Convegno di Biologia Antartica. Roma CNR, 22-23 giu. 1989. Ed. Univ. Patavine: 377-408.Given, D.R. 1985. Fieldwork in Antarctica, November – December 1984. Report 511b. Botany Division, DSIR, New Zealand.

Given, D.R. 1989. A proposal for SSSI status for Edmonson Point, north Victoria Land. Unpublished paper held in PNRA Archives.

Greenfield, L.G., Broady, P.A., Given, D.R., Codley, E.G. and Thompson, K. 1985. Immediate science report of NZARP Expedition K053 to RDRC. Botanical and biological studies in Victoria Land and Ross Island, during 1984–85.

Harris, C.M. and Grant, S.M. 2003. Science and management at Edmonson Point, Wood Bay, Victoria Land, Ross Sea: Report of the Workshop held in Siena, 8 June 2003. Includes Science Reviews by R. Bargagli, N. Cannone & M. Guglielmin, and S. Focardi. Cambridge, *Environmental Research and Assessment.*

Keys, J.R., Dingwall, P.R. and Freegard, J. (eds) 1988. *Improving the Protected Area system in the Ross Sea region, Antarctica*: Central Office Technical Report Series No. 2. Wellington, NZ Department of Conservation.

Kyle, P.R. 1990. A.II. Melbourne Volcanic Province. In LeMasurier, W.E. and Thomson, J.W. (eds) Volcanoes of the Antarctic Plate and Southern Oceans. *Antarctic Research Series* 48: 48-52.

La Rocca N., Moro I. and Andreoli, C. 1996. Survey on a microalga collected from an Edmonson Point pond (Victoria Land, Antarctica). *Giornale Botanico Italiano*, 130:960-962.

Lewis Smith, R.I. 1996. BIOTEX 1 field report: December 1995 – January 1996: plant ecology, colonisation and diversity at Edmonson Point and in the surrounding region of Victoria Land, Antarctica. Unpublished field report in BAS Archives AD6/2/1995/NT1.

Lewis Smith, R.I. 1999. Biological and environmental characteristics of three cosmopolitan mosses dominant in continental Antarctica. *Journal of Vegetation Science* 10: 231-242.

Melick D.R. and Seppelt R.D. 1997. Vegetation patterns in relation to climatic and endogenous changes in Wilkes Land, continetal Antarctica. *Journal of Ecology* 85: 43-56.

Meurk, C.D., Given, D.R. and Foggo, M. N. 1989. Botanical investigations at Terra Nova Bay and Wood Bay, north Victoria Land. 1988–89 NZARP Event K271 science report.

Olmastroni S, Pezzo F, Volpi V, Focardi S, 2004. Effects of weather and seaice on the reproductive performance of the Adélie penguin at Edmonson point, Ross Sea. *CCAMLR Science* 11: 99-109.

Olmastroni S, Pezzo F, Bisogno I., Focardi S, 2004. Interannual variation in the summer diet of Adélie penguin *Pygoscelis adeliae* at Edmonson Point . WG-EMM04/ 38.

Olmastroni S, Pezzo F, Volpi V, Corsolini S, Focardi S, Kerry K. 2001b. Foraging ecology of chick rearing of Adélie penguins in two colonies of the Ross Sea; 27/8-1/9 2001; Amsterdam, The Netherlands. SCAR.

Olmastroni, S. 2002. Factors affecting the foraging strategies of Adélie penguin (*Pygoscelis adeliae*) at Edmonson Point, Ross Sea, Antarctica. PhD Thesis, Università di Siena.

Olmastroni, S., Corsolini, S., Franchi, E., Focardi, S., Clarke, J., Kerry, K., Lawless, R. and Tremont, R. 1998. Adélie penguin colony at Edmonson Point (Ross Sea, Antarctica): a long term monitoring study. 31 August-September 1998; Christchurch, New Zealand. SCAR. p 143.

Olmastroni, S., Corsolini, S., Pezzo, F., Focardi, S. and Kerry, K. 2000. The first five years of the Italian-Australian Joint Programme on the Adélie Penguin: an overview. *Italian Journal of Zoology Supplement* 1: 141-45.

Onofri, S. and Tofi, S. 1992. *Arthrobotrys ferox* sp. nov., a springtail-capturing hyphomycete from continental Antarctica. *Mycotaxon* 44(2):445-451.Orombelli, G. 1988. Le spiagge emerse oloceniche di Baia Terra Nova (Terra Vittoria, Antartide). Rend. Acc. Naz. Lincei.

Pezzo, F., Olmastroni, S., Corsolini, S., and Focardi, S. 2001. Factors affecting the breeding success of the south polar skua *Catharacta maccormicki* at Edmonson Point, Victoria Land, Antarctica. *Polar Biology* 24:389-93.

Pilastro, A., Pezzo, F., Olmastroni, S., Callegarin, C., Corsolini, S. and Focardi, S. 2001. Extrapair paternity in the Adélie penguin *Pygoscelis adeliae*. *Ibis* 143: 681-84.

Ricelli A., Fabbri A.A., Fumanti B., Cavacini P., Fanelli C. 1997. Analyses of effects of ultraviolet radiation on fatty acids and a-tocopherol composition of some microalgae isolated from Antarctica. In di Prisco, G., Focardi, S., and Luporini P. (eds.), Proceedings of the 3rd meeting on "Antarctic Biology", S. Margherita Ligure, December 13-15, 1996. Camerino University Press: 239-247.

Simeoni, U., Baroni, C., Meccheri, M., Taviani, M. and Zanon, G. 1989. Coastal studies in northern Victoria Land (Antarctica): Holocene beaches of Inexpressible Island, Tethys Bay and Edmonson Point. *Bollettino di Oceanologia Teorica ed Applicata* 7(1-2): 5-17.

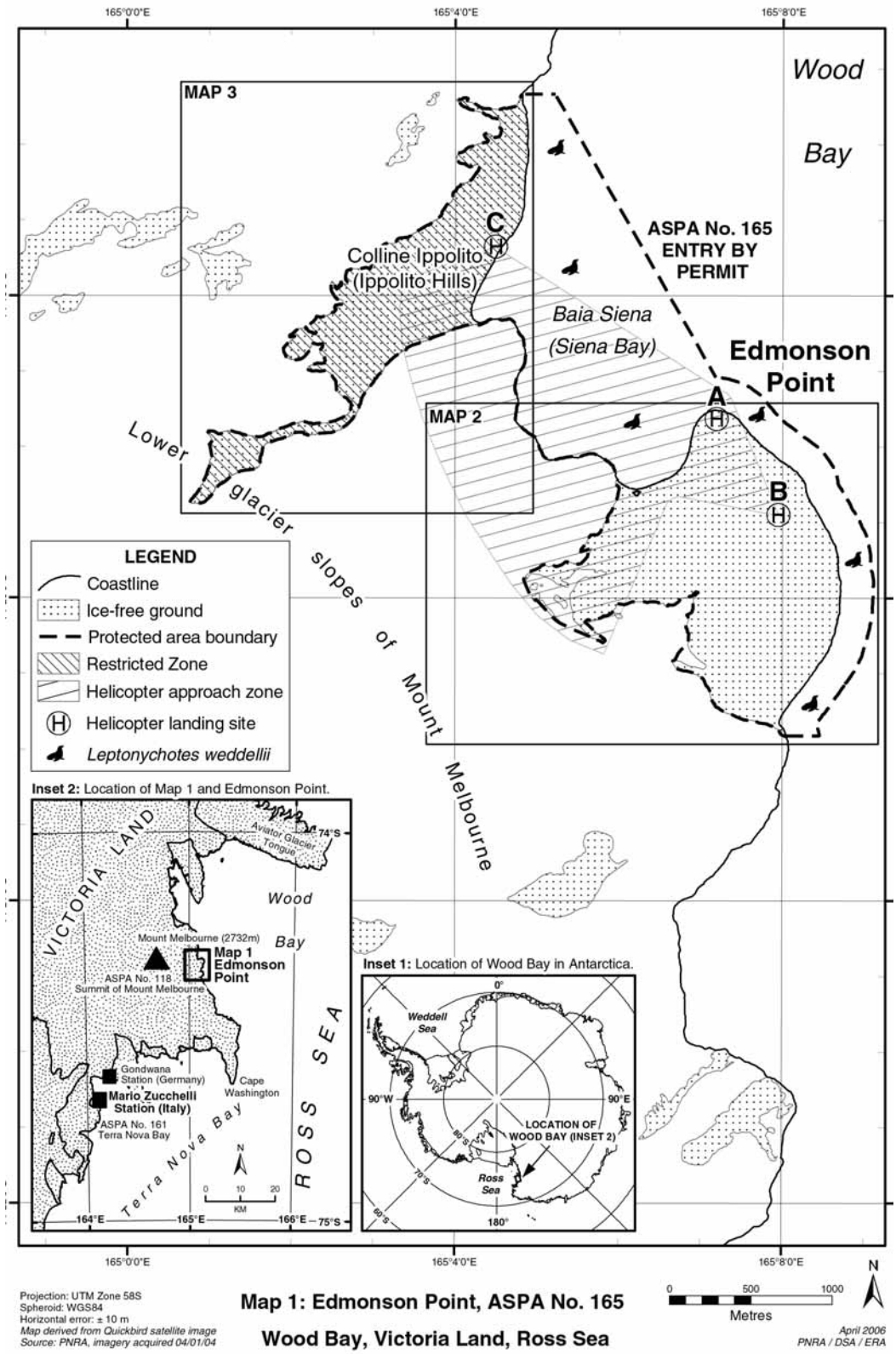
Taylor, R.H., Wilson, P.R. and Thomas, B.W. 1990. Status and trends of Adélie Penguin populations in the Ross Sea region. *Polar Record* 26:293-304.

Woehler, E.J. (ed) 1993. *The distribution and abundance of Antarctic and sub-Antarctic penguins.* SCAR, Cambridge.

Wörner, G. and Viereck, L. 1990. A.I0. Mount Melbourne. In Le Masurier, W.E. and Thomson, J.W. (eds) Volcanoes of the Antarctic Plate and Southern Oceans. *Antarctic Research Series* 48: 72-78.

Wynn-Williams, D.D. 1996. BIOTEX 1, first BIOTAS expedition: field report: Taylor Valley LTER Dec 1995, Terra Nova Bay Dec 1995 – Jan 1996: microbial colonisation, propagule banks and survival processes. Unpublished field report in BAS Archives AD6/2/1995/NT2.

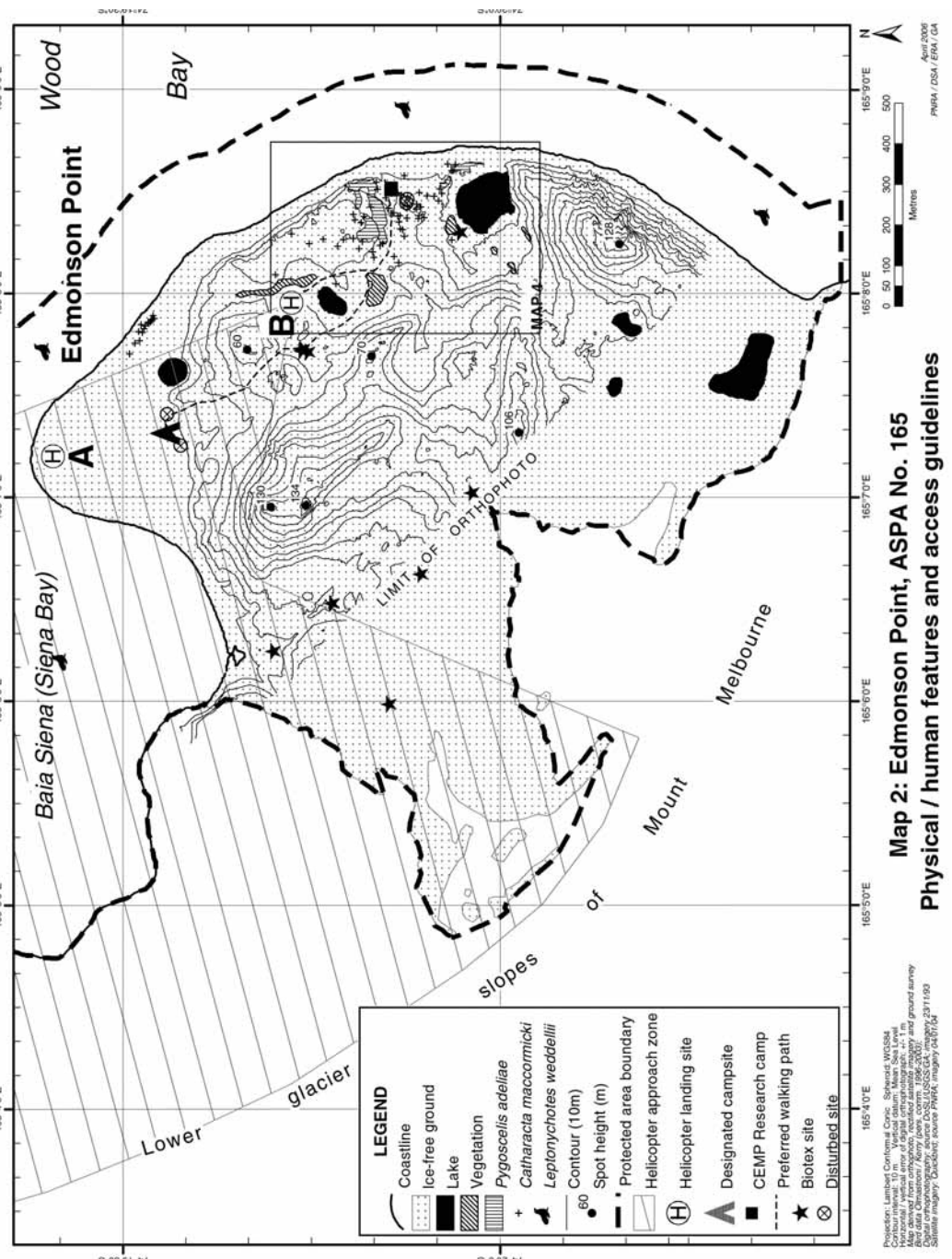
Zucconi L., Pagano S., Fenice M., Selbmann L., Tosi S., and Onofri S. 1996. Growth temperature preference of fungal strains from Victoria Land. *Polar Biology* 16: 53-61.

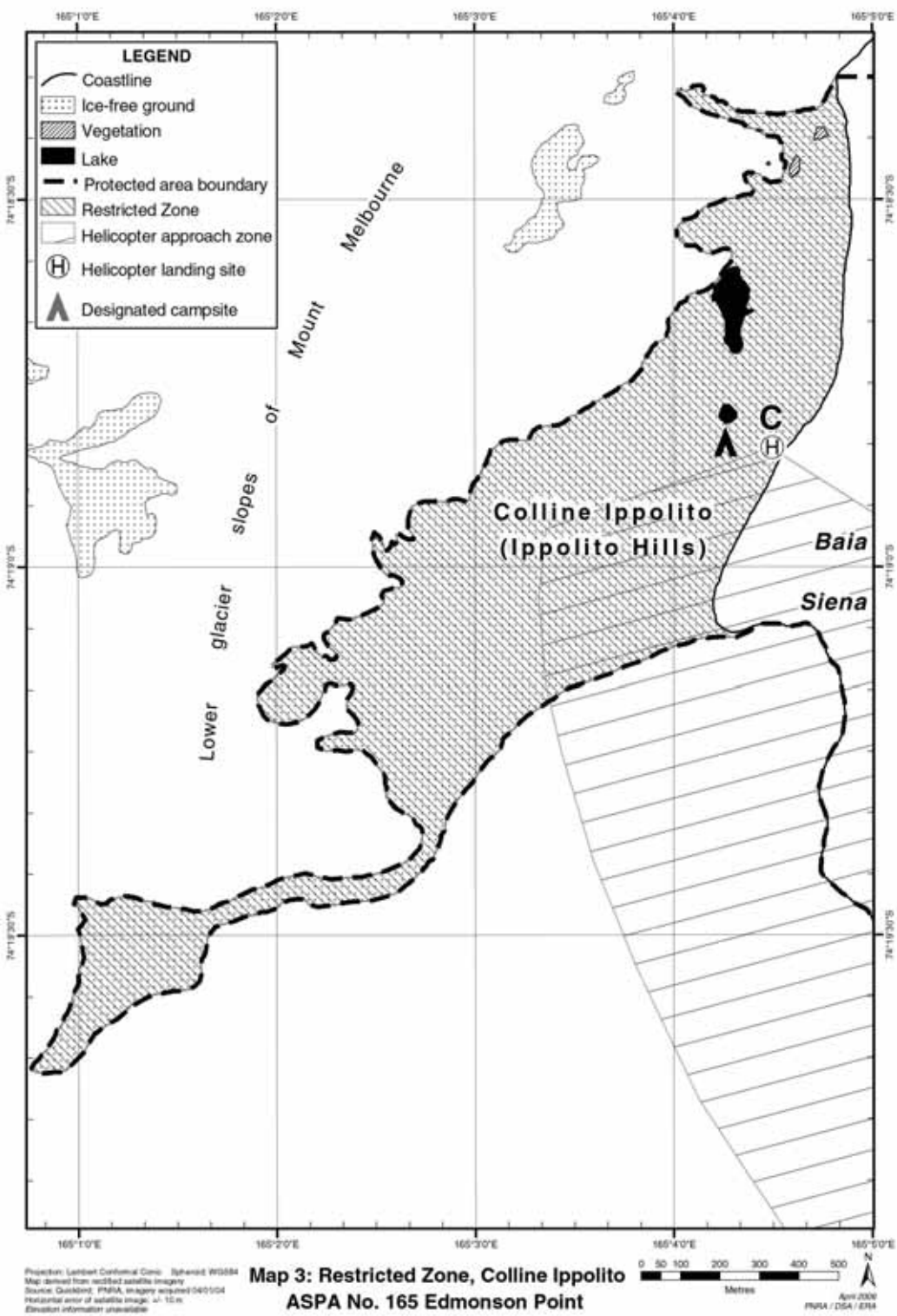


Projection: UTM Zone 58S
Spheroid: WGS84
Horizontal error: ± 10 m
Map derived from Quickbird satellite image
Source: PNRA, imagery acquired 04/01/04

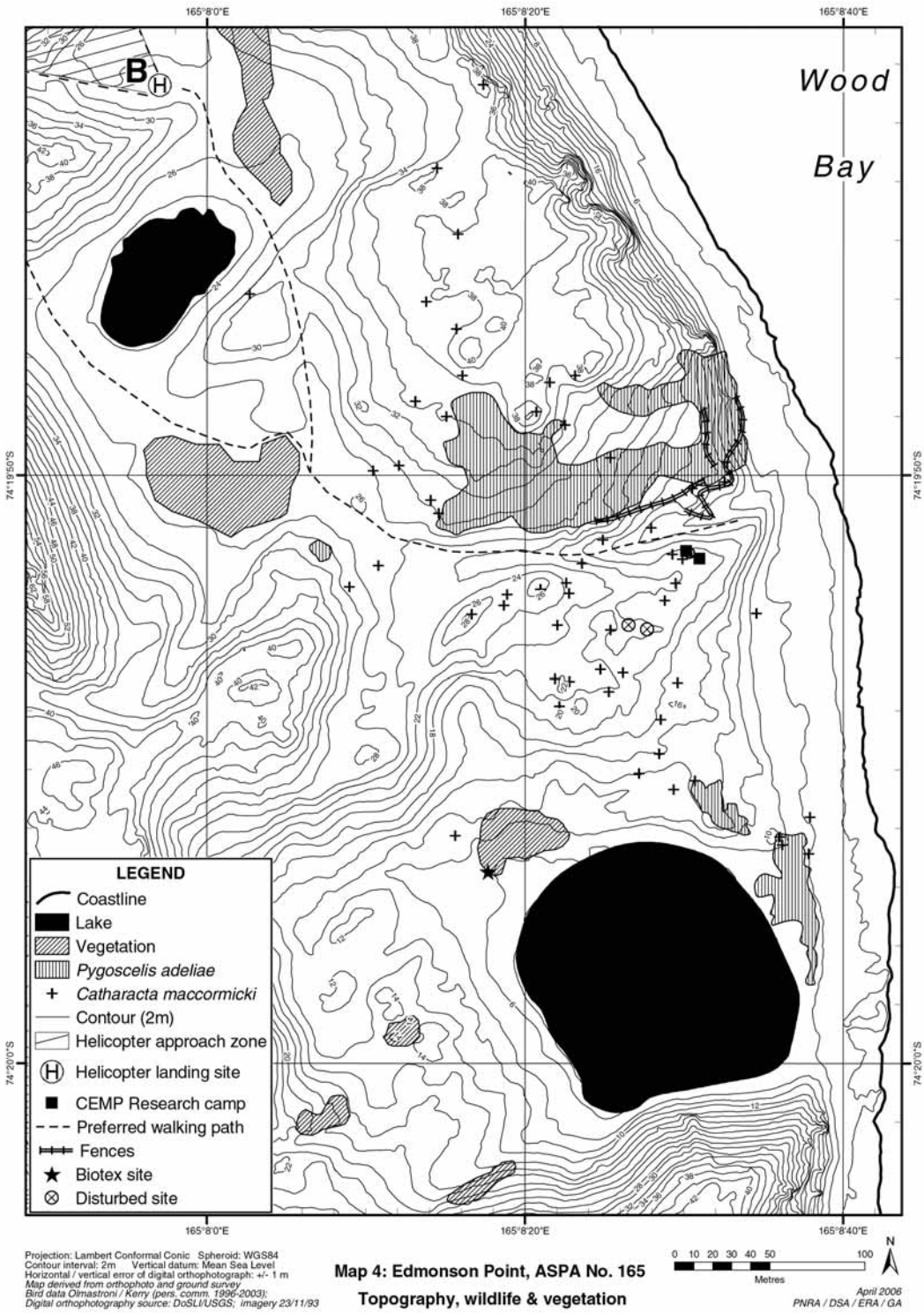
Map 1: Edmonson Point, ASPA No. 165
Wood Bay, Victoria Land, Ross Sea

April 2006
PNRA / DSA / ERA


Wood Bay
Edmonson Point
Baia Siena (Siena Bay)
Lower glacier slopes of Mount Melbourne
A
B
MAP 4
LIMIT OF ORTHOPHOTO
LEGEND
Coastline
Ice-free ground
Lake
Vegetation
Pygoscelis adeliae
Catharacta maccormicki
Leptonychotes weddellii
Contour (10m)
Spot height (m)
Protected area boundary
Helicopter approach zone
Helicopter landing site
Designated campsite
CEMP Research camp
Preferred walking path
Biotex site
Disturbed site
Metres
Map 2: Edmonson Point, ASPA No. 165
Physical / human features and access guidelines



Map 3: Restricted Zone, Colline Ippolito
ASPA No. 165 Edmonson Point


165°8'0"E
165°8'20"E
165°8'40"E
74°19'50"S
74°20'0"S
Wood
Bay
B
H
LEGEND
Coastline
Lake
Vegetation
Pygoscelis adeliae
Catharacta maccormicki
Contour (2m)
Helicopter approach zone
Helicopter landing site
CEMP Research camp
Preferred walking path
Fences
Biotex site
Disturbed site
Projection: Lambert Conformal Conic Spheroid: WGS84
Contour interval: 2m Vertical datum: Mean Sea Level
Horizontal / vertical error of digital orthophotograph: +/- 1 m
Map derived from orthophoto and ground survey
Bird data Olmastroni / Kerry (pers. comm. 1996-2003);
Digital orthophotography source: DoSLI/USGS; imagery 23/11/93
Map 4: Edmonson Point, ASPA No. 165
Topography, wildlife & vegetation
0 10 20 30 40 50 100
Metres
N
April 2006
PNRA / DSA / ERA / GA

Management Plan for Antarctic Specially Protected Area No. 166

PORT-MARTIN, TERRE-ADÉLIE

1. Description of values to be protected

Originally, the historical site of Port-Martin was designated as Historical Monument N° 46, proposed by France, in Recommendation XIII-16 (Brussels, 1985).

Brief historical summary

The building of a base in Terre-Adélie was programmed as Expedition TA21's main task. This expedition left Brest (France) in November 1948 and reached the pack ice on February 11, 1949. Due to unfavorable ice conditions, it was unable to come ashore.

A new expedition, named TA3, succeeded on January 18, 1950 and on January 20, the final site was selected for the construction of the new base. The site took the name of Port-Martin as a tribute to J.-A. Martin, a member of the expedition who died on board. A team of 11 men, under the leadership of André-Franck Liotard, raised the main building – a pre-cut wood frame, with oblique relieving posts – and then built several annexes to house mainly scientific activities (magnetism, geodesy, ionospheric sounding, atmospheric optics, biology, etc.) as well as meteorology. Radio transmission antennae and wind machine towers were raised in the open spaces in between these buildings, along with an emergency shelter.

On January 6, 1951, the 17 members of the T4 relief crew, under the leadership of Michel Barré, came ashore. They enlarged the main building while continuing and developing scientific activities.

Relief team T5, under the command of René Garcia, reached Port-Martin on January 14, 1952, while a reduced crew, led by Mario Marret (4 men in total), were building a secondary base on Petrel Island (Pointe Géologie Archipelago).

During the night of January 23 to 24, 1952, the main building at the Port-Martin base was destroyed by fire. The supply boat, which was still nearby, was able to evacuate the men, three of which joining the original four that were dropped off at Pointe Géologie where they joined Mario Marret's team. During that wintering season, the seven men of this rebuilt team carried out a raid on Port-Martin to recover various supplies – including the two Weasels – which had been left there.

Since then, only limited visits of at most a few hours were made to this base which is presumed to have been left as it was.

Building group

Today, what remains in Port-Martin are the ancillary buildings, including the shelter, a weather shelter and the coal and supply sheds. With snow covering the remains of the main station year-round, it is difficult to say precisely what was left after the fire. An archeological mission needs to be sent there to inventory what remains of the buildings and the furniture they contained. But the ancillary buildings, witnesses to the organization of a spatial base in Antarctica in the beginning of the 1950s, by themselves justify special protection.

In fact, Port-Martin is the perfect illustration of a base in Antarctica in the immediate post-war period, and its creation corresponds to the project of an International Geophysics Year. Yet, while it kept dog-sled transport from the Heroic Era, it borrowed Weasels (caterpillar tractors) from the

Mechanization Era. Its goals, however, were resolutely part of the Scientific Era since, in spite of its brief actual operation, some progress in the study of earth sciences, weather and ionosphere are associated with it. As such, the site has a historical and cultural importance.

The short duration of its operation left a "snapshot" of this history. No change – except for some superficial pillage – has altered its original implantations.

Furthermore, for future archeology, the site represents an optimal site to design methods and techniques adapted to extreme archeological investigation conditions. The site is partially covered in a snow that needs to be considered, conceptually, as a specific type of sediment. From the Port-Martin deposit, archeologists should be able to promote new concepts as well as a methodology adapted to it. These could be used for future archeological study of other sites in Antarctica.

Therefore, Port-Martin must be considered not only as a historical bridge site, but also as an original archeological field, the exploitation and evaluation of which will require the design of specific, exemplary techniques, a new, privileged area for international cooperation in the spirit of the Treaty.

2. Goals and objectives

The goal of this management plan is to ensure the protection of the area and of its characteristics in order to preserve its proven and potential values. Its main objectives can be spelled out as follows:

- Avoid the degradation of the area's values as well as potential risks to them, by
- Preserving the site's integrity, including though strict access regulation until specialists formulate appropriate investigation methods for its development and its opening to the greatest number, and
- Designing a conservation plan *a minima* for the surface artifacts (antenna and wind machine towers, shelter, weather and tower shelter, etc.)

3. Management activities

- A program of *in situ* conservation and maintenance of superstructures, including the shelter;
- A study program characterized by constant monitoring of artifacts' and structures' condition as well as of the factors which affect them;
    - through a study of weather data recorded during decades by an *in situ* automatic American station,
    - through automatic sensors transmitting relevant data on the various levels of snow stratigraphy
- An on-site and off-site conservation program for artifacts, including a surface objects inventory through :
    - cartography and recording of the disposal of historical artifacts around the shack,
    - recording other relevant historical data,
    - preparing a SIG
- National Antarctic program directors operating in the area or those interested in the area will carry out consultations to ensure application of these provisions.

4. Designation duration

The area shall remain an Antarctica's Specially Protected Area (ASPA) for an undetermined period.

5. Document, maps and reference photography

Annex A: Port-Martin – *Plan des environs de la base (originellement) au 1/300 par Paul Perroud, in* Vallette Y. et J. Dubois, *Terre-Adélie 1950-1952, Expéditions Polaires Françaises, Résultats techniques N° G.III, 53,* Paris 1955.

Annex B: *Carte Expéditions Polaires Françaises – Expéditions antarctiques 1948 – 1953: « Terre-Adélie – Port-Martin »,* 1/20 000.

Annex C: *Plan levé de 1950 à 1952 par les Expéditions antarctiques françaises* – 1/5000.

6. Definition of the Area

The area is centered on a point (geographic coordinates: 66°49'S/141°23'E) which corresponds to the marker known as the "Astrolabe pillar" located on the left hand side of the "refuge shelter" (see map in Annex A). The exact geographic points delineating the polygon, as described below and presented on the map in Annex A, may be added to the description of the area as soon as it has been surveyed by an ad hoc expedition.

6(i) Limits of the proposed Area

These limits are defined by the polygon drawn on the plan (annex A, scale 1/300). New maps will need to drawn in priority in order to tag the polygon's angles to the GPS differential.

In order to delineate the designated area, the polygon's angles lie on the outside boundary of the remains, going beyond them by approximately 6 metres. The remains are as follows:

- to the north: the pole of the ionospheric sensor's Trombone antenna, the wind machine tower NNW angle, the workshop's NNW angle, the workshop's ESE angle;
- to the west: the workshop's WSW angle, the supply shed's W angle, the wind machine tower's south angle;
- to the south: the wind machine tower's south angle, the meteorological tower's SSW angle, the pluviometer location (cote 20,60);
- to the east: the pluviometer (cote 20,60), the weather shelter's E angle, the pole of the ionospheric sensor's Trombone antenna.

Furthermore, the area includes a 200 m-wide band running parallel to the coast line as represent on the IGN 1/20 000 map (Annex B) and from Sphinx Mountain to Bold Mountain (Annex C) on the 1/5000 map (Drawn by the French Polar Expeditions in 1950/1952). Coastal presence of several landing points and, underwater, of a known shipwreck.

6(ii) Reserved access area inside the Area

The area that falls within the limits defined above and which includes the marine band shall be declared a reserved access area. All buildings and furnishing artifacts within the area are presumed to be of historical origin. The reserved access duration shall be limited to the end of the inventory work and expert evaluation of the land, onsite items of value and the archeological field.

6(iii) In-area buildings

All buildings inside the area are considered to be of historical origin.

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

There are no other protected areas within direct proximity of the area offered for classification.

7. Permit criteria

Access to the reserved area is forbidden without a permit delivered by a competent national authority.

Such permits may come with general and specific conditions.

The general conditions determining permit issuance include, in order of priority:

- activities relating to experts' tasks (topographers and archeologists and related sciences specialists) specifically entrusted with necessary surveys and studies for a better site knowledge and improvement of the historical site management plan;
- preservation, consolidation, conservation and maintenance operations of surface structures;
- installation and maintenance of automatic stations that may be set up there and future repairs thereto;
- finally, all management activities aimed at reaching the plan's objectives.

At first, tourism-related activities and educational and leisure activities shall be limited until completion of the phases of archeological study and high structure's possible reinforcement operations (safety measures and historical monuments preservation). The duration of this limited access period shall be left up to the discretion of the competent national authority.

A granted permit shall be valid for duration not to exceed the time required for execution of the tasks for which it was issue.

7(i) Access to the Area and travels within

For people with a permit, access points or areas shall be through land sighting point(s) defined according to several scenarios (including staff and/or equipment landing, most common weather conditions in the area, etc.). The limits of these approach points shall be defined following the best advice provided by sailors, pilots and conservation consultative bodies (archeologists and heritage protection specialists).

They shall also be based on the hypothesis that as long as archeological works have not been carried out, any substantial increase of the number of visitors would be deleterious to those values to be protected.

Aircraft landings shall take place outside the area on points which, should they be in very close proximity, should be chosen after consulting pilots and heritage conservation specialists. These people's opinion shall be based, in particular, on the fact that landing too close to site buildings

- could be dangerous for equipment and crews (lifting surface artifacts),
- would disrupt space distribution of surface artifacts,
- would risk damaging existing structures by spraying surface items and ice particles.

Therefore, landings and approaches shall take place on landing and approach sites designated in agreement between pilots and heritage agents. Their definition through examination of ground conditions is part of the heritage site management plan.

Land vehicles are not allowed inside the area except for light vehicles that may be required for scientific and/or archeological artifacts conservation work. In such case, these vehicles' gross weight shall not exceed 1.2 tons and they will need to be fitted with low-pressure tires, preferably adapted to snow and névé, or with tracks made of rubber or similar flexible materials.

7(ii) Authorized activities within the Area

Among activities authorized within the area are heritage and archeological identification visits, visits for restoration, preservation and/or protection purposes, including installation, service and maintenance of automated surveying and/or remote transmission equipment.

Permit holders must make sure that their visit will not disrupt any program underway.

7(iii) Building installation, modification or removal

Any surface anthropogenic (man-made) remnant and *a fortiori* any underground item is assumed to form part of the historical heritage.

No remains and no item belonging to historical structures may be removed from the site, except for restoration and/or preservation purposes, and in such cases, only after issuance of an explicit authorization by the relevant authority.

No structure or scientific equipment may be set up in the area except for essential scientific reasons or for management activities authorized by the relevant authority.

7(iv) Camp location

Authorized visitors shall define a camp area according to local conditions and the requirements of their work. For each campaign, ground boundary of the various camp modules shall be indicated on a small-scale map (1/2000 for instance). These maps shall be turned into the relevant issuing authority after each campaign.

7(v) Restrictions on materials and organisms authorized inside the Area

- in compliance with the provisions of Annex II to the Madrid Protocol, live animals or plants, poultry products and by-products, including powdered eggs, may not be imported inside the area.
- chemical products are forbidden in the area, except those introduced for authorized scientific activities under the conditions spelled out in a permit. Any chemical must be taken out of the area at the end or prior to the end of the activities for which permits were issued.
- depositing fuels, foodstuff or any other material is forbidden except when needed for those activities for which permits were issued. All introduced substances shall be removed as soon as they are no longer required. Permanent storage is forbidden.

7(vi) Collection or removal of items or materials inside the area not brought by the permit holder

Collection or removal of materials or items that were not brought inside the area by the permit holder is forbidden.

However, materials may be picked up or removed from the area for the sole purposes of restoration, preservation or heritage protection, or for scientific reasons in compliance with the objectives of the

management plan, under a separate permit issued specifically for this purpose by the relevant authority.

7(vii) Waste elimination

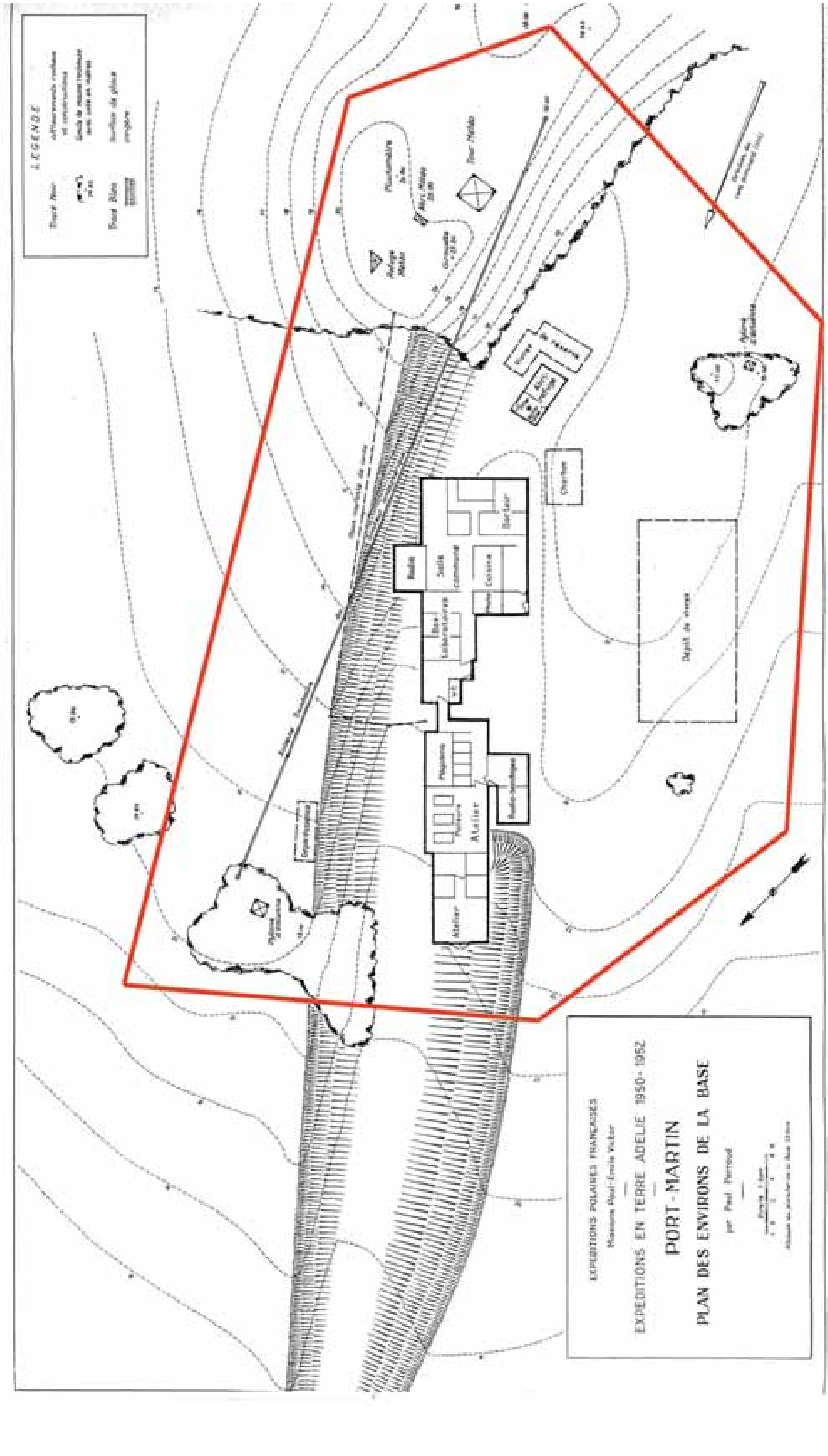
All waste materials produced by working parties or visitors will need to be removed from the area.

7(viii) Measures needed to meet the management plan's goals and objectives

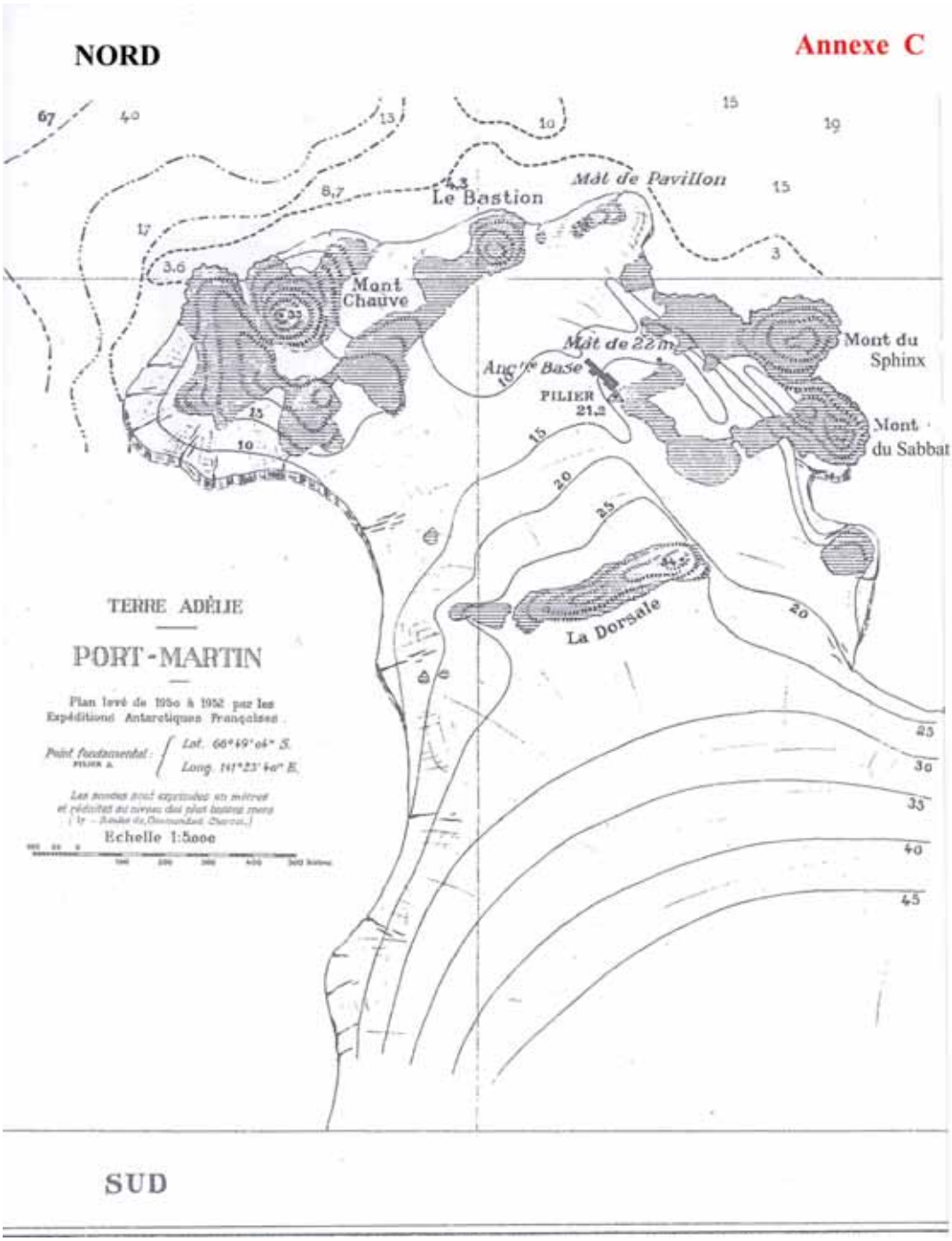
Area visits shall be strictly limited to scientific and management activities.

7(ix) Visit reports

The Parties shall ensure that the main holder of each permit issued present to the relevant authority a report on activities carried out in the area. The Parties must keep in their archives a copy of these activities, and in the annual information exchange, they must provide a summary description of the activities carried out by people under their jurisdiction, with enough details to allow for a review of the management plan efficiency. In as much as possible, the Parties shall place the originals or the copies of these reports in archives accessible to the public in order to keep a usage log to be used in the management plan review and the area scientific use organization. Their posting on a dedicated website may be considered.


EXPEDITIONS POLAIRES FRANÇAISES
Missions Paul-Emile Victor
EXPEDITIONS EN TERRE ADELIE 1950 - 1952
PORT - MARTIN
PLAN DES ENVIRONS DE LA BASE
par Paul Perroud


Port-Martin Annexe B
Glace
Falaise
Ile de l'Empereur
Ilot Breton
PORT-MARTIN
CAP MARGERIE


NORD
Annexe C
Le Bastion
Mât de Pavillon
Mont Chauve
Mât de 22m
Angle Base
PILIER
21,2
Mont du Sphinx
Mont du Sabbat
La Dorsale
TERRE ADÉLIE
PORT-MARTIN
Plan levé de 1950 à 1952 par les Expéditions Antarctiques Françaises
Point fondamental : PILIER A
Lat. 66°49'04" S.
Long. 141°23'44" E.
Les sondes sont exprimées en mètres et réduites au niveau des plus basses mers
Echelle 1:5000
SUD

Management Plan for Antarctic Specially Protected Area No. 167

HAWKER ISLAND, VESTFOLD HILLS, INGRID CHRISTENSEN COAST, PRINCESS ELIZABETH LAND, EAST ANTARCTICA

1. Description of values to be protected

Hawker Island, lying some 300 m off the Antarctic mainland, is located 7 km south-west from the Australian Davis station in the Vestfold Hills on the Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica at 68°35'S, 77°50'E (Map A). The island supports a breeding colony of southern giant petrels (*Macronectes giganteus*) which is the southernmost colony of the species on continental Antarctica. The island also supports a colony of Adélie penguins and a limited number of flying birds.

The southern giant petrel colony was discovered in December 1963; at that time there were 40-50 nests present, "some with eggs". Seventeen population counts were undertaken between 1963 and 1999 (see Figure 1). A maximum of 90 nests with eggs was recorded in 1970/71. The recorded number of nests with eggs had decreased to 10 in 1983, but the two most recent surveys, conducted in 1987 and 1999, recorded 21 and 25 respectively.

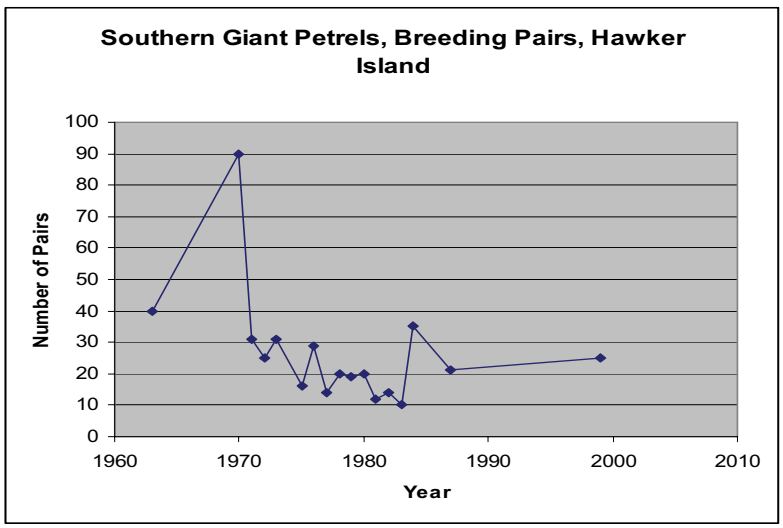


Figure 1: Population records for southern giant petrels (breeding pairs) at Hawker Island

Hawker Island is one of only four known breeding locations for southern giant petrels on the coast of continental Antarctica. The other locations have all been designated as Antarctic Specially Protected Areas (ASPAs): ASPA No. 102, Rookery Islands, Holme Bay, Mac Robertson Land (67º36'S, 62º53'E) – near Mawson Station; ASPA No. 160, Frazier Islands, Wilkes Land (66°13'S 110°11'E) – near Casey station; and ASPA No. 120, Pointe-Géologie, Terre Adélie (66º40'S, 140º01'E) – near Dumont d'Urville. Southern giant petrels on the Antarctic continent comprise less than 1% of the global breeding population. The current population for continental Antarctica is estimated at approximately 290 pairs, comprised of 25 pairs on Hawker Island, 3 pairs on Giganteus Island (part of the Rookery Islands group), 248 pairs on the Frazier Islands and 16 pairs at Pointe-Géologie.

Southern giant petrels also breed on islands in the southern Indian and Atlantic Oceans and in the Antarctic Peninsula.

As indicated above, the breeding population of southern giant petrels at Hawker Island decreased following its discovery in the early 1960s by personnel from nearby Davis Station. Human disturbance has been implicated in the observed decreases at all four southern giant petrel breeding sites on continental Antarctica. The disturbance to colonies near the Australian stations arose primarily through early efforts (1950s-1970s) to band adults and chicks at the nest. The population decrease at Pointe-Géologie has been attributed to station construction at Dumont d'Urville Station.

Southern giant petrels breeding in East Antarctica are particularly sensitive to disturbance at the nest. Restrictions in activities permitted at breeding sites, including a prohibition of banding, were introduced in the mid-1980s. While the population at Hawker Island has not recovered to the same extent as that on the Frazier Islands, it is showing signs of long-term recovery.

Reductions in breeding populations of southern giant petrels at other locations in the Antarctic and subantarctic have been attributed to activities associated with research stations. The bycatch of southern giant petrels in longline fisheries operating in the Southern Ocean is also likely to have contributed to observed population decreases. Decreases in breeding populations of southern giant petrels have also been observed at sites where human disturbance has been minimal, such as Heard Island.

The global breeding population of southern giant petrels is estimated at around 31,300 pairs, and is inferred to be declining at a rate of 20-50% over the past three generations. A total of 30 populations contain 500 or fewer breeding pairs, and at 15 of these sites there are 50 or fewer breeding pairs. It is believed that the global decrease in population is primarily due to fatal interactions with longline fisheries, although the species is also sensitive to other forms of human-induced disturbance such as scientific research and visitor activities, ship movements and overflights. The species is listed as Vulnerable under IUCN criteria and has conservation status under a number of international agreements (see Table 1).

Table 1: The conservation status of southern giant petrels by various authorities using IUCN criteria.

Authority	Conservation Status under IUCN criteria
IUCN Red List 2004	Vulnerable
Garnett, S.T. and Crowley, G. M. (2000) *The Action Plan for Australian Birds*	Vulnerable (global population)Endangered (Australian population only)
Agreement on the Conservation of Albatrosses and Petrels (ACAP)	Annex I
Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)	Unfavourable conservation status listed in Appendix II.

The overall decrease in the Hawker Island population of southern giant petrels since its discovery is consistent with global trends and suggests that continued and formalised protection of the colony is warranted. Long-term protection and monitoring of the colony at Hawker Island will contribute to the development of appropriate regional and global conservation strategies for the species and will provide information for comparisons with populations elsewhere.

The designation of Hawker Island as an Antarctic Specially Protected Area completes a suite of protected areas that safeguard all known southern giant petrel breeding locations in East Antarctica.

2. Aims and objectives

Management of Hawker Island aims to:

- minimise human disturbance to assist stabilisation and recovery of the breeding colony of southern giant petrels;
- protect the value of Hawker Island as a reference area for future comparative studies with other breeding populations of southern giant petrels; and
- minimise the possibility of the introduction of alien plants, animals and microbes to Hawker Island.

3. Management activities

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

- one research visit should be conducted to census the southern giant petrels and other seabird populations in each five year period to enable monitoring of breeding populations. The visiting group should be restricted to the lowest number required to safely conduct the activity, and should include an ornithologist who is associated with an approved national program or who has previous field experience with southern giant petrels;
- information on the location of Hawker Island ASPA (stating the restrictions that apply) shall be produced and prominently displayed at Davis station and copies of this Management Plan shall be available at the station. Informative material and the Management Plan shall be provided to ships visiting the vicinity;
- clothing (particularly all footwear) and field equipment shall be appropriately cleaned before entering the Area; and
- the Management Plan shall be reviewed at least every five years and updated/modified as required.

4. Period of designation

Designation is for an indefinite period.

5. Maps

- Map A: Vestfold Hills, showing the location of Hawker Island and protected areas within the region. Map specifications: Projection: UTM Zone 49 Horizontal Datum: WGS84
- Map B: Hawker Island, Antarctic Specially Protected Area showing distribution of seabird nesting sites. Map Specifications: Projection: UTM Zone 49 Horizontal Datum: WGS84

6. Description of the Area

6(i) Geographical co-ordinates, boundary markers and natural features

Hawker Island is located at 68°35'S, 77°50'E, approximately 300 m offshore from the Vestfold Hills. The Vestfold Hills is a roughly triangular ice-free area of approximately 512 km^2, of bedrock, glacial debris, lakes and ponds. The Vestfold Hills are bound by the ice plateau to the east, the Sørsdal Glacier to the south, and Prydz Bay to the west. The Vestfold Hills contain low hills (maximum height 158 m at Boulder Hill) and valleys, and are penetrated deeply by fjords and lakes. Numerous islands fringe the coast of the Vestfold Hills, and Hawker Island lies in the south-west, between Mule Island and Mule Peninsula.

Hawker Island is an irregularly shaped island of low elevation (maximum elevation of nearly 40 m), with two parallel ranges of hills running in a north south direction terminating in two small southern peninsulas. A third peninsula lies directly west and terminates with a 40 m hill with steep cliffs to the sea on the western and southerly aspects. A number of small fresh-water lakes lie between the ranges of hills on the northern part of the island, with a number of small lakes lying on the flatter terrain on the eastern sector of the island. At its maximum extent the island is 2 km north to south and 1.7 km east to west.

The Hawker Island ASPA comprises the entire terrestrial area of Hawker Island, with the seaward boundary at the low water mark (Map B). The total area of the Hawker Island ASPA is approximately 1.9 km^2. There are no boundary markers.

Human history

The first recorded sighting of the Vestfold Hills was by Douglas Mawson on the BANZARE voyage of the *'Discovery'* on the 9 February, 1931. Four years later, on 20 February 1935, Captain Klarius Mikkelsen of the Lars Christensen Company tanker *'Thorshavn'*, sighted and landed in the area. He named many features, and the area, the Vestfold Hills after his home province in Norway. The Vestfold Hills were again visited by Mikkelsen in early 1937, while undertaking an aerial survey of the coast.

In January 1939 the American explorer, Lincoln Ellsworth, and his Australian adviser, Sir Hubert Wilkins were the next recorded visitors to the area in the motor ship *'Wyatt Earp'*, Ellsworth flew some 400 km inland. In early 1947 the *'USS Currituck'* visited the Ingrid Christensen Coast as part of Operation Highjump. Photographic flights were to survey the coastline.

The first Australian National Antarctic Research Expeditions (ANARE) to the area was led by Dr Phillip Law on *'Kista Dan'* and reached the Vestfold Hills on 1 March, 1954. During January 1956, members of the Soviet Antarctic Expedition landed on the Ingrid Christensen Coast, in preparation for the IGY moving on to establish Mirny Station 595 km to the east. Australia established Davis station in the Vestfold Hills in 1957. Hawker Island was named for A.C. Hawker, radio supervisor at Davis station in 1957.

Climate

Meteorological data for the Area are confined almost entirely to observations at Davis station, 7 km northwest of Hawker Island. The Vestfold Hills area has a polar maritime climate that is cold, dry and windy. Summer days are typically sunny, with a midday temperature from -1°C to +2.9°C and a summer maximum of +5°C, but temperatures are below 0°C for most of the year falling to as low as -40.7°C in winter. The maximum temperature recorded at Davis station from 1957 to 2001 was +13°C. Long periods of relatively calm, fine conditions occur throughout the year. Winds are generally

light. The yearly average is around 20 km/h. Violent winds and blizzards can commence with little warning, and gusts of over 200 km/h have been recorded. Snowfall averages 78 mm/yr, with the greater proportion of annual accumulation resulting from wind blown drift. Apart from several permanent ice banks, the Vestfold Hills are virtually snow free in summer and lightly covered in winter. The record illustrates the seasonal climate expected for high latitudes, but on average Davis station is warmer than other Antarctic stations at similar latitudes. This has been attributed to the "rocky oasis" which results from the lower albedo of rock surfaces compared to ice, hence more solar energy is absorbed and re-radiated.

Geology

The Vestfold Hills consist of Archaean gneiss, upon which thin and often fossiliferous Pliocene and Quaternary sediments occupy depressions. The oldest known Cenozoic strata in the Vestfold Hills are the mid-Pliocene Sørsdal Formation, which contains a diverse marine fossil flora and fauna. Other younger Cenozoic strata attest to repeated glaciation, and several marine transgressions and regressions. The three major lithologies forming the Vestfold Hills are (in order of age) Chelnock Paragneiss, Mossel Gneiss and Crooked Lake Gneiss. This is repeated in units from east-north-east to west-south-west. Intruded into these, are groups of mafic dykes in a rough north-south orientation. The dykes are a major feature of the Vestfold Hills. Hawker Island comprises an extension of the Crooked Lake Gneiss of the northern portion of Mule Peninsula above Laternula Inlet. In common with the Archaean gneisses in the Vestfold Hills, the Hawker Island Crooked Lake Gneiss is cut by very distinctive, middle to early Proterozoic dolerite dykes.

Southern giant petrels

The Hawker Island southern giant petrel colony is situated on level ground about 20 m above sea-level. Rocks and boulders break the relief but provide little shelter. The same area has been used for nesting since the first records were made in 1963/64. The eastern side of the breeding area forms a slight ridge with the ground dropping away below, providing a good area for take-off into the prevailing north-easterly winds. Nests are built from pebbles and are relatively widely dispersed, about 5-10 m apart. Records of the number of nests with eggs are shown in Figure 1.

The breeding season for southern giant petrels on Hawker Island commences with laying during the second half of October. Following an incubation period of about 60 days, hatching starts in the second half of December. Hatching continues over a period of three to four weeks until mid-January and, with a fledging period of 3½-4 months. Young birds leave the colony from late March to early May.

Seventeen counts, or, on average, one visit every two years occurred between 1956 and 1999 (see Figure 1). In the mid 1980s, a management strategy was implemented for all three southern giant petrels breeding localities in the vicinity of the Australian stations, to minimise human disturbance. The strategy involved the Australian Antarctic Division restricting census visits to one in every three to five year period and implementing tight administrative controls over all other visits. This three to five year interval was considered an appropriate compromise between the risk of disturbing the birds through census work and the need to obtain meaningful population data. The strategy is believed to have contributed to the stabilisation and recovery observed in one of the three populations in Eastern Antarctica during the late 1980s onwards.

Other birds

Adélie penguins breed along the Vestfold Hills coastline and on at least 17 offshore islands, including Hawker Island. The total number of Adélie penguins in the Vestfold Hills has been estimated at 130,000 pairs. The Hawker Island colony is located in the vicinity of a small hill midway on the western side of the island and has been estimated at 2500 to 7500 pairs. There is evidence that the

colony or some of the breeding groups within the colony have moved location periodically. The deserted areas are marked by deep deposits of guano, frozen eggs and the dehydrated carcasses of chicks. The first Adélie penguins usually appear in the area by the middle of October with eggs being laid about four weeks later. The interval between laying of the first and second egg is 2½ to 4½ days, and the incubation period is in the range of 32 to 35 days. The last moulted adults depart Hawker Island by the end of March.

A small colony of Cape petrels has been recorded on Hawker Island on the southern tip of the south western peninsula. Cape petrels are absent from the area in winter. Cape petrels return to nesting sites during October with egg laying late in November to early December and fledging in late February and early March.

Snow petrels (*Pagodroma nivea*) breed on most islands and several mainland sites in the Vestfold Hills but there are no records of them breeding on Hawker Island. Antarctic fulmars (*Fulmarus glacialoides*), Antarctic petrels (*Thalassoica antarctica*) and Emperor penguins (*Aptenodytes forsteri*) are infrequent visitors to the Vestfold Hills in the summer months. South polar skuas (*Catharacta maccormicki*) nest on nearby Marine Plain and occasionally around the waters edge.

Seals

Weddell seals *(Leptonychotes weddellii*) breed in the Vestfold Hills and on the south-east part of Hawker Island. The seals start to appear inshore in late September and early October, and pupping occurs from mid-October until late November. Throughout summer, moulting Weddell seals continue to frequent firm sea-ice and haul out onto land. Most of the local population remains in the Vestfold Hills throughout the summer. Non-breeding groups of southern elephant seals (*Mirounga leonina*) haul out during the summer months in the vicinity of the south-western peninsula on Hawker Island. Crabeater seals (*Lobodon carcinophagus*) and Leopard seals (*Hydrurga leptonyx*) appear occasionally at the Vestfold Hills on sea-ice and beaches.

Vegetation

The flora of the Vestfold Hills comprises at least 82 species of terrestrial algae, six moss species and at least 23 lichen species. The lichens and mosses are distributed chiefly in the eastern or inland sector and their distribution patterns reflect the availability of drift snow, time since exposure of the substrate from the ice plateau and time since the last glaciation, elevation and proximity to saline waters. Very few occurrences of lichens or mosses have been noted towards the salt-affected coastal margin including Hawker Island where the low terrain is densely covered with extensive sand and moraine deposits.

Terrestrial algae are widespread and are major primary producers in the Vestfold Hills. Sublithic (or hypolithic) algae has been reported from Hawker Island, developing on the undersurfaces of translucent quartz stones that are partially buried in soil. The dominant algae, Cyanobacteria, particularly oscillatoriacean species, *Chroococidiopsis sp*., and *Aphanothece sp.* occur with the greatest frequency together with the Chlorophyta species, *cf. Desmococcus sp.A* and *Prasiococcus calcarius*. The endaphic alga *Prasiola crispa*, occurs as green crumpled sheet-like strands at melt flushes, usually associated with the diatom *Navicula muticopsis* and oscillatoriacean algae. The ornithocophilous lichen *Candelariella flava* has been reported from Hawker Island, associated with sea bird nesting sites.

Invertebrates

An extensive survey of terrestrial tardigrades has been undertaken in the Vestfold Hills in 1981 from which four genera and four species of tardigrade were recovered. Although no tardigrades

were recovered from the Hawker Island sample site it has been suggested that, as two species of tardigrade, *Hypsibius allisonii* and *Macrobiotus fuciger?* were recovered from Walkabout Rocks, they may be found in other coastal areas of similar ecology, associated with *Prasiola crispa*. The mite, *Tydeus erebus* is associated with breeding sites of Adélie penguins on the island.

6(ii) Special zones within the Area

There are no special zones within the Area.

6(iii) Location of structures within the Area

There are no structures within or adjacent to the Area and none are to be erected.

6(iv) Location of other protected Areas within close proximity

The following Protected Areas are located near Hawker Island:

- Marine Plain, Antarctic Specially Protected Area No. 143 (68°36'S, 78°07'E).

7. Permit conditions

Visits to Hawker Island ASPA are prohibited except in accordance with a Permit issued by an appropriate National Authority. National Antarctic Programs operating in the region shall consult with each other to ensure that the frequency of visits does not exceed that permitted in the Management Plan. Permits to enter the Area may be issued during the non-breeding period for southern giant petrels, specifically from 1 May to 30 September, for compelling scientific research that cannot be undertaken elsewhere, or for essential management purposes consistent with the objectives and provisions of the Management Plan. Permits are only to be issued for research that will not jeopardise the ecological or scientific values of the Area, or interfere with existing scientific studies.

Only one Permit is to be issued for the purpose of conducting a seabird census in each 5 year period. The Permit issuing authority is to refer to the provisions under section 3 of this management plan when issuing Permits. Censuses are to be conducted from beyond the limits of the southern giant petrel colonies, wherever practicable. In most cases there are vantage points from where the nesting birds may be counted. The maximum time to be spent on Hawker Island is 12 hours in total; however, the census may involve several visits to the islands. Only persons named in the Permit may be ashore within the Area at any time. Others, such as boat operators, should remain at the nominated landing sites.

Permits should include a condition that the Permit or a copy shall be carried at all times when within the Area. Additional conditions, consistent with the objectives and provisions of the Management Plan, may be included by the issuing authority. The principal Permit Holder for each Permit issued is required to submit to the Permit issuing authority a visit report detailing all activities undertaken within the Area, and including all census data obtained during the visit.

7(i) Access to, and movement within or over the Area

- Vehicle use is prohibited within the Area;
- Access to Hawker Island may be by watercraft or vehicle depending upon seasonal conditions. Watercraft landings or parking of vehicles must be made at one of the two small bays at the southern end of the island. Boats used to visit the islands must be left at the shoreline. Movement within the Area is by foot only. Only personnel who are required to carry out scientific/management work in the Area are to leave the landing/parking site;

- The minimum (closest) approach distances set out in Table 2 are to be maintained when approaching any wildlife on, or in the vicinity of Hawker Island, unless a closer approach distance is authorised in a Permit. These distances are a guide and should an activity disturb wildlife, a greater distance is to be maintained;
- Persons permitted to approach southern giant petrels to obtain census data or biological data, should maintain the greatest practical separation distance and should in no case approach closer than 20 m;
- To reduce disturbance to wildlife, noise levels including verbal communication is to be kept to a minimum. The use of motor-driven tools and any other activity likely to generate noise and thereby cause disturbance to nesting birds is prohibited within the Area during the breeding period for southern giant petrels (1 October to 30 April); and
- Landing of aircraft in the Area is prohibited at any time.

Table 2: Minimum distances to maintain when approaching wildlife at Hawker Island.

Species	Distances (m)		
	People on foot / ski	**Quad/ Skidoo**	**Hagglunds**
Giant petrels	100	150	250
Emperor penguins in colonies	30		
Other penguins in colonies Moulting penguins Seals with pups Seal pups on their own Prions and petrels on nest South polar skua on nest	15		
Penguins on sea ice Non breeding adult seals	5		

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

The following activities may be conducted within the Area from 1 May to 30 September as authorised in a Permit:

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

7(iii) Installation, modification, or removal of structures

No permanent structures are to be erected in the Area.

7(iv) Location of field camps

Camping is prohibited in the Area except in an emergency.

7(v) Restrictions on materials and organisms that may be brought into the Area

- Fuel is not to be deposited in the Area. Boat refuelling is permitted at shoreline landing sites. A small amount of fuel may be taken into the Area for an emergency stove.

- No poultry products, including dried food containing egg powder, are to be taken into the Area.
- No herbicides or pesticides are to be brought into the Area.
- Any chemical which may be introduced for compelling scientific purposes as authorised in a Permit shall be removed from the Area, at or before the conclusion of the activity for which the Permit was granted. The use of radio-nuclides or stable isotopes is prohibited.
- No animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions; all equipment and clothing should be thoroughly cleaned before entering the Area.

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

Taking of, or harmful interference with, native flora and fauna, is prohibited unless specifically authorised by permit issued in accordance with Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty.

Disturbance of southern giant petrels should be avoided at all times.

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

Material may only be collected or removed from the Area as authorised in 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 unless the impact of the removal is likely to be greater than leaving the material *in situ*. If such material is found the appropriate National Authority must be notified.

7(viii) Disposal of waste

No wastes, including human wastes, are to be deposited or left in the Area.

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

One census of southern giant petrels should be conducted in each 5 year period. Censuses of other species may be undertaken during this visit provided no additional disturbance is caused to the southern giant petrels.

The length of time spent at Hawker Island to conduct a bird census should be minimised. A survey should be able to be completed in less than a 12 hours.

GPS data shall be obtained for specific sites of long-term monitoring for lodgement with the Antarctic Master Directory through the appropriate National Authority.

7(x) Requirement for reports

Parties should ensure that the principal Permit Holder for each Permit submits to the appropriate National Authority a report on activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of Resolution 2 (1998)(CEP I).

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 this 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 Plan of Management and in organising the scientific use of the Area.

A copy of the report should be forwarded to the National Party responsible for development of the Management Plan to assist in management of the Area, and monitoring of bird populations. Additionally visit reports should provide detailed information on census data, locations of any new colonies or nests not previously recorded, a brief summary of research findings and copies of photographs taken of the Area.

8. Supporting documentation

Some or all of the data used within this paper was obtained from the Australian Antarctic Data Centre (IDN Node AMD/AU), a part of the Australian Antarctic Division (Commonwealth of Australia).

Adamson, D.A. and Pickard, J. (1986). Cainozoic history of the Vestfold Hills. In Pickard, J., ed. *Antarctic Oasis. Terrestrial environments and history of the Vestfold Hills*. Sydney: Academic Press, 63–97.

Adamson, D.A. and Pickard, J. (1986). Physiology and geomorphology of the Vestfold Hills. In Pickard, J., ed. Antarctic oasis: terrestrial environments and history of the Vestfold Hills. Sydney: Academic Press, 99–139.

ANARE (1968). Unpublished data.

Birdlife International (2000). Threatened birds of the world. Barcelona and Cambridge U. K: Lynx Edicions and Birdlife International.

BirdLife International (2004). Macronectes giganteus. In: IUCN 2004. 2004 IUCN Red List of Threatened Species. *www.iucnredlist.org*. Downloaded on 30 March 2006.

BirdLife International (2005). Species fact sheet: Macronectes giganteus. Downloaded from *http://www.birdlife.org* on 30 March 2006

(Broady 1986 p 167)

Cooper, J., Woehler, E., Belbin, L. (2000). Guest editorial. Selecting Antarctic Specially Protected Areas: Important Bird Areas can help. Antarctic Science 12: 129.

Cowan, A.N. (1981). Size variation in the snow petrel. Notornis 28: 169-188.

Cowan, A.N. (1979). Giant Petrels at Casey. Australian Bird Watcher 8: 66-67.

Croxall, J.P., Steele, W.K., McInnes, S.J., Prince, P.A. (1995). Breeding Distribution of the Snow Petrel Pagodroma nivea. Marine Ornithology 23: 69-99.

Environment Australia (2001). Recovery Plan for Albatrosses and Giant Petrels. Canberra.

Environmental Code of Conduct for Australian Field Activities, Environmental Management and Audit Unit, Australian Antarctic Division.

Fabel, D., Stone, J., Fifield, L.K. and Cresswell, R.G. (1997). Deglaciation of the Vestfold Hills, East Antarctica; preliminary evidence from exposure dating of three subglacial erratics. In RICCI, C.A., ed. The Antarctic region: geological evolution and processes. Siena: Museo Nazionale dell'Antartide, 829–834.

Garnett, S.T., Crowley, G.M. (2000). The Action Plan for Australian Birds 2000. Commonwealth of Australia, Environment Australia, Canberra

Gore, D.B. (1997). Last glaciation of Vestfold Hills; extension of the East Antarctic ice sheet or lateral expansion of Sørsdal Glacier. Polar Record, 33, 5–12.

Hirvas, H., Nenonen, K. and Quilty, P. (1993). Till stratigraphy and glacial history of the Vestfold Hills area, East Antarctica. Quaternary International, 18, 81–95.

IUCN (2001). IUCN Red List Categories: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.

Jouventin, P., Weimerskirch, H. (1991). Changes in the population size and demography of southern seabirds: management implications. In: Perrins, C.M., Lebreton, J.-D. and Hirons, G.J.M. Bird population studies: Relevance to conservation and management. Oxford University Press: 297-314.

Johnstone, Gavin W.; Lugg, Desmond J., and Brown, D.A. (1973). The biology of the Vestfold Hills, Antarctica. Melbourne, Department of Science, Antarctic Division, ANARE Scientific Reports, Series B(1) Zoology. Publication No. 123.

Law P. (1958). Australian Coastal Exploration in Antarctica The Geographical Journal CXXIV: 151-162.

Leishman, Michelle R., and Wild, Christie (2001). Vegetation abundance and diversity in relation to soil nutrients and soil water content in Vestfold Hills, East. Antarctic Science, 13(2): 126-134

Micol, T., Jouventin, P. (2001). Long-term population trends in seven Antarctic seabirds at Point Géologie (Terre Adélie): Human impact compared with environmental change. Polar Biology 24: 175-185.

Miller, J.D.; et al. (1984). A survey of the terrestrial Tardigrada of the Vestfold Hills, Antarctica. In Pickard, J., ed. Antarctic Oasis. Terrestrial environments and history of the Vestfold Hills. Sydney: Academic Press, 197-208.

Murray, M.D. (1972). Banding Giant Petrels on Frazier Island, Antarctica. The Australian Bird Bander 10(3): 57-58.

Murray M.D., Luders D.J. (1990). Faunistic studies at the Windmill Islands, Wilkes Land, East Antarctica, 1959-80. ANARE Research Notes 73: 1-45.

Orton, M.N. (1963). Movements of young Giant Petrels bred in Antarctica. Emu 63: 260.

Patterson D.L., Woehler, E.J., Croxall, J.P., Cooper, J., Poncet, S., Fraser, W.R. (in press) Breeding distribution and population status of the Northern Giant Petrel Macronectes halli and the southern giant petrel M. giganteus. Marine Ornithology.

Pickard, J. ed., 1986. Antarctic oasis: terrestrial environments and history of the Vestfold Hills. Sydney: Academic Press.

Puddicombe, R.A.; and Johnstone, G.W. (1988). Breeding season diet of Adélie penguins at Vestfold Hills, East Antarctica. In Biology of the Vestfold Hills, Antarctica, edited by J.M. Ferris, H.R. Burton, G.W. Johnstone, and I.A.E. Bayly.

Rounsevell, D.E., and Horne, P.A. (1986). Terrestrial, parasitic and introduced invertebrates of the Vestfold Hills. Antarctic oasis; terrestrial environments and history of the Vestfold Hills, Sydney: Academic Press, 309-331

Stattersfield, A.J., Capper, D.R. (2000). Threatened Birds of the World. Birdlife International, Lynx Publications

Woehler, E.J. (1990). Status of southern giant petrels at Casey. ANARE News 61: 18.

Woehler, E.J. (1991). Status and Conservation of the Seabirds of Heard and the McDonald Islands. In: Croxall, J.P. (ed.) Seabird Status and Conservation: A Supplement. ICBP Technical Publication No. 11: 263-277.

Woehler E.J., Croxall J.P. (1997). The status and trends of Antarctic and subantarctic seabirds. Marine Ornithology 25: 43-66.

Woehler, E.J., Johnstone, G.W. (1991). Status and Conservation of the Seabirds of the Australian Antarctic Territory. In Croxall, J.P. (ed.) Seabird Status and Conservation: A Supplement. ICBP Technical Publication No. 11: 279-308.

Woehler, E.J., Martin, M.R., Johnstone, G.W. (1990). The Status of southern giant petrels Macronectes giganteus at the Frazier Islands Wilkes Land, East Antarctica. Corella 14: 101-106.

Woehler, E.J., Riddle, M.J. (2003). Long-term population trends in Southern Giant Petrels in the Southern Indian Ocean. Poster presented at 8th SCAR Biology Symposium 2001, Amsterdam.

Woehler, E.J., Riddle, M.J., Ribic, C.A. (in press). Long-term population trends in Southern Giant Petrels in East Antarctica. Proceedings 8th SCAR Biology Symposium.

Woehler, E.J., Cooper, J., Croxall, J.P., Fraser, W.R., Kooyman, G.L., Miller, G.D., Nel, D.C., Patterson, D.L., Peter, H-U, Ribic, C.A., Salwicka, K., Trivelpiece, W.Z., Wiemerskirch, H. (2001). A Statistical Assessment of the Status and Trends of Antarctic and Subantarctic Seabirds. SCAR/CCAMLR/NSF, 43 pp.

Woehler, E.J. (1990). The distribution of seabird biomass in the Australian Antarctic Territory: Implications for conservation. Environmental Conservation 17, 256-261.

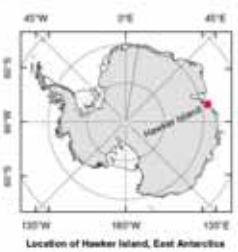
Woehler, E.J. and Johnstone, G.W. (1991). Status and conservation of the seabirds of the Australian Antarctic Territory In: Seabird status and conservation: a supplement. Ed. Croxall, J.P., ICBP Technical Publication 11, 279-308.

Woehler, E.J. (1993). Antarctic seabirds: their status and conservation in the AAT. RAOU Conservation Statement 9, 8pp.

Woehler, E.J., Martin, M.R. and Johnstone, G.W. (1990). The status of Southern Giant-Petrels, Macronectes giganteus, at the Frazier Islands, Wilkes Land, East Antarctica. Corella 14, 101-106.

Woehler, E. (2001). Breeding populations of Southern Giant Petrels at Heard Island, the McDonald Islands and within the AAT, Australian Antarctic Data Centre, SnoWhite Metadata *(http://aadc-maps.aad.gov.au/aadc/metadata/metadata_redirect.cfm?md=AMD/AU/SOE_seabird_candidate_sp_SGP).*

Map A: Hawker Island Antarctic Specially Protected Area No. 167, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica



0 1 2 3 4 5
Kilometres

Horizontal Datum: WGS84
Projection: UTM Zone 43

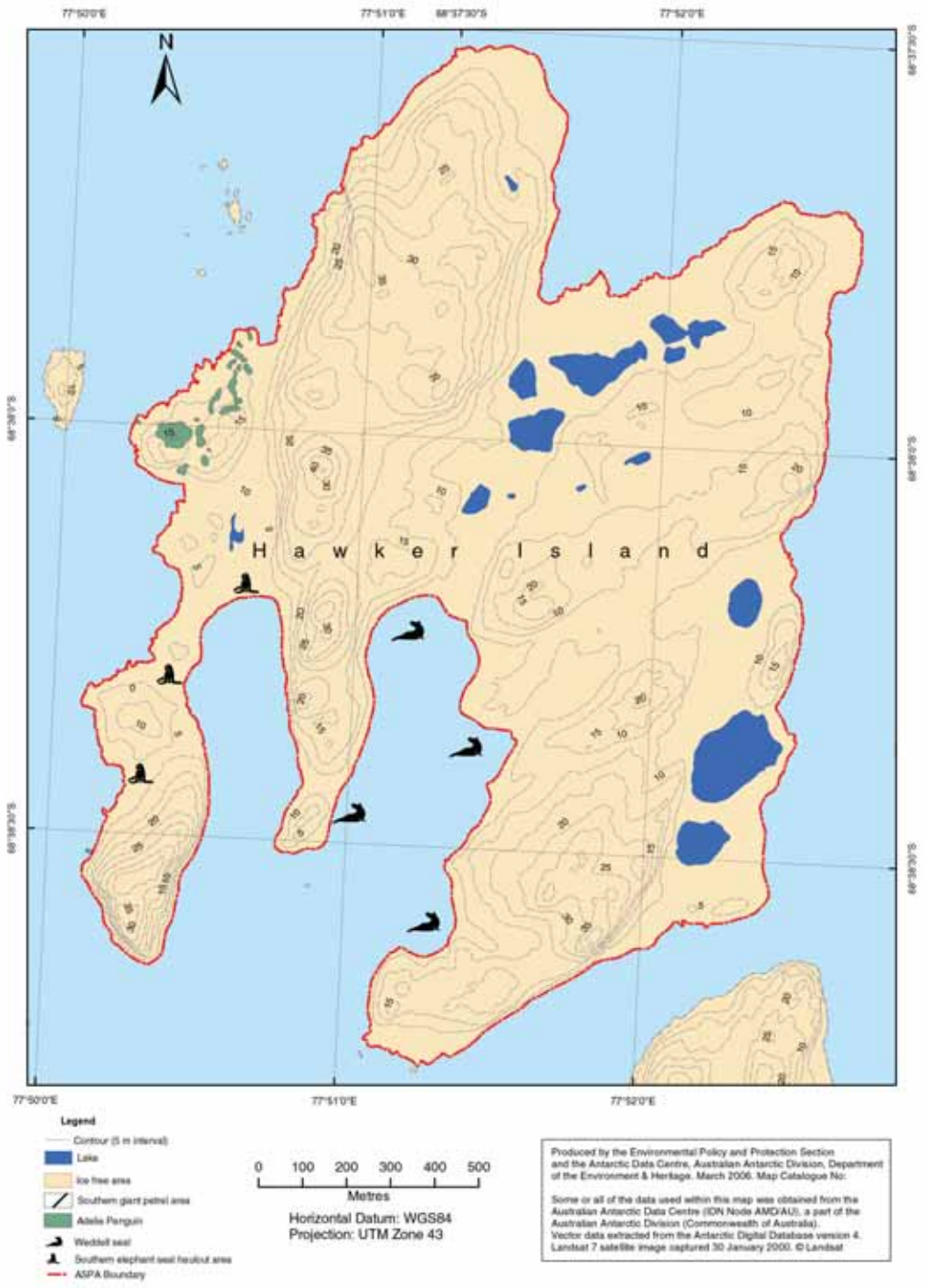
Legend

- Station
- ASPA Boundary
- Lake

Produced by the Environmental Policy and Protection Section and the Antarctic Data Centre, Australian Antarctic Division, Department of the Environment & Heritage. March 2006. Map Catalogue No:

Some or all of the data used within this map was obtained from the Australian Antarctic Data Centre (IDN Node AMD/AU), a part of the Australian Antarctic Division (Commonwealth of Australia).
Vector data extracted from the Antarctic Digital Database version 4.

Map B: Hawker Island Antarctic Specially Protected Area No. 167, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica
Biota, Topography and Physical Features



Measure 2 (2006)

Antarctic Specially Managed Area: Designation and Management Plan: Admiralty Bay, King George Island

The Representatives,

Recalling Articles 4, 5 and 6 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty, providing for the designation of Antarctic Specially Managed Areas ("ASMA") and the approval of Management Plans for those Areas;

Recalling Recommendation X-5 (1979), which designated the western shore of Admiralty Bay as Site of Special Scientific Interest ("SSSI") No. 8, and Decision 1 (2002), which renamed and renumbered the area as Antarctic Specially Protected Area ("ASPA") No. 128;

Recalling Measure 3 (2003), which revised and updated the "List of Historic Sites and Monuments" in which Historic Site and Monument ("HSM") No. 51 is listed;

Recalling the 20th Antarctic Treaty Consultative Meeting, held in Utrecht in 1996, where the Consultative Parties agreed to comply with a Management Plan for Admiralty Bay, King George Island, on a voluntary basis until such time as Annex V to the Protocol on Environmental Protection became effective, when it would become an ASMA after an evaluation of the experience gained and, if necessary, a revision of the Management Plan;

Noting that the Committee for Environmental Protection has advised that Admiralty Bay, King George Island, be designated as an ASMA and has endorsed the Management Plan annexed to this Measure;

Recognising that Admiralty Bay, King George Island, is an area where activities are being conducted, in which it is desirable to plan and co-ordinate activities, avoid possible conflicts, improve co-operation between Parties and avoid possible environmental impacts;

Desiring to designate Admiralty Bay, King George Island, as an ASMA, within which ASPA No. 128 and HSM No. 51 are located, and to approve a Management Plan for the Area, without any modification to the Management Plan for ASPA No. 128, which is annexed to Measure 1 (2000);

Noting that Admiralty Bay, King George Island, contains marine areas and that the Commission for the Conservation of Antarctic Marine Living Resources approved the draft Management Plan for this Area at its 24th meeting;

Recommend to their Governments the following Measure for approval in accordance with paragraph 1 of Article 6 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty:

That:

1. Admiralty Bay, King George Island, be designated as Antarctic Specially Managed Area No. 1;

2. the Management Plan for Antarctic Specially Managed Area No. 1: Admiralty Bay, King George Island, contained in the Annex to this Measure, be approved.

Management Plan for Antarctic Specially Managed Area No.1

ADMIRALTY BAY, KING GEORGE ISLAND

Introduction

Admiralty Bay is an area of outstanding environmental, historical, scientific, and aesthetic values. It was first visited by sealers and whalers in the 19th and early 20th centuries, and relics from these periods still remain. The area is characterized by magnificent glaciated mountainous landscape, varied geological features, rich sea-bird and mammal breeding grounds, diverse marine ecosystems, and terrestrial plant habitats. Scientific research in Admiralty Bay in post IGY times has been performed in a more permanent way for some three decades now. The studies on penguins have been undertaken continuously in the area for 28 years, and is the longest ever done in Antarctica. Admiralty Bay also has one of the longest historical series of meteorological data collected for the Antarctic Peninsula, one of the areas of the planet most sensitive to climate change.

Admiralty Bay has become a site of increasingly diverse human activities, which are continuously growing and becoming more complex. Over the last 30 years, more stations were settled and have grown in area, and visitors increased in numbers per year, from a few hundred to over 3,000. Better planning and co-ordination of existing and future activities will help to avoid or to reduce the risk of mutual interference and minimize environmental impacts, thus providing an effective mechanism for the conservation of the valuable features that characterize the area.

Five parties: Poland, Brazil, United States, Peru and Ecuador have active research programmes in the area. Poland and Brazil operate two all-year round stations (Poland: Henryk Arctowski Station at Thomas Point; and Brazil: Comandante Ferraz Antarctic Station at Keller Peninsula). Peru and United States operate two summer stations (Peru: Machu Picchu at Crepin Point; USA: Copacabana at Llano Point). Ecuador has a refuge at Hennequin Point. There are several small removable and permanent installations elsewhere.

The Area includes one ASPA (ASPA No. 128 Western Shore of Admiralty Bay – former SSSI No. 8) and one Historic Monument (No. 51: a grave) at Arctowski Station.

In addition to numerous scientists, supporting personnel and research expeditions, Admiralty Bay is visited by an increasing number of tourists, the latter mainly as organized tourist ship expeditions and private yachts.

A Management Plan for designating Admiralty Bay and its surroundings (herein called the Area) as an Antarctic Specially Managed Area (ASMA), under Annex V of the Protocol to the Antarctic Treaty on Environmental Protection (herein called Protocol), was jointly proposed by Brazil and Poland, in coordination with Ecuador and Peru and voluntarily adopted by the ATCPs at ATCM XX (Utrecht, 1996). This document is a revision of the former Management Plan, as required at ATCM XX.

1. Description of values

Aesthetic values

Admiralty Bay has basic physiographic and aesthetic values as one of the most typical examples of bay/fjord settings in the South Shetland Islands. The ice-free areas within Admiralty Bay are formed by recent and raised pebble-cobble beaches, recent and sub-recent moraines, mountainous peninsulas, rocky islets, spurs and nunataks. The terrain is heavily shaped by glacial, nival and coastal marine processes. These, together with the geological features of the area, add to the great scenic beauty of the landscape.

Environmental values

The area of Admiralty Bay is representative of the terrestrial, limnic, coastal, near-shore, pelagic, and fjord-bottom ecosystem of King George Island.

Flora is mostly represented by mosses, lichen and fungi formations. Twenty four species of birds and six species of pinnipeds have been registered for the Area, but only thirteen species of birds and three species of pinnipeds actually breed within the Area.

The marine ecosystem of the bay largely reflects the general environmental conditions prevailing in the South Shetland Islands. However, there is a unique site, Napier Rock, at the entrance of the bay, where a rich and highly diverse benthic invertebrate fauna is found. Fish are represented by fifteen species of Nototheniidae.

Scientific values

Diverse and continuous scientific activities have been undertaken in the Area for almost 30 years supported by the Polish Henryk Arctowski Station, by the Brazilian Comandante Ferraz Station and by the US Antarctic Program at ASPA No. 128 Western Shore of Admiralty Bay. Research activities at the Peruvian Machu Picchu Station (at Crepin Point) and at the Ecuadorian refuge (at Hennequin Point) have occurred intermittently during the summer.

Many features of Admiralty Bay are of considerable scientific interest. The main themes of field and laboratory research at the Polish and Brazilian stations have been marine and terrestrial biology, including physiology and adaptation of Antarctic fish and krill; taxonomy and ecology of the benthic fauna; vascular plants; mosses and lichens; terrestrial and marine ecology; migration and dispersion of birds. A long-term research project on the biology and dynamics of bird populations (mainly Pygoscelid penguins) has been carried out by the US Antarctic Program since 1976. This study is of relevance for the CCAMLR Ecosystem Monitoring Programme (CEMP). Other studies include geology and palaeontology, glaciology and palaeoclimatology of the King George Island ice cap; and glacio-marine sedimentation in Admiralty Bay. A year-round seismic and Earth-magnetism observatory, established at Arctowski Station in 1978, is the only station of its kind in the South Shetland Islands. Studies on atmospheric chemistry, geomagnetism, the ionosphere and astrophysics have been conducted at Ferraz Station since 1984. A meteorological station has been operational at Arctowski since 1977 and at Ferraz Station since 1984 to provide basic data and to support logistic operations. Research on upper atmosphere winds is being developed at Machu Picchu Station using MST radar.

Both Arctowski and Ferraz stations have hosted many foreign scientists (Argentineans, Belgians, Chileans, Germans, former Soviets and Russians, Netherlands, New Zealanders, Americans, Uruguayans and others). There is a strong tradition of co-operation between Polish and Brazilian scientists in matters related to Admiralty Bay and the South Shetland Islands as a whole.

A comprehensive study of the state of the environment in the Area is under way at Ferraz Station, comprising the analysis of a series of biotic and abiotic parameters. Results will serve as a baseline for future monitoring of activities and for implementation of a strategy for environmental management of the ASMA.

Historic values

Sheltered deep harbours and accessible beaches ensured an early start to activities in Admiralty Bay. The bay offered protection for ships in the area during the sealing and whaling periods in the 19th and early 20th centuries, and ruins of installations related to the latter period still exist. Whale bones cover the beaches and are part of the landscape, remaining as heritage of this period.

The Area was visited by the second French Antarctic Expedition *Pourquoi Pas?*, under Dr J.B. Charcot (1908-10), and by D. Ferguson (1913-14), a geologist who took part in a British whaling expedition. Reports on minerals and rocks collected during these expeditions, published between 1910 and 1921, are among the first earth-science publications on Admiralty Bay and the South Shetland Islands as a whole. The famous British Discovery voyages of 1934 and 1937 collected more rocks, as well as plants and animals from the Area. Results published from 1948 to 1964 constituted a substantial contribution to knowledge of the geology of Admiralty Bay. Argentina established a refuge hut at Keller Peninsula in 1948 (since dismantled) and the work of Argentinean geologists in Admiralty Bay in 1953 concentrated on fossil plants of the Tertiary age.

During the International Geophysical Year (1957-58), the UK Base "G", on Keller Peninsula, Admiralty Bay (opened in 1947 and closed in 1961), later dismantled, was the center of meteorological observations and glaciological and geological research.

Establishment of the Polish Arctowski Station in 1977 at Thomas Point, of the Brazilian Ferraz Station at Keller Peninsula in 1984, and of the Peruvian Machu Picchu Station at Crepin Point in 1989 has provided a sound basis for permanent research in Biological, Earth and Atmospheric sciences, which continues up to now. Ornithological research by US biologists began in 1976, with the establishment of Copacabana Station (unofficially called Pietr J. Lenie) covering the entire western side of Admiralty Bay, from Italian Valley (in Ezcurra Inlet) to Patelnia Point. Since 1985, ornithological research has also been occasionally undertaken at Keller Peninsula, by Brazilian biologists.

Educational and touristic values

Sites of ecological interest and scientific installations in the Area are frequently visited by tourists and participants in non-governmental expeditions, who have thus an opportunity to become familiar with Antarctic environment and activities.

2. Aims and objectives

Taking into account that the Area is already the focus of multiple and continuous activities which tend to become even more intense and diverse in the near future, the present Management Plan is designed to provide mechanisms for:

- Safeguarding the long-term scientific research in the Area while maintaining stewardship of the environment;
- Protecting important physiographic features, and the outstanding biological, ecological, historical and aesthetic values of the Area;

- Improving the understanding of natural processes at work in the Area which in turn will help to protect the environment from unnecessary disturbance;
- Managing potential or actual conflicts of interest between different activities, including science, logistics and tourism;
- Avoiding or minimizing the risk of mutual interference and cumulative impacts on the terrestrial and marine environments; and
- Improving the level of mutual assistance and co-operation among Parties operating in the Area.

3. Management activities

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

- Parties that have active research programmes within the Area should establish an international Admiralty Bay Management Group, which will hold regular meetings (at a convenient time) to:
  - review the functioning and implementation of the Management Plan;
  - facilitate communication between those working in or visiting the Area;
  - monitor the Area to investigate possible sources of environment impact including cumulative impacts;
  - promote the dissemination of information on this Management Plan to all parties operating in the Area, and all other visitors to the Area;
  - maintain a record of activities in the Area;
  - provide the name and address of their co-ordinator.
- Parties that have active research programmes within the Area should consult amongst themselves with a view to:
  - designating a person to coordinate the implementation of the Management Plan in the Area (ASMA Coordinator). Designation will be for a 5 year period on a rotational basis;
  - developing contingency plans for each station, as well as for the whole Area, for oil spills and any other accident with possible significant impact on the environment, including attendance in an emergency;
  - establishing a waste management plan for the Area.
- National Programmes operating within the Area, as well as all other visitors, should undertake activities in accordance with the environmental Code of Conduct contained in this Management Plan.
- Wherever feasible, markers delimiting boundaries of already existing protected areas and other zones of ecological or scientific interest identified in this Management Plan and warnings for visitors about their nature should be provided, and removed when no longer necessary.
- National Programmes that have active research programmes in the Area should make arrangements with other parties that have installations and/or structures now abandoned to consider their value. Conservation plans should be formulated if any of the installations are assessed to be of historical value. If not, plans should be formulated for their removal in

accordance with the provisions of Annex III on Waste Disposal and Waste Management to the Protocol on Environmental Protection.

- National Programmes operating in the Area should ensure that all personnel in their programmes visiting the Area have been briefed on the requirements of the Management Plan and, in particular, on the Environmental Code of Conduct that applies within the Area.
- Tour operators visiting the Area should ensure that their staff, crew and passengers are briefed on, and are aware of the requirements of this Management Plan and supporting documentation.
- Copies of this management plan and supporting documentation, such as maps and appendices, should be kept in appropriate stations and research hut facilities and be made available to all persons in the Area.

4. Period of designation

Designated for an indefinite period.

5. Description of the Area

5(i) Geographical co-ordinates, boundary markers and natural features

General description

ASMA No. 1: Admiralty Bay, King George Island (62º 01'21"S – 62º14'09"S/58º 15'05"W–58º41'02"W) comprises the terrestrial and marine areas immediately within the glacial drainage basin of this bay (Fig. 2). In addition, it includes ASPA No. 128 Western Shore of Admiralty Bay, part of which is outside the drainage basin area.

The Area is bounded by a line extending from its southern margin at Telefon Point to The Tower, and then toward Jardine Peak intersecting the ice divide of the Warszawa ice-field, thence following this divide to the west of Ezucurra Inlet, north-eastward to enclose Mackellar and Martel inlets, and then southward through Ternyck Needle to Cape Syrezol on the eastern shore of, Admiralty Bay. The waters of Admiralty Bay and a small part of Bransfield Strait north of a straight line between Cape Syrezol and Telefon Point are also included in the ASMA. There are no fixed survey points available at the Area boundaries, but markers indicating the ASMA will be fixed at appropriate arrival points on land.

The revised total area of ASMA No. 1 is 360 km², of which 194 km² are ice covered, including 138 km² of Admiralty Bay Waters and an adjoining 7 km² of the Bransfield Strait (Admiralty Chart N° 6258, 1968, London; Polish Chart Admiralty Bay, King George Island, 1:50,000, Battke, S, Warszawa, 1990; SSSI No. 8: Western Shore of Admiralty Bay, King George Island, 1:12 500, ed. Department of Antarctic Biology, Polish Academy of Sciences, Pudelko R., 2002; Brazilian Chart No. 25121, Baía do Almirantado, 1:40,000, 1984, Rio de Janeiro; Braun *et al.* 2001a and b; Arigony-Neto, 2001).

Approximately 90% of the land area within the proposed ASMA is ice-covered, the ice-free areas represent about 37 km².

Earth Science features

The glacial drainage basin is formed mainly by the main ice cap of King George Island which flows from north, east and west towards the trough of Admiralty Bay. At the head of the bay, the ice cap

spills into three inlets: Ezcurra, Mackellar and Martel inlets. Heavily crevassed outlet glaciers descend towards the sea becoming tidewater glaciers. Along the west coast, in the area of ASPA No. 128, some glaciers descending from Warszawa Peninsula (ice cap) terminate on land; others form tidewater ice cliffs. The eastern coast of the bay, from Cape Syrezol to Hennequin Point, is bordered mainly by ice-cliffs of tidewater glaciers descending from Krakow Ice Field, and by rocky spurs and narrow beaches. In the whole area of Admiralty Bay intensive deglaciation is well documented.

Geomorphology of the area is dominated by glacial erosional and depositional landforms, pebble to cobble covered beaches and raised marine terraces. Igneous and sedimentary rocks outcropping around Admiralty Bay record a complex Cenozoic evolution of a volcanic island arc intercalated with terrestrial and glacial deposits.

Climate

The climate of the Area is typical of maritime Antarctica. Based on data of more than 20 years obtained at the Polish Arctowski Station and at the Brazilian Comandante Ferraz Station, the local microclimate is characterized by an average annual temperature of around -l.8ºC and an average annual wind speed in the order of 6.5 m s^{-1}. Annual average precipitation is 508.5 mm, humidity is 82% and pressure is 991 hPa. The waters of Admiralty Bay have an average annual temperature range of -1.8° to +4°C, being well mixed by tides and strongly influenced by currents from the west of Bransfield Strait.

Flora

In the adjoining ice-free areas of Admiralty Bay, the distribution of plant communities is closely related to geoforms and to the presence of birds and soil. Wherever edaphic conditions are favorable, mosses form strands which also contain lichen and fungi formations. The lichenized mycobiota is restricted to the rock fragments and rock outcrops, sometimes associated with bird colonies. The coastal areas are the most densely covered, being represented mostly by moss carpet formations. Near the Brazilian Station two of these areas occur, both of which are almost 300 m long. As elevations start up, showing rocky outcrops, crustose lichens and mosses which grow directly on rock predominate. The species are listed at Appendix A.

Birds

Within the Area, 13 species of birds breed. Three sympatrica1ly breeding Pygoscelid penguins make up 91% of the number and up to 95% of the biomass of the breeding community. Other seabirds breeding in the Area are: southern giant petrel*;* blue-eyed shag*;* brown skua; south polar skua; Wilson's storm petrel*;* black-bellied storm petrel, cape petrel, kelp gull*,* Antarctic tern and American sheathbill. The areas of ASPA No. 128 Western Shore of Admiralty Bay, Cape Vauréal, Chabrier Island and surroundings, are the most important bird breeding locations in Admiralty Bay. Around Vaureal Cape, nests of all species mentioned above are found, including all of the Area's blue-eyed shags and 50% of its giant petrels. The species are listed at Appendix B.

Mammals

Six species of pinnipeds occur in the Area (Appendix B). The most frequent mammal during winter is the crabeater seal. During summer, elephant seals and fur seals are the most frequent and abundant. Fur seals, once relatively rare, have increased in number in recent years. Elephant seals and Weddell seals breed in the area. Leopard seals are found throughout the year in varying numbers. Ross seals rarely occur in the Area. The humpback whale is the most frequent cetacean during summer.

Marine ecosystem

Macroalgae, predominantly Phaeophyta and Rhodophyta, characterize the shallow water bottom community down to 50-60 m depth. With the exception of *Nacella concinna*, epifauna is practically absent in the intertidal zone. The vagile benthos is abundant with a high variety and density of Amphipoda. Below 4-5 m, substrata are typically sandy and dominated by Isopoda, particularly the genus *Serolis*. With the increasing depth, vagile species such as *Sterechinus, Neobuccinum* and *Parborlasia* dominate. In deeper waters, on a muddy and more stable substrata, sessile forms include sponges, anemones, the bivalve *Laternula elliptica* and tunicates, besides high-density concentrations of echinoderms such as *Amphioplus acutus, Ophionotus victoriae* and *Odontaster validus.* Scavenger invertebrates include *Labidiaster annulatus, Gliptonotus antarcticus, Parborlasia corrugatus* and *Neobuccinum eatoni*. The species found in the area are largely the same as those observed on similar substrata at other sites in the region, indicating homogeneity in the benthic fauna of the Antarctic Peninsula and related areas. Fish are represented by fifteen Nototheniidae, mainly *Notothenia neglecta, N. gibberifrons, N. coriiceps, Nototheniops nudifrons, Trematodus newnesi, T. borchgrewincki* and *Pleuragramma antarcticum*, two Channichthydae species, Hapagiferidae and Zoarcidae.

5(ii) Access to the Area

In order to minimize the risks of accidents, environmental damage or harmful interference with research activities, pedestrians, ships, small boats, aircrafts and land vehicles entering and/or operating in the Area should follow the Environmental Code of Conduct that applies within the Area. (See Section 8).

5(iii) Location of structures within and adjacent to the Area

Main permanent structures in the Area (Fig. 2)

Henryk Arctowski Station (Poland) - 62º09'34"S – 058º28'15"W
The station was established by Poland at Thomas Point on 26th February 1977 as a facility for continuous scientific research and associated logistic operations of the Polish Antarctic Programme, and has been in year-round operation since then. It has dormitories with 10 berths in summer and up to 14 in winter; biological, meteorological and geophysical laboratories; storage facilities; a small hospital unit; double-walled fuel tanks with total capacity of 1,000 tonnes; hangars for boats and land vehicles etc. The station is equipped with two helicopter pads.

Comandante Ferraz Station (Brazil) – 62º05'07"S - 58º23'32"W
The station was established in 1984 on the eastern coast of Keller Peninsula as the base for scientific research and associated logistic operations conducted by the Brazilian Antarctic Programme. It started year-round operations in 1986. The station consists of 64 containers including biological, chemical, meteorological and geophysical laboratories; dormitories with a capacity of 46 berths; storage facilities; a garage for land vehicles, diesel generators etc. Fuel is stored in 17 large double-walled steel tanks with a total capacity of 316,000 liters of diesel, and in a small tank (3,000 L) for gas. The station is equipped with one helicopter pad.

Machu Picchu Station (Peru) - 62º05'07"S - 58º23'32"W
The station was established in 1988 at Crépin Point, Mackellar Inlet. At present, it is used for summer operations. The station consists of five metallic modules including: Scientific Laboratory, Power House/Garage/Waste Management, Living quarters, Emergency refuge and Dining-room/ Kitchen. The station is equipped with one portable helicopter pad.

Copacabana Field Station (United States of America) - 62º10'45" S - 58º26'49" W
Llano Point has been in use annually during the summer since 1978 for ornithological research, in close cooperation with Arctowski station.

Refuge at Hennequin Point (Equador) - 62º 07' 16" S - 58º 23' 42"W
The refuge was built in 1989, and has occasionally been used since then during summer.

Minor and/or semi-permanent structures

There are a number of minor structures in the area, such as (Fig. 3):

a) the remains of Italian hut Campo Bove at Italian Valley, Ezcurra Inlet;
b) an old whaling boat, on Keller Peninsula;
c) an assembled whale skeleton on Keller Peninsula;
d) wooden barrels from whaling period at Barrel Point, Ezcurra Inlet;
e) a collection of whaling harpoons assembled on the shores of Admiralty Bay, exhibited at Arctowski Station;
f) a group of five crosses and graves on Keller Peninsula. Four of these are British graves, with crosses erected in memory of members of British expeditions who perished at sea and on ice, and one was erected in honour of a deceased member of the Brazilian military;
g) a wooden cross on top of Mount Flagstaff on Keller Peninsula;
h) two Brazilian emergency refuges on Keller Peninsula;
i) removable Polish caravans functioning as summer field laboratories (e.g. at Demay Point).

5 (iv) Location of protected areas within the ASMA (Fig. 2)

The following areas are currently designated within the proposed ASMA:

ASPA No. 128 (Western shore of Admiralty Bay)

62º09'46"S - 62º14'10"S – 58º25'15"W - 58º29'58"W

This area is the site of long-term studies on bird biology performed by the US Antarctic Program.

Historic Site No. 51, at Arctowski Station – 62° 10'S, 58° 28'W

This consists of the grave with a cross of Eng. W. Puchalski, an internationally acclaimed Polish nature photographer and director of Arctic and Antarctic nature films.

6. Special Zones within the Area

In addition to ASPA No. 128 and Historic Site No. 51, and to sites specified in section 5(iii), the following zones were identified within the ASMA as being zones in which activities should be managed.

6(i) Zones visited by tourists and other visitors

- Arctowski and Ferraz Stations: movement of tourists and other visitors should follow the pre-established tour routes (Fig. 5). In the future, routes for tourists may be established at Machu Picchu Station and Ecuador field camp;

- Isolated laboratory modules, refuges and the area behind Ferraz Station: visits should be only by small accompanied groups.

6(ii) Zones of scientific and/or ecological interest where access by tourists and other visitors should be managed (Fig. 4)

a) Fresh water lakes around Arctowski Station: example of freshwater environment;
b) Italian Valley: concentration of seals;
c) Dufayel Island: concentration of seals;
d) Crépin Point: concentration of seals;
e) Area north-west of Ferraz Station: concentration of seals;
f) Area west of Ferraz Station: concentration of seals;
g) Coastal area from Refuge No. 1 (Ferraz Station) to Plaza Point: concentration of seals and penguins;
h) Crosses Hill on northern flank of Ferraz, on Keller Peninsula: Concentrations of terns. Except in connection with scientific activities, survival cache replacement, or emergencies, and essential station operations, visits should be limited during the critical bird breeding season from 1 October to 31 December.
i) Coastal area up to 7 m in shore, north of Base "G" hill: presence of vegetation banks;
j) Freshwater ponds near Arctowski and Ferraz stations: example of freshwater environment;
k) Ullman Point (Ullman Spur): concentration of seals;
l) Hennequin Point: concentration of seals; plant fossil localities;
m) Cape Vaureal - Chabrier Rock: breeding area for penguins, southern giant petrels and blue-eyed shags. Visits should be avoided during the breeding season, from 1 October to 1 March, except in connection with scientific activities;
n) Shallow marine waters down to 100 m in front of: ASPA No. 128, Martel, Mackellar and Ezcurra Inlets; Napier Rock and Monsinet Cove: diverse benthic communities and scientific experiments and concentrations of different species of adult and juvenile fish.

Although not officially designated as protected areas under Annex V of the Protocol, the zones listed above have considerable scientific/ecological interest as breeding sites and/or concentrations of birds and/or mammals, as feeding sites for birds and marine mammals, as sites of typical vegetation cover, varied marine habitats, or sites of special scientific interest. Some of these zones, such as Chabrier Rock and Vaureal Cape, on the eastern shore of Admiralty Bay (Fig. 2) are of great relevance, as it is the only breeding site for the Antarctic blue-eyed shag, penguins and southern giant petrel outside ASPA 128 Western Shore of Admiralty Bay.

Activities in all zones should be carried out with particular care to avoid or minimize disturbance of wildlife, trampling of vegetation and interference with on-going research. Freshwater lakes around Arctowski and Ferraz should be only accessed for the purpose of water supply and associated station operations and for relevant scientific research.

The marine benthic and pelagic organisms are of considerable scientific interest and are fundamental links in the marine food chain of the area. They are critically linked to maintenance of the ecological balance including that of birds and marine mammals.

7. Maps

- Figure 1: Location of ASMA No. 1 in King George Island, Antarctic Peninsula
- Figure 2: Admiralty Bay Antarctic Specially Managed Area – ASMA No. 1
- Figure 3: Location of structures and anchoring sites
- Figure 4: Location of Zones of Scientific and/or Ecological Interest
- Figure 5A: Vehicles and pedestrian limits and tour routes – Comandante Ferraz Station
- Figure 5B: Facilities Zones – Comandante Ferraz Station
- Figure 5C: Vehicles and pedestrian limits and tour routes – Henryk Arktowski Station
- Figure 5D: Facilities Zones – Machu Picchu Station
- Figure 6: Flora (colonized areas) and Birds (occurrence sites)

8. General Code of Conduct

With regard to the provisions of Articles 4-6 of Annex V to the Protocol on Environmental Protection on Area Protection and Management, the following Code of Conduct is proposed as a framework to guide on-going and future research and logistic operations of the parties which have permanent and/or summer installations in the Area; and similar activities of other parties.

8(i) Access to and movement within or over the Area

Ships

- Anchoring inside Mackellar Inlet should be undertaken with caution because of the large number of rocks in its central part. It is recommended that only one ship at any time should anchor in the inlet.
- Anchoring inside Martel Inlet should be limited to three ships as follows: two immediately offshore from Ferraz Station and the third at the eastern end of the inlet;
- Anchoring inside Ezcurra Inlet should be limited to two ships, one immediately east of Dufayel Island and the other south of Dufayel Island, opposite Italian Valley;
- Caution should be exercised when anchoring near Arctowski Station owing to strong currents and winds from different directions.

Small boats

- Landing on the shore in front of Arctowski Station (Arctowski Cove and Halfmoon Cove), Ferraz Station (Visca Anchorage) and other installations should be made at the recommended landing sites shown in Figure 3;
- In addition to the provisions applicable to ASPA No. 128 Western Shore of Admiralty Bay, and except in case of emergencies and activities related to research, monitoring or replacement of survival food and fuel storage, small boats should avoid landing on areas of scientific and/or ecological interest identified in Figure 4.

Aircraft

- Except in emergencies, or in the course of carrying out inspections under Article VII of the Antarctic Treaty, helicopters ferrying scientists and visitors to and from Arctowski, Ferraz and Machu Picchu stations and Ecuador field camp should notify the relevant station/camp

leader well in advance of the estimated time of arrival. They should land only on helicopter pads/landing sites indicated at each of the stations (Figure 2). There are no refueling facilities at the stations;

- In addition to the provisions applicable to ASPA No. 128: Western Shore of Admiralty Bay, and except in case of emergency or research activities, no helicopter should land in or nearby, or fly at altitudes of less than 600 m over the areas of biological/ecological interest shown in Figure 4;
- There are no landing sites for fixed-wing aircraft in the Area.

Land vehicles

- Areas used by land vehicles for station and station-supported research operations should, in general, be restricted from Arctowski up to Thomas Point, and between Ferraz Station and the isolated modular laboratories around Ferraz and refuges on Keller Peninsula. Areas within which most vehicle operation are constrained and routes between Ferraz Station and the modular laboratories and refuges are shown in Figure 5A;
- No land vehicles should enter ASPA No. 128 Western Shore of Admiralty Bay;
- Use of station vehicles to visit Plaza Point laboratories and refuges on the Keller Peninsula should be conditional on previous arrangement with the station leader at Ferraz Station;
- Snow-mobiles and snow-cats should be used only on ground covered by snow or ice.

Pedestrians

- Areas of pedestrian activity are generally associated with stations and station-supported research operations. All movement should be undertaken carefully to minimize disturbance to animals, soil and vegetated areas, and not damage or dislodge flora. Whenever possible, routes shown in Figures 5A and B should be used;
- No person should enter ASPA No. 128 Western Shore of Admiralty Bay, except to conduct scientific research in accordance with a permit issued under Art. 3 of Annex II to the Protocol and with the approved management plan for the area.

8(ii) Activities which may be conducted in the Area, which will not jeopardize the values of the area, and which are consistent with the Code of Conduct

- Scientific research;
- Logistical support of scientific research;
- Visitation for the purpose of education or recreation, including tourism;
- Management activities, including maintenance or removal of facilities; and monitoring the implementation of this Management Plan;
- Media, arts, or other official national program visitors.

Further restrictions apply to activities within ASPA No. 128 Western Shore of Admiralty Bay.

8(iii) Installation, modification or removal of structures

Installation of new stations/refuges and modifications, or removal of already existing installations or other facilities in the Area, and location of field camps should be done only after consultation with the Parties that have active research programmes in the Area, and in conformity with provisions of Article 8 and Annex 1 of the Environment Protocol and this Management Plan; in a manner that does not compromise the values of the Area.

Scientific equipment installed in the Area should be clearly identified by country, name of principal investigator, contact details, and date of installation. All equipment and associated materials should be removed when no longer in use.

Field camps should be located as far as possible on non-vegetated sites, such as on barren ash plains, slopes or beaches, or on thick snow or ice cover when practicable, and should also avoid concentrations of mammals or breeding birds. Previously occupied campsites should be re-used where appropriate.

8(iv) Taking or harmful interference with native flora and fauna

Taking or harmful interference with native flora or fauna is prohibited, except by Permit issued under the provisions of Article 3 of Annex V to the Protocol. Where taking or harmful interference with animals for scientific purposes is involved, the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica* should be used as a minimum standard.

Taking of marine organisms for scientific purposes should be limited to that restrictedly necessary to meet the purpose of the research. Geological sampling of bottom sediments, particularly in shallow waters, should be carried out with extreme care so as to minimize adverse impact on the environment, or interference with other scientific research under way on benthic ecology.

8(v) The collection or removal of materials not imported into the Area

Materials should only be collected and removed from the Area for scientific, management or educational purposes, and should be limited to the minimum necessary for those needs.

Souvenirs, specifically rocks, minerals, fossils, eggs, flora and fauna, or any other material not brought into the area by the visitor, should not be collected in, or removed from the Area.

It may be permissible to remove from the site materials such as beach litter, dead or pathological fauna or flora or abandoned relics and artifacts from previous activities.

8(vi) Disposal of waste

Disposal of waste generated by scientific research programmes, tourism and all other governmental or non-governmental activities in the ASMA should be carried out in compliance with the provisions of Annex III to the Protocol.

All wastes, other than human and domestic liquid waste, should be removed from the Area.

8(vii) Requirements for Reports

The ASMA coordinator should maintain a record and provide summary descriptions of the reports of activities in the Area in the Annual Exchange of Information under the Antarctic Treaty for the preceding year.

8(viii) Exchange of information

Parties proposing to conduct, support, or authorize research or other activities in the Admiralty Bay ASMA are requested to inform the ASMA Coordinator as far in advance as possible of their planned activities. The Coordinator should make the information available to the other Parties. This will enable greater integration to be achieved between research programmes, enhance cooperation and avoid cumulative impacts, facilitating monitoring and management of the Area. Where applicable, provisions related to environmental impact assessment as established in the Protocol on Environmental Protection to the Antarctic Treaty should be followed.

At the end of each summer field season, Parties should notify the Coordinator of:

- any activities carried out by its nationals or other parties including tourists and participants in non-governmental expeditions in the ASMA, contrary to the provisions of this Management Plan; and
- steps taken to enforce the provisions of this Management Plan.

IAATO should, as far as practicable, provide the ASMA Coordinator with details of scheduled visits by IAATO-registered vessels. Tour operators not affiliated to IAATO should also inform the coordinator of planned visits.

9. Supporting documentation

A proposal prepared by Brazil and Poland, in coordination with Ecuador and Peru, that Admiralty Bay, King George Island (South Shetland Islands) be designated as an Antarctic Specially Managed Area (ASMA) 1996. Agenda item 20a XX ATCM WP 15 (Rev). Now reviewed.Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas, appended to Resolution 2 (1998) of Antarctic Treaty Consultative Meeting XXII.

Final Report of the Twelfth Antarctic Treaty Special Consultative Meeting**.** The Hague, 11-15 September 2000. Management Plan for Site of Special Scientific Interest No.8 (ASPA 121), Western shore of Admiralty Bay, King George Island, South Shetland islands, pp. 68-73.

Final Report of the Twelfth Antarctic Treaty Special Consultative Meeting**.** The Hague, 11-15 September 2000. Management Plan for Site of Special Scientific Interest No. 34. (ASPA 151) Lions Rump, King George Island, South Shetland Islands, pp. 95-102.

APPENDIX A

Preliminary plant checklist from adjacent ice-free areas to Admiralty Bay, King George Island

ANGIOSPERMAE

POACEAE
Deschampsia antarctica Desv.

CARYOPHYLLACEAE
Colobanthus quitensis (Kunth) Bartl.

MOSSES

AMBLYSTEGIACEAE
Orthotheciella varia (Hedw.) Ochyra
Sanionia uncinata (Hedw.) Loeske
S. georgico-uncinata (Mull Hal..) Ochyra & Hedenas
Warnstorfia laculosa (Müll. Hal.) Ochyra & Matteri
Warnstorfia sarmentosa (Wahlenb.) Hedenäs

ANDREAEACEAE
Andreaea depressinervis Card.
Andreaea gainii Card.
Andreaea regularis Muell.

BARTRAMIACEAE
Bartramia patens Brid.
Conostomum magellanicum Sull.

BRACHYTHECIACEAE
Brachythecium austrosalebrosum (Müll. Hal.) Kindb.
Brachythecium glaciale B.S.G.

BRYACEAE
Bryum amblyodon Müll. Hal.
Bryum argenteum Hedw.
Bryum orbiculatifolium Card. et Broth.
Bryum pallescens Schleich. ex Schwaegr.
Bryum pseudotriquetrum (Hedw.) Schwaegr.
Pohlia cruda (Hedw.) Lindb.
Pohlia drummondii (Müll. Hal.) A. L. Andrews in Grout
Pohlia nutans (Hedw.) Lindb.
Pohlia wahlenbergii (Web. Et Mohr.) Andrews

DICRANACEAE
Anisothecium cardotii (R. Br. ter.) Ochyra
Chorisodontium aciphyllum (Hook. f. et. Wills.) Broth.
Kiaeria pumila (Mitt. in Hook. f.) Ochyra – very rare.

DITRICHACEAE
Ceratodon purpureus (Hedw.) Brid.
Distichum capillaceum (Hedw.) B.S.G.
Ditrichum hyalinum (Mitt.) Kuntze
Ditrichum lewis-smithii Ochyra

ENCALYPTACEAE
Encalypta rhaptocarpa Schwaegr.

GRIMMIACEAE
Grimmia reflexidens Müll. Hal.
Racomitrium sudeticum (Funck) Bruch & Schimp. in BSG.
Schistidium amblyophyllum (Müll. Hal.) Ochyra & Hertel
Schistidium antactici (Card.) L. I. Savicz & Smirnova
Schistidium cupulare (Müll. Hal.) Ochyra
Schistidium falcatum (Hook. f. at Wils.) B. Bremer
Schistidium halinae Ochyra
Schistidium occultum (Müll. Hal.) Ochyra & Matteri
Schistidium rivulare (Brid.) Pobp.
Schistidium steerei Ochyra
Schistidium urnulaceum (Müll. Hal.) B. G. Bell.

HYPNACEAE
Hypnum revolutum (Mitt.) Lindb.
Platydictya jungermannioides (Brid.) Crum

MEESIACEAE
Meesia uliginosa Hedw.

ORTHOTRICHACEAE
Muelleriella crassifolia (Hook. f. et Wils.) Dus.

POLYTRICHACEAE
Polytrichastrum alpinum (Hedw.) G. L. Smith
Polytrichum strictum Brid.
Polytrichum juniperinum Hedw.
Polytrichum piliferum Hedw.

POTTIACEAE
Dydimodon gelidus Card.
Hennediella antarctica (Angstr.) Ochyra & Matteri
Hennediella heimii (Hedw.) Zand.
Stegonia latifolia (Schwaegr. in Schult.) Vent in Broth.
Syntrichia filaris (Müll. Hal.) Zand.
Syntrichia princeps (De Not.) Mitt.
Syntrichia saxicola (Card.) Zand.

SELIGERACEAE
Dicranoweisia brevipes (Müll. Hal.) Card..
Dicranoweisia crispula (Hredw.) Milde
Dicranoweisia grimmiaceae (Müll. Hal.) Broth.

ALGAE

MACROSCOPIC CONTINENTAL ALGAE
Prasiola crispa (Lightfoot) Menegh

MICROSCOPIC CONTINENTAL ALGAE
Bacillariophyceae
Coscinodiscales
Orthoseira cf. *dendroteres* (Ehrenberg) Crawford

Naviculales

Amphora veneta Kützing
Achnanthes lanceolata (Brébisson) Grunow
Achnanthes marginulata Grunow
Caloneis cf. *silicula* (Ehrenberg) Cleve
Caloneis cf. *schumanniana* (Grunov) Cleve
Cocconeis sp.,
Fragilaria bidens Heiberg
Fragilaria capucina Desmazieres
Fragilaria construens f. *binodis* (Ehrenberg) Hustedt
Fragilaria pinnata Ehrenberg
Gomphonema parvulum (Kützing) Kützing
Hantzschia amphioxys (Ehrenberg) Grunow
Luticola muticopsis (Van Heurck) D. G. Mann
Luticola mutica var. *ventricosa (*Kützing) Cleve et Grunow
Navicula cf. *bryophila* Petersen
Navicula elginensis (Gregory) Ralfs
Navicula glaciei Van Heurck,
Navicula phyllepta Kützing
Nitzschia agnita Hustedt
Nitzschia cf. *fontifuga* Cholnoky
Nitzschia frustulum (Kützing) Grunow
Nitzschia gracilis Hantzsch
Nitzschia homburgiensis Lange-Bertalot
Nitzschia cf. *hybrida* Grunow
Nitzschia inconspicua Grunow
Nitzschia perminuta (Grunow) M. Pergallo
Opephora olsenii Moeller
Pinnularia borealis Ehrenberg
Pinnularia ignobilis (Krasske) Cleve-Euler
Pinnularia microstauron (Ehrenberg) Cleve
Stauroneis cf. *anceps* Ehrenberg
Stauroneis cf. *simulans* (Donkin) R. Ross.

MACOSCOPIC FUNGI
Omphalina antarctica Sing.
Galerina moelleri Bas.

LICHENS AND LICHENICOLOUS FUNGI
Acarospora macrocyclos Vain.
Alectoria minuscula – Lindsay
Arthopyrenia maritima Øvstedal
Arthrorhaphis citrinella (Ach.) Poelt
Austrolecia antarctica Hertel
Bacidia stipata Lamb
Biatorella antarctica Murray
Bryonora castanea (Hepp) Poelt
Bryoria chalybeiformis (L.) Brodo et D. Hawksw.
Buellia anisomera Vain.
Buellia augusta Vain.
Buellia cladocarpiza Lamb
Buellia coniops (Wahlenb. in Ach.) Th. Fr.
Buellia granulosa (Darb.) Dodge
Buellia latemarginata Darb.
Buellia papillata (Sommerf.) Tuck.
Buellia perlata (Hue) Darb.
Buellia pycnogonoides Darb.
Buellia russa (Hue) Darb.
Buellia subpedicillata (Hue) Darb.
Caloplaca amniospila
Caloplaca athallina Darb.
Caloplaca buelliae Olech & Søchting
Caloplaca cirrochrooides (Vain.) Zahlbr.
Caloplaca citrina (Hoffm.) Th. Fr.
Caloplaca iomma Olech & Søchting
Caloplaca millegrana
Caloplaca psoromatis Olech & Søchting
Caloplaca regalis (Vain.) Zahlbr.
Caloplaca siphonospora Olech & Søchting
Caloplaca sublobulata (Vain.) Zahlbr.
Caloplaca tetraspora (Nyl.) H. Oliv.
Caloplaca tiroliensis Zahlbr.
Candelaria murrayi (Dodge) Poelt
Candelariella hallettensis (Murray) Øvstedal
Candelariella vitellina (Hoffm.) Müll. Arg.
Carbonea vorticosa (Flörke) Hertel
Catapyrenium daedaleum (Kremp.) Stein
Catapyrenium lachneum (Ach.) R. Sant.
Catillaria corymbosa (Hue) Lamb
Cladonia cariosa (Ach.) Spreng.
Cladonia furcata (Huds.) Schrader
Cladonia phyllophora Ehrh. ex Hoffm.
Cladonia pyxidata (L.) Hoffm.
Coelocaulon aculeatum (Schreber) Link

Coelocaulon epiphorellum (Nyl. in Crombie) Kärnef.
Cystocoleus ebeneus (Dillwyn) Thwaites
Dermatocarpon intestiniforme (Körb.) Hasse
Haematomma erythroma (Nyl.) Zahlbr.
Himantormia lugubris (Hue) Lamb
Hypogymnia lugubris (Pers.) Krog
Hypogymnia lububris (Pers.) Krog f. *compactior* (Zahlbr.) D. C. Linds.
Japewia tornoensis (Nyl.) Tønsberg
Lecania brialmontii (Vain.) Zahlbr.
Lecania gerlachei (Vain.) Zahlbr.
Lecanora dispersa (Pers.) Sommerf.
Lecanora expectans Darb.
Lecanora physciella (Darb.) Hertel
Lecanora polytropa (Hoffm.) Rabenh.
Lecidea assimilata Nyl.
Lecidea atrobrunnea (Ramond ex Lam. et DC.) Schaer.
Lecidea lapicida (Ach.) Ach.
Lecidea sarcogynoides Körb.
Lecidea sciatrapha Hue
Lecidella aff. *carpathica* Körb. –
Lecidella stigmatea (Ach.) Hertel and Leuckert
Lecidella wulfenii (Hepp) Körb.
Leptogium puberulum Hue
Massalongia carnosa (Dicks.) Körb.
Mastodia tesselata Auct.
Megaspora verrucosa (Ach.) Hafellner
Microglaena antarctica Lamb
Ochrolechia frigida (Sw.) Lynge
Ochrolechia parella (L.) A. Massal.
Pannaria hookeri (Borrer ex Sm.) Nyl.
Parmelia saxatilis (L.) Ach.
Physcia caesia (Hoffm.) Fürnr.
Physcia dubia (Hoffm.) Lettau
Physcia cf. *wainioi* Räs.
Physconia muscigena (Ach.) Poelt
Placopsis contortuplicata Lamb
Poeltidea perusta (Nyl.) Hertel et Hafellner
Polyblastia gothica Th. Fr.
Porpidia albocaerulescens (Wulfen) Hertel et Knoph
Porpidia crustulata (Ach.) Hertel et knoph
Pseudephebe minuscula (Nyl. ex Arnold) Brodo et D. Hawksw.
Pseudephebe pubescens (L.) Choisy
Pseudevernia pubescens
Psoroma hypnorum (Vahl) Gray
Ramalina terebrata Hook et Tayl.
Rhizocarpon geminatum Körb.
Rhizocarpon geographicum (L.) DC.
Rhizocarpon polycarpon (Hepp) Th. Fr.
Rhizoplaca aspidophora (Vain.) Redón
Rhizoplaca melanophthalma (DC. in Lam. et DC.) Leuck. et Poelt

Rinodina deceptionis Lamb
Rinodina mniaraea (Ach.) Körb.
Rinodina petermanii (Hue) Darb.
Rinodina turfacea (Wahlenb.) Körb.
Sphaeorophorus fragilis (L.) Pers.
Sphaeorophorus globosus (Hudson) Vain.
Sphaeorophorus cfr. *melanocarpus* (Sw.) DC.
Staurothele gelida (Hook & Tayl.) Lamb
Stereocaulon alpinum Laurer ex Funck
Stereocaulon glabrum (Müll. Arg.) Vain.
Tephromela atra (Hudson) Hafellner
Thelocarpon cyaneum Olech et Alstrup
Tremolecia atrata (Ach.) Hertel
Umbilicaria aprina Nyl.
Umbilicaria cfr. *cristata* Dodge et Baker
Umbilicaria decussata (Vill.) Zahlbr. –
Umbilicaria propagulifera (Vain.) Llano
Umbilicaria rufidula (Hue) Filson
Usnea acromelana Stirton
Usnea antarctica Du Rietz
Usnea aurantiaco-atra (Jacq.) Bory
Verrucaria ceuthocarpa Wahlenb.
Verrucaria cylindrophora Vain.
Verrucaria dispartita Vain.
Verrucaria elaeoplaca Vain.
Verrucaria psycrophila Lamb
Verrucaria tesselatula Nyl.
Xanthoria candelaria (L.) Th. Fr. –
Xanthoria elegans (Link.) Th. Fr.

APPENDIX B

Fauna recorded at Admiralty Bay, King George Island

Birds recorded at Admiralty Bay

Breeding species

Pygoscelis adeliae
Pygoscelis papua
Pygoscelis antarctica
Macronectes giganteus
Daption capense
Oceanites oceanicus
Fregetta tropica
Phalacrocorax bransfieldensis
Chionis alba
Catharacta maccormicki
Catharacta lonnbergi
Larus dominicanus
Sterna vittata

Non-breeding

Frequent:

Eudyptes chrysolophus
Fulmarus glacialoides
Pagodroma nivea
Sterna paradisaea

Sporadic:

Aptenodytes patagonicus
Aptenodytes forsteri
Edyptes chrysocome
*Spheniscus magellanicus**
Talassarche melanophris
*Phoebetria fusca**
*Phoebetria palpebrata**
Thalassoica Antarctica
Halobaena caerulea
*Pachyptila desolata**
Bubulcus ibis
Cygnus melanocoryphus
*Anas sibilatrix**
Anas georgica
Calidris fuscicollis
Steganopus tricolor*
Catharacta chilensis*

Pinnipeds recorded at Admiralty Bay

Mirounga leonina
Lobodon carcinophagus,
Leptonychotes weddelli,
Hydrurga leptonyx,
Arctocephalus gazella,
Ommatophoca rossi *

* Only one visit.

APPENDIX C

Code of Conduct for Visitors

1. Introduction

This code of conduct has been produced for commercial tour operators (IAATO and non-IAATO affiliated), private expeditions and National Antarctic Programme scientists and staff when undertaking recreational visits to Admiralty Bay.

2. General Guidelines

- Leaders of tourist and non-governmental expeditions wishing to visit Arctowski, Ferraz or Machu Picchu stations should contact the Department of Antarctic Biology, Polish Academy of Sciences (02-141 Warsaw, Poland, Ustrzycka), the Comissão Interministerial para os Recursos do Mar (Ministério da Marinha, Esplanada dos Ministérios, 70055-900, Brasília, DF, Brazil), or the Instituto Antártico Peruano – INANPE (Jr. Ucayali 259, Lima – Perú) respectively, well in advance of the planned visit to make the necessary arrangements. This does not preclude visits in emergency situations.
- The State Party responsible for tour operators should ensure that tour operators, their staff, tourists and other visitors are fully informed of, and comply with, the provisions of this Management Plan.
- Expedition Leaders of cruise ships and Masters of national programme support vessels are encouraged to exchange itineraries in order to avoid two ships unintentionally converging on a site simultaneously.
- For commercial cruise operators, no more than 100 passengers may be ashore at a site at any time, accompanied by a minimum of one member of the expedition staff for every 20 passengers.
- Members of non-governmental and tourist expeditions visiting Arctowski and Ferraz stations should use the routes shown in Fig. 5.A and B. These routes give the opportunity to observe wildlife and the station installations, while minimizing disturbance to station activities and the environment, and avoiding habitat degradation.
- In order to avoid environmental impact, disturbance of wildlife and interference with on-going scientific research, landing at or entering of the special zones listed in section 6(ii) should not take place, except in emergencies.
- All movement on land should be undertaken carefully to minimize disturbance to animals, soil and vegetated areas, or disturb scientific equipment. The visitor should:
    - avoid walking on vegetation such as moss or lichen.
    - maintain an appropriate distance from birds or seals which is safe and does not cause them disturbance. As a general rule, maintain a distance of 5 metres. Where practicable, keep at least 15 metres away from fur seals.
    - wash boots and clean clothes, bags, tripods and walking sticks before landing, in order to prevent biological introductions.
    - not leave any litter.

- not take biological or geological souvenirs or disturb artefacts.
- not write or draw graffiti on any man-made structure or natural surface.
- not touch or disturb scientific instruments or markers.
- not touch or disturb field depots or other equipment stored by National Antarctic Programmes.

Figure 1: Location of ASMA Nº 1 in King George Island, Antartic Peninsula

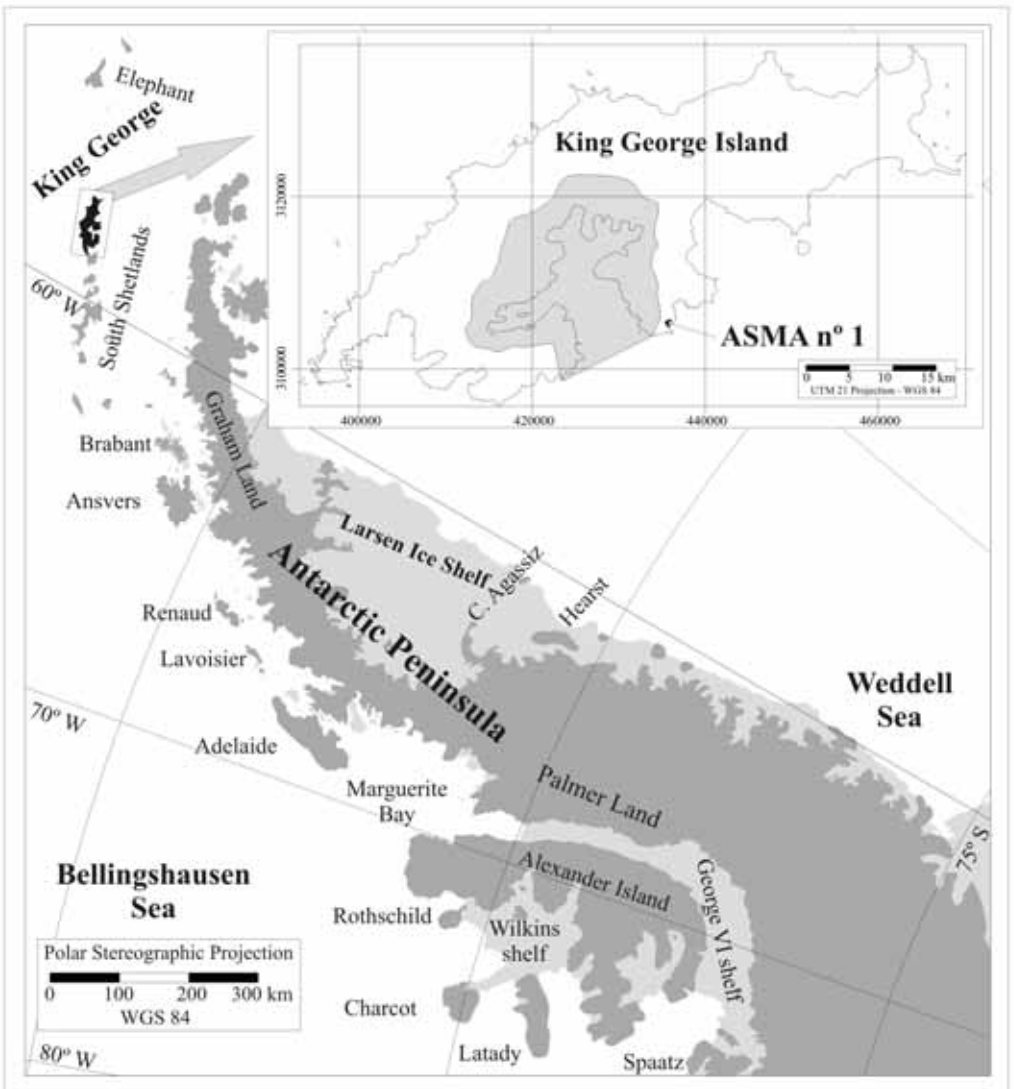


Figure 2: Admiralty Bay Antartic Specially Managed Area - ASMA Nº 1

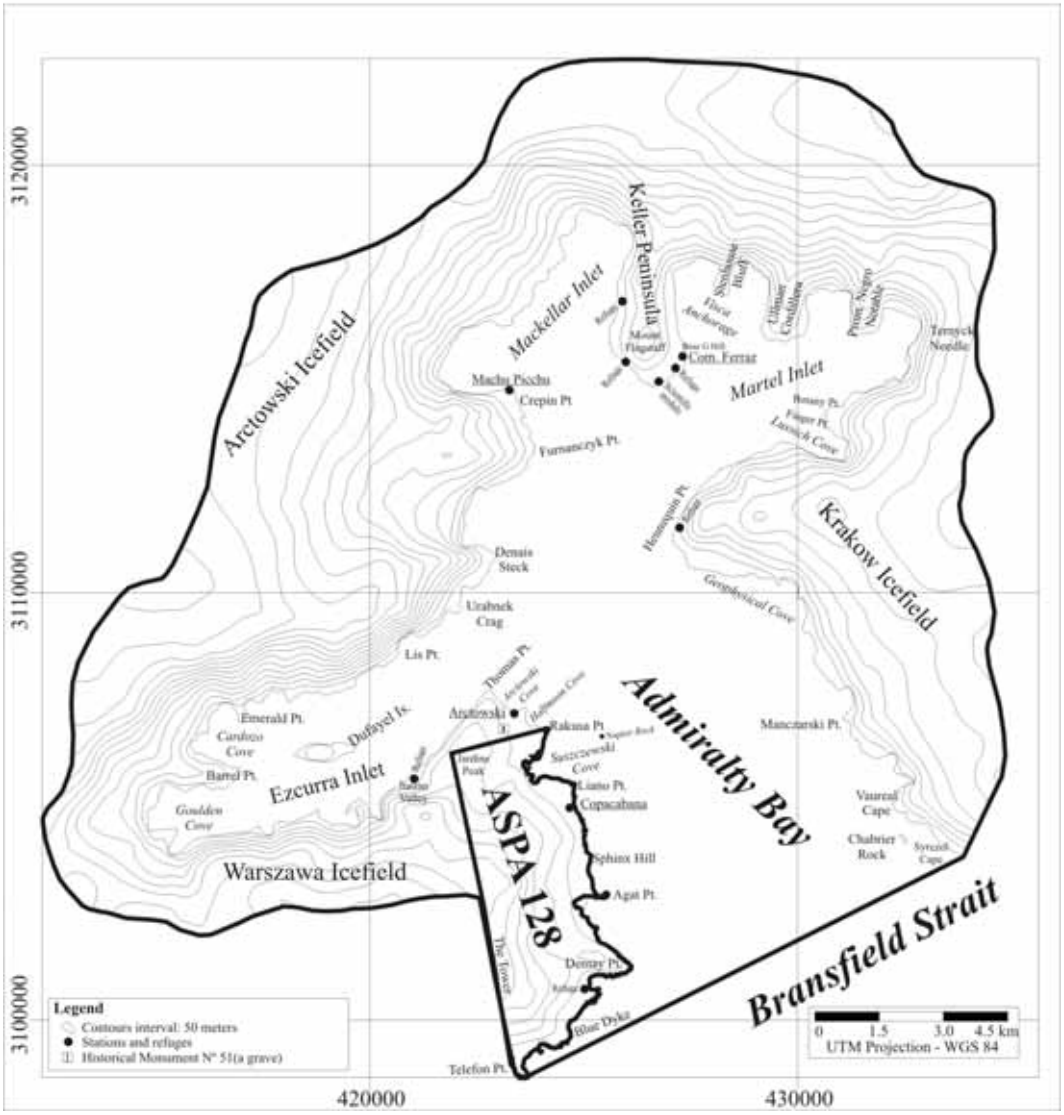


Figure 3: Location of minor and/or semi-permanent structures and anchorage sites

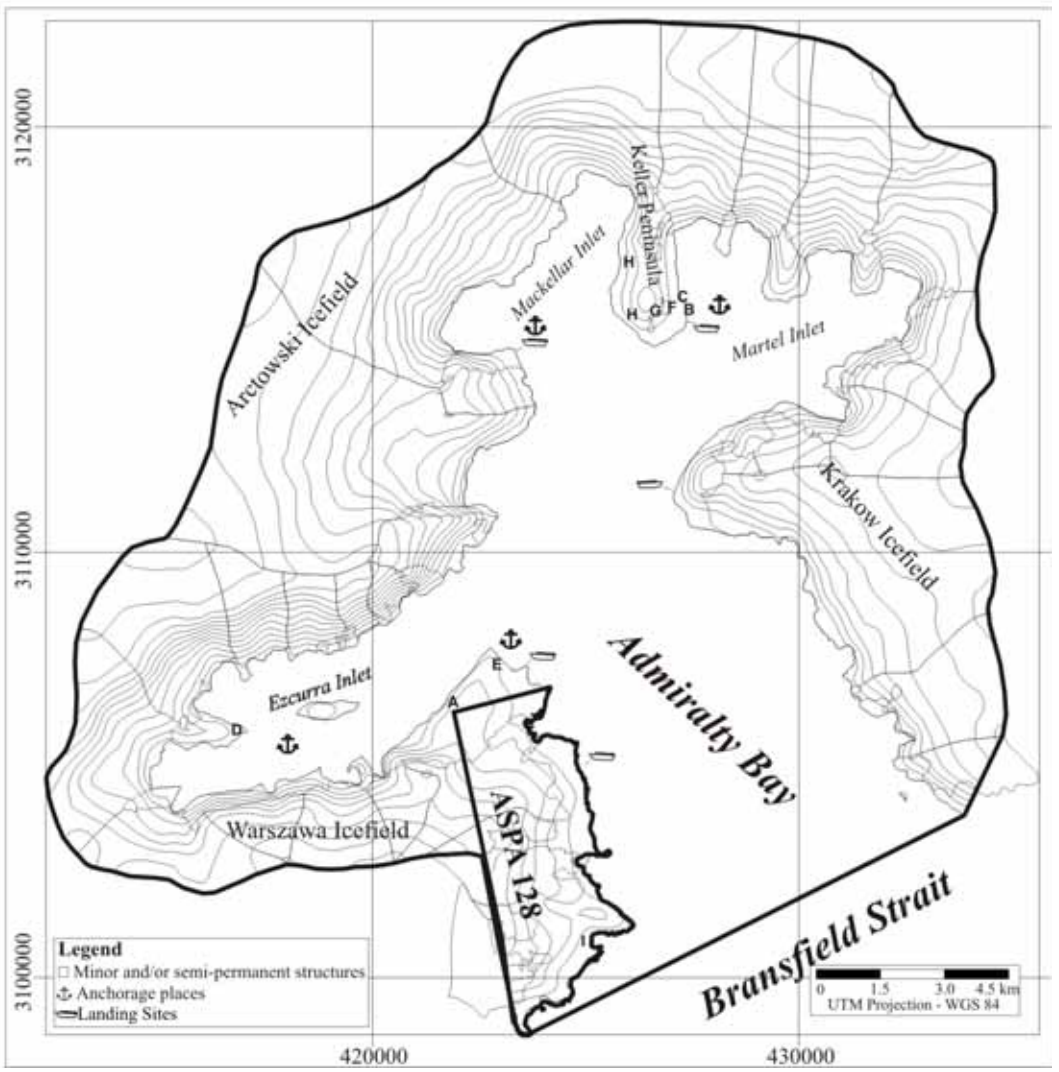


Figure 4: Location of Zones of Scientific and/or Ecological Interest

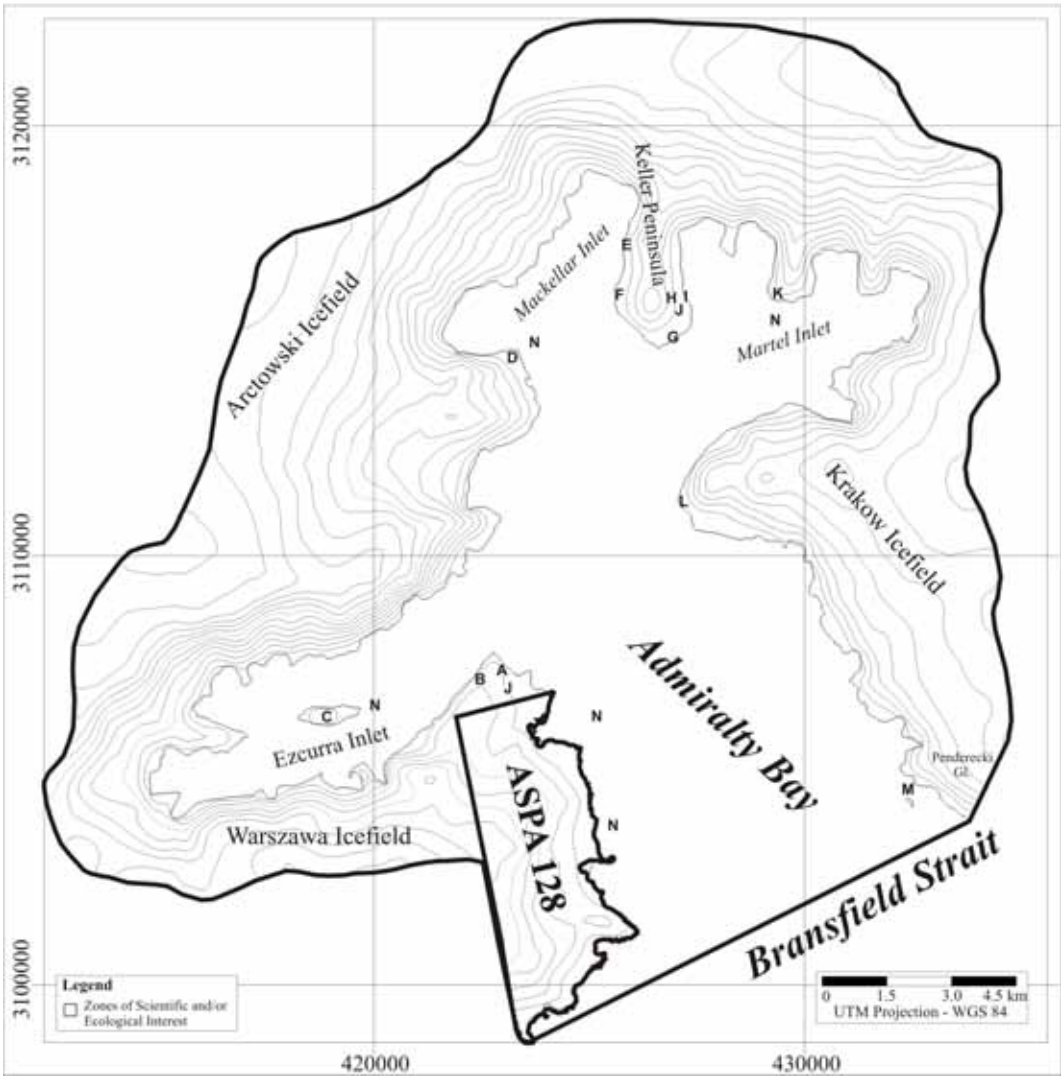


Figure 5A: Tour Routes - Comandante Ferraz Station

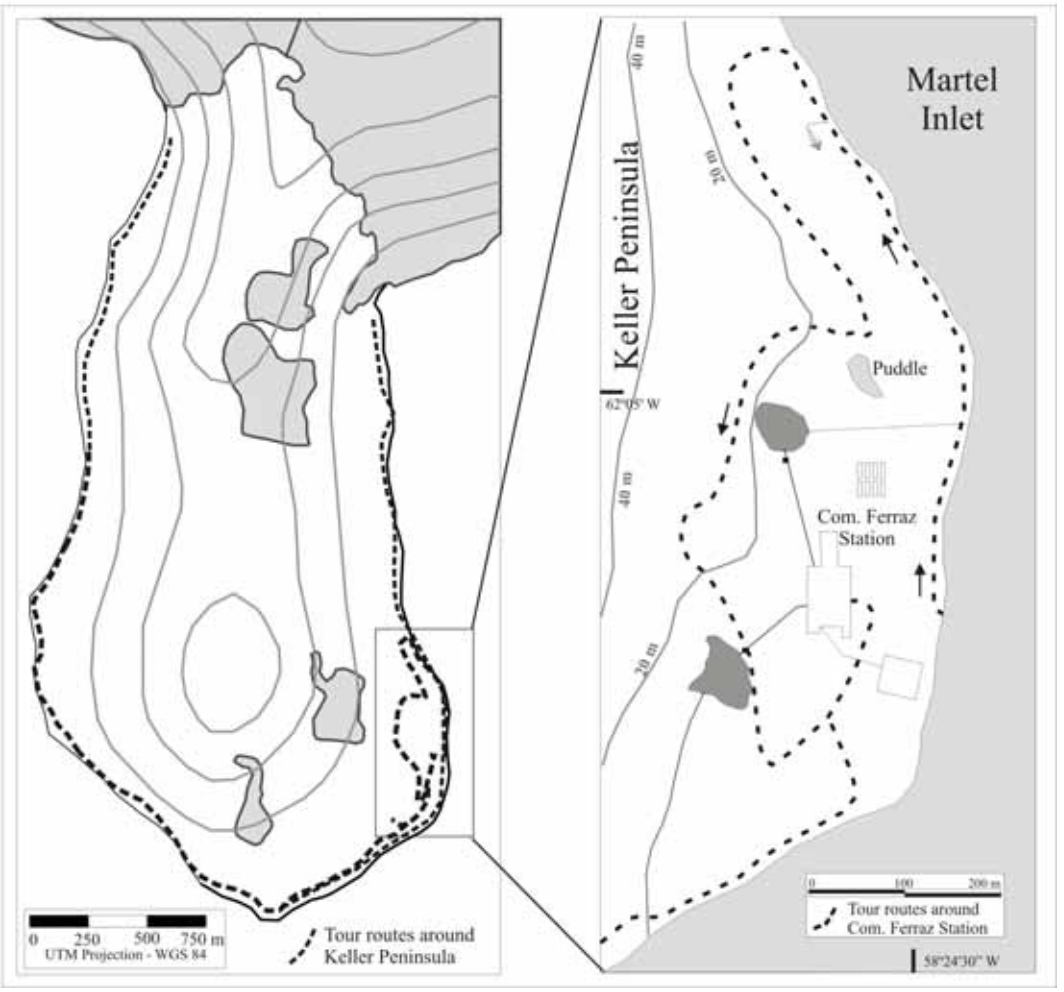


Figure 5B: Facilities Zone - Comandante Ferraz Station

1. Disembarkation point
2. Old whaling boat
3. Fuel tanks
4. Assembled whale skeleton
5. Site of former Base "G" (UK)
6. "Spanish tower"
7. Geomagnetism - VHF unit
8. North lake and water pump
9. Crosses and graves
10. South lake and water pump
11. Ruins of old British radiosonde
12. Meteorological Unit
13. Old buildings
14. Helicopter pad
15. Chemistry lad
16. Main station complex
17. Refuge 1

Figure 5C: Tour Routes - Henryk Arktowski Station

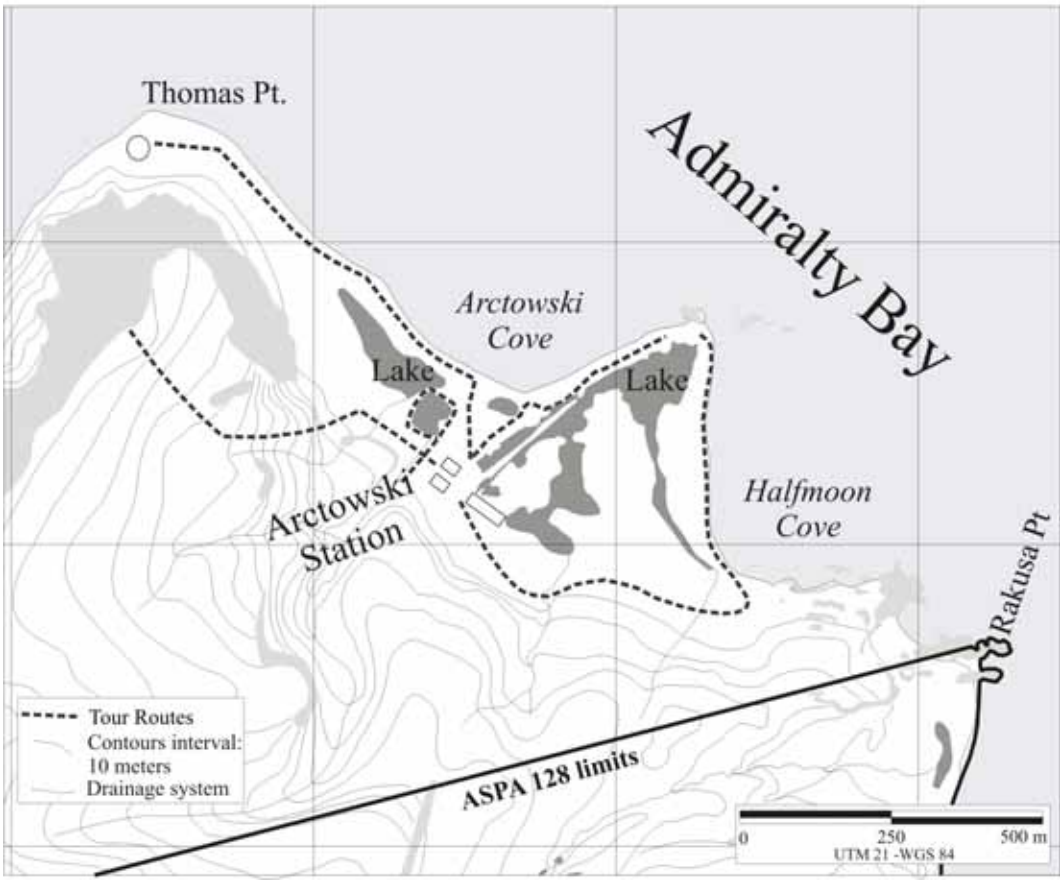
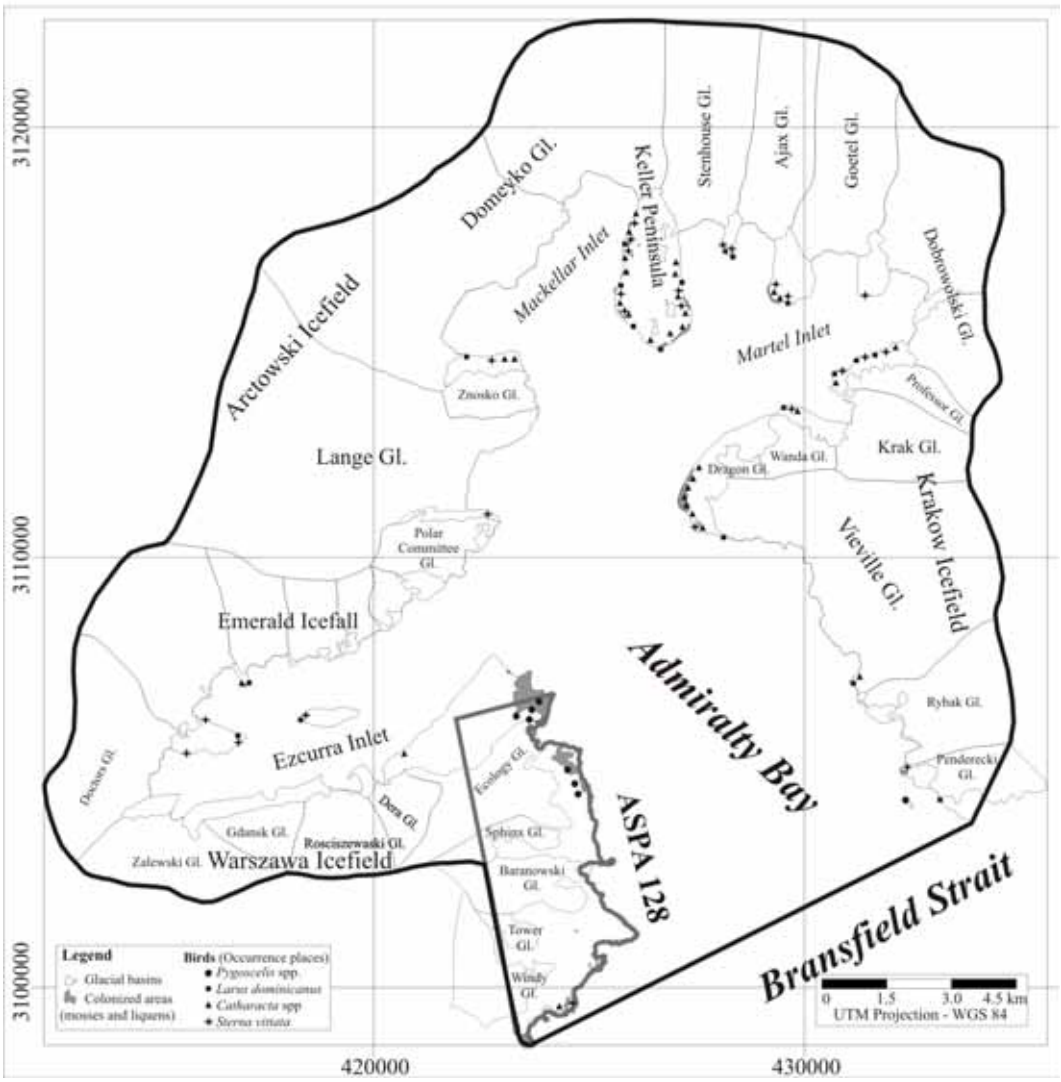


Figure 5D: Facilities Zone - Machu Picchu Station

1. Disembarkation point
2. Scientific Laboratory
3. Portable helicopter pad
4. Power House / Garage / Waste Management
5. Living quarters
6. Emergency refuge
7. Dining-room/ Kitchen
8. Flag
9. MST Radar

Figure 6: Flora (colonized areas) and Birds (occurrence sites)



Measure 3 (2006)

Antarctic Historic Sites and Monuments: Rocher du Débarquement

The Representatives,

Recalling the requirements of Article 8 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty to maintain a list of current Historic Sites and Monuments, and that such sites shall not be damaged, removed or destroyed;

Recalling Measure 3 (2003), which revised and updated the "List of Historic Sites and Monuments";

Desiring to add Rocher du Débarquement, Terre Adélie, to that list;

Recommend to their Governments the following Measure for approval in accordance with paragraph 2 of Article 8 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty:

That the following site be added to the "List of Historic Sites and Monuments" annexed to Measure 3 (2003):

No. 81: Rocher du Débarquement, Terre Adélie

Rocher du Débarquement (Landing Rock) is a small island where Admiral Dumont D'Urville and his crew landed on 21 January 1840 when he discovered Terre Adélie.

Location: 66° 36.30'S, 140° 03.85'E

Original proposing Party: France

Party undertaking management: France

Measure 4 (2006)

Specially Protected Species: Fur Seals

The Representatives,

Recalling Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty ("the Protocol"), providing for the designation of Specially Protected Species to be accorded special protection by the Parties;

Further recalling that the Committee for Environmental Protection ("CEP") adopted at CEP VIII guidelines for consideration of proposals for new and revised designations of Specially Protected Species, under which risk of extinction is to be assessed using criteria established by the IUCN;

Noting that SCAR has determined that the Antarctic Fur Seal (*Arctocephalus gazella*) and the Sub-antarctic Fur Seal (*Arctocephalus tropicalis*) are no longer at significant risk of extinction, and that as these are the only two species of the genus *Arctocephalus* in the Antarctic Treaty area, the genus *Arctocephalus* should be removed from the list of Specially Protected Species;

Further noting that the CEP has assessed the implications of removing these species from the list of Specially Protected Species, and has advised that they be removed;

Welcoming the recovery of the population and range of the Antarctic Fur Seal and the Sub-antarctic Fur Seal;

Believing that, in the light of the scientific advice from SCAR, the Antarctic Fur Seal and the Sub-antarctic Fur Seal should now be removed from the list of Specially Protected Species contained in Appendix A to Annex II to the Protocol;

Recognizing that the Antarctic Fur Seal and the Sub-antarctic Fur Seal will continue to receive comprehensive protection under the Protocol, and that their delisting will have no implications for the protection of those species of the genus *Arctocephalus* that occur only outside the Antarctic Treaty area;

Further noting that the Ross Seal *(Ommatophoca rossii)* remains a Specially Protected Species;

Bearing in mind the historical exploitation of fur seals in the region that made necessary the special protection of the Antarctic Fur Seal and the Sub-antarctic Fur Seal, and the deep public interest in the protection and conservation of fur seals in Antarctica;

Resolving to keep under review the conservation status of fur seals in the Antarctic Treaty area;

Urging those Consultative Parties which are members of the Commission for the Conservation of Antarctic Marine Living Resources to continue to provide data on the amount of incidental seal mortality, potential impacts of krill harvesting on seal populations, and the development and effectiveness of mitigation measures in the krill fishery;

Recommend to their governments the following Measure for approval in accordance with Article 9 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty:

That:

In Appendix A to Annex II to the Protocol on Environmental Protection to the Antarctic Treaty, the words "All species of the genus *Arctocephalus*, Fur Seals." be deleted.

ANNEX B

DECISIONS

Decision 1 (2006)

Approval of Secretariat's Financial Reports for 2004/5 and 2005/6 and Programme and Budget for 2006/7

The Representatives,

Recalling Measure 1 (2003) of ATCM XXVI on the establishment of the Secretariat of the Antarctic Treaty (the Secretariat);

Recalling also Decision 2 (2003) on the provisional application of Measure 1 (2003);

Bearing in mind the Financial Regulations for the Secretariat of the Antarctic Treaty adopted by Decision 4 (2003);

Noting especially the provisions of Regulation 6.3 of the Financial Regulations relating to the surplus;

Decide to:

1. Approve the Secretariat's Financial Report for 2004/5 (SP6) annexed to this Decision (Annex 1);

2. Take note with appreciation of the Secretariat's Report on its work in 2005/6 (SP 3 rev. 1) and approve the Secretariat's Financial Report for 2005/6 (SP3 Rev. 1 Attachment) annexed to this Decision (Annex 2);

3. Approve the Secretariat's Work Programme and Budget for 2006/7 (SP 4 rev. 3) annexed to this Decision (Annex 3);

4. Approve the expenditure of up to one quarter of the Forecast Budget for 2007/8, annexed to this Decision (Annex 3), in the 2007/8 financial year subject to the availability of sufficient funds;

5. Direct the Secretariat to establish a Staff Replacement Fund in accordance with the provisions of Regulation 6.2(d) of the Financial Regulations, to be used to defray the expenses to be paid according to Rule 9.6 and 10.6 of the Staff Regulations in case of a replacement of an executive staff member;

6. Direct the Secretariat to establish a Staff Termination Fund in accordance with the provisions of Regulation 6.2(d) of the Financial Regulations, to be used to defray the expenses

to be paid according to Rule 10.4 of the Staff Regulations in case of separation from service of an executive staff member;

7. Consider at the next Consultative Meeting the issue of the surplus in the General Fund, taking into account the provisions of Regulation 6.3 and the contributions made by the Consultative Parties in accordance with Paragraph 6 of Decision 2 (2003) on the Provisional Application of Measure 1 (2003).

ANTARCTIC TREATY SECRETARIAT

FINANCIAL REPORT 2004/5 (Revised)[i]

1. Statement of Income and Expenditure for All Funds for the Period Starting 1 September 2004 and Ending 31 March 2005[ii]

	BUDGET	ACTUAL	USD
INCOME[iii iv]			
Consultative Parties' Contributions - General Fund			$601.175,75
Consultative Parties' Contributions - Working Capital Fund			$120.235,15
Other Incomes			$10,22
TOTAL INCOME	**$700.000**		**$721.421,12**
EXPENDITURE			
Appropiation for Salaries	**$159.080**	**$70.875,99**	
Executive Staff Salaries			
Executive Secretary	$64.722	$46.230,00[v]	
Assistant Executive Secretary	$38.955	$13.069,40[vi]	$59.299,40
Administrative/Technical Staff Salaries			
Finance/Admin Manager	$11.594		
Information Officer 1	$11.594		
Information Officer 2	$11.197	$8.522,39[vii]	
Translator	$9.330		
Office Manager	$6.423		
Secretary / Admin. Assistant	$5.265	$3.054,20[viii]	$11.576,59
Appropiation for Goods and Services	**$161.600**	**$35.085,31**	
Communications			
Postage & Freights	$6.500	$476,50	
Internet	$6.300	$646,30	
Facsimile	$3.000	$0,00	
Telephone	$3.000	$4,60[ix]	$1.127,40
Travel			
Airfares & Travel Allowances	$29.000	$14.337,91	$14.337,91
Support Costs			
Auditor	$6.500	$0,00	
Computer Assistance	$7.000	$4.947,96	
Editing & Publication Expenses	$12.000	$0,00	
Insurance	$6.200	$742,19	

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Legal Advice	$15.000	$1.218,62	
Light and Power	$5.700	$0,00[x]	
Printing and Copying	$12.000	$1,16	
Relocation Expenses for Executive Staff	$20.000	$7.165,63	
Representation Expenses	$14.000	$88,83	
Stationery	$6.400	$1.836,83	
Translation	$5.000	$0,00	
Miscellaneous[xi]	$4.000	$3.618,78	$19.620,00
Appropiation for Equipment	**$175.000**	**$31.866,34**	
Equipment			
Computers (Leasing)	$30.000	$14.843,88	
Software Development	$50.000	$1.933,64	
Computer Software	$40.000	$5.100,30	
Establishment Costs	$30.000	$8.860,54	
Maintenance of Equipment	$3.000	$460,18	
Training	$10.000	$667,80	
Photocopying Equipment	$12.000	$0,00[xii]	$31.866,34
TOTAL EXPENDITURE	**$495.680**		**$137.827,64**
SURPLUS	**$204.320**		**$583.593,48**
TOTAL FUNDS AT 1 SEPTEMBER			**$0,00**
TOTAL FUNDS AT 31 MARCH			**$583.593,48**

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2. Expenditure 2004/5, Arranged by Outputs

	BUDGET	ACTUAL
A. Management		
Executive Secretary	$64.722	$46.230
Assistant Executive Officer	$38.955	$13.069
	$103.677	**$59.299**
B. General support		
Salaries		
Finance/Admin Manager (60%)	$6.956	
Secretary/Admin. Assistant (60%)	$3.160	$1.833
Translator (40%)	$3.730	
Office Manager (60%)	$3.854	
	$17.700	**$1.833**
Goods and Services	**$132.600**	**$20.747**
Equipment	**$125.000**	**$29.933**
	$275.300	**$52.513**
C. Tasks		
(a) Organisation of ATCM/CEP		
Information Officer 2 (20%)	$2.239	$3.409[xiii]
Office Manager (20%)	$1.285	
Software development	$20.000	$1.160
Airfares for preparatory meeting	$7.400	
Travel allowance for preparatory meeting	$2.400	
	$33.324	**$4.569**
(b) Support intersessional work of the ATCM and the CEP		
Finance/Admin Manager (20%)	$2.319	
Office Manager (20%)	$1.285	
Travel funds		$3.298
	$3.603	**$3.298**
(c) Facilitate exchange of information required under the Antarctic Treaty and the Protocol		
Information Officer 1 (25%)	$2.899	
Software development	$10.000	
	$12.899	**$0**
(d) Coordination and contact with other elements of the Antarctic Treaty system		
Airfares and travel allowances	**$19.200**	**$11.040**

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(e) Development and maintenance of databases		
Information Officer 1 (25%)	$2.899	
Software development	$10.000	$387
Information Officer 2 (20%)		$1.704
	$12.899	**$2.091**
(f) Circulation amongst the Parties relevant information and disseminate information on activities in Antarctica		
Information Officer 2 (20%)	**$2.239**	**$1.704**
(g) Collection, maintenance and publication of ATCM/CEP records		
Information Officer 1 (25%)	$2.899	
Information Officer 2 (20%)	$2.239	$1.704
Translator (30%)	$2.799	
Software development	$10.000	$387
	$17.937	**$2.091**
(h) Facilitate the availability of information about the Antarctic Treaty system		
Information Officer 1 (25%)	$2.899	
Secretary/Admin. Assistant (20%)	$1.053	$611
	$3.952	**$611**
(i) Preparation of reports on the Secretariat's activities		
Finance/Admin Manager (20%)	$2.319	
Secretary/Admin. Assistant (20%)	$1.053	$611
	$3.372	**$611**
(j) Assisting the review of past Recommendations and Measures	**$2.239**	**$0**
(k) Maintenance and updating of the Antarctic Treaty System Handbook		
Information Officer 2 (20%)	$2.239	
Translator (30%)	$2.800	
	$5.039	
Total tasks	**$116.703**	**$26.016**
Total	**$495.680**	**$137.828**

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3. Statement of Financial Position on 31 March 2005

ASSETS[xiv]

CURRENT ASSETS	
	USD
Cash and Cash Equivalents	$10.764,57
Credits[xv]	$577.015,78
TOTAL CURRENT ASSETS	$587.780,35
NOT CURRENT ASSETS	
Plant and Equipment[xvi]	$143,52
TOTAL NOT CURRENT ASSETS	$143,52
TOTAL ASSETS	**$587.923,87**

LIABILITIES	
CURRENT LIABILITIES	USD
Payables	$4.330,39
TOTAL CURRENT LIABILITIES	$4.330,39
TOTAL LIABILITIES	**$4.330,39**
NET ASSETS	**$583.593,48**

	REPRESENTED BY ACCUMULATED FUNDS
General Fund	$601.175,75
Working Capital Fund	$120.235,15
Other Incomes	$10,22
TOTAL ACCUMULATED FUNDS	**$721.421,12**

The Reports should be read in conjunction with the Annex and Notes i to xvi attached.

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Annex

SUMMARY OF SIGNIFICANT ACCOUNTING PRINCIPLES AND POLICIES

(a) Historical Cost

The accounts are drawn up in accordance with the International Accounting Standards on historical costs, except where otherwise indicated, and therefore do not reflect changes in purchasing power of money or current valuation of non-monetary assets.

(b) Accrual Basis

The Secretariat's Statement of Income and Expenditure and the Statement of Financial Position are prepared on an accrued basis in accordance with the International Accounting Standards.

(c) Currency

All transactions in the financial statements are recorded in United States Dollar currency.

(d) Plant & Equipment

All items are shown at cost less depreciation and amounts written off, if any. Depreciation of these assets is principally calculated annually on a straight-line basis at rates appropriate to their estimated useful life. For this first uncompleted period the depreciation of Plant & Equipment was not calculated.

(e) Income sources

The Secretariat's income comes from Members' contributions. Income from annual contributions and special contributions by the Parties are recorded and acknowledged upon receipt.

STATEMENT

The Antarctic Treaty Secretariat is responsible for the integrity of its financial statements. The statements have been prepared in conformity with international accounting standards. The financial information included in this report is consistent throughout.

The Antarctic Treaty Secretariat maintains a system of internal accounting controls designed to provide reasonable assurance at a reasonable cost that transactions are executed in accordance with the appropriate authorization and recorded and summarized properly.

The undersigned hereby state that in their opinion the accompanying statements comprising:

- Statement of Income and Expenditure;
- Statement of Financial Position;
- Annex and Notes Forming Part of the Financial Statements;

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are drawn up so as to present fairly the financial operations of the Antarctic Treaty Secretariat for the period starting 1 September 2004 and ending 31 March 2005 and the financial position of the Antarctic Treaty Secretariat at 31 March 2005.

Buenos Aires, 4 May 2006

Johannes Huber, Executive Secretary

Juan Carlos Brizuela, Accountant

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[i] The text of the Financial Report, submitted to the 28th ATCM as WP 44, has undergone minor revision to take account of comments made by the Comptroller's Office of the Argentine Government (SIGEN), the external auditor of the Secretariat.

[ii] The financial year of the Secretariat runs from April 1 to March 31.

[iii] The Antarctic Treaty Secretariat is at present financed by assessed voluntary contributions from the Consultative Parties, which should be made on the basis of the contribution scale established by the ATCM (Decision 2 (2003), Article 6.

[iv] Contributions are made in United States currency (Regulation 5.2 of the Financial Regulations). This item includes interest gains and losses during the time these contributions were held by the CCAMLR Secretariat on behalf of the Antarctic Treaty Secretariat.

[v] As of 31 March 2005, 2 months' salary was due.

[vi] The Assistant Executive Secretary started work on 1 January 2005. On 31 March 2005, 1 month salary was due.

[vii] The Information Officer started work on October 18, 2004. During the reporting period his services were provided through Benefits SA (Manpower Inc). The amount listed is the total amount paid to Benefits SA.

[viii] The Secretary/Administrative Assistant started work on November 22, 2004. Her services were also provided through Benefits SA.

[ix] During the reporting period the Secretariat used the existing telephone network in the Secretariat. The charges were paid by the Argentine Ministry of Foreign Affairs as a contribution in kind to the Secretariat.

[x] Electricity, gas and water charges were also paid by the Argentine Ministry of Foreign Affairs during this period.

[xi] Miscellaneous:

Accounting Advice		$308,70
Bank Fees, Exchange Rate Charges and Taxes		$2.735,41
Miscellaneous Expenses		$574,67
	Subtotal	$3.618,78

[xii] In order to save money multi-function equipment (print/fax/copy) is being used instead of stand-alone copying equipment.

[xiii] Actually 40%

[xiv] During the financial period there were no losses of assets or deficiencies to be considered for write-off action.

[xv] Credits:

In CCAMLR Bank Account		$571.426,25
Value Added Tax to be Reimbursed		$4.502,22
Prepayment to Suppliers		$1.087,31
	Subtotal	$577.015,78

[xvi] The Antarctic Treaty Secretariat occupies part of a building leased by the Government of the Argentine Republic and made available free of charge to the Secretariat.

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SP 6

INDEPENDENT AUDITOR'S REPORT

XXIX Antarctic Treaty Consultative Meeting 2006, Edimburgh, United Kingdom

Report on the Financial Statements

We have audited the accompanying financial statements of the Antarctic Treaty Secretariat, which comprise the Statement of Income and Expenditure and the Statement of Financial Position and other explanatory notes for the period started at September 1st and ended at March 31st, 2005.

Management's Responsibility for the Financial Statements

The Antarctic Treaty Secretariat is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and specific regulations of the Antarctic Treaty Consultative Meetings. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing and the Annex to Decision 5 of the XXVIII Antarctic Treaty Consultative Meeting which describes the tasks to be carried out by the external audit. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Antarctic Treaty Secretariat as of March 31st, 2005, and of its financial performance and its cash flows for the period then ended in accordance with International Financial Reporting Standards.

Dr. Edgardo De Rose
Contador Público
T°182 F° 195 CPCECABA

Buenos Aires, 17th may, 2006

Sindicatura General De La Nacion
Av. Corrientes 381 Buenos Aires
República Argentina

Antarctic Treaty Secretariat

Financial Report 2005/6

1. Statement of Income and Expenditure for All Funds for the Period Starting 1 April 2005 and Ending 31 March 2006

Budget lines Programme 2005/6		Consolidated budget lines	Budget	Actual
INCOME				
Contributions 2005/6	$724.585		$724.585	$816.400[1]
Late contributions 2004/5				$79.154[2]
Other income				$19.238[2]
TOTAL				**$914.792**
EXPENDITURE				
1. Appropriation for Salaries				
Executive staff				
ES	$115.522			
AEO	$80.682	Executive staff salaries	$196.204	$220.799[3]
Administrative/Technical staff				
IT Officer	$16.385			
Information Officer	$24.014			
Editor	$13.200			
Sec/Admin. Assistant	$11.292	General staff salaries	$64.891	$56.289[4]
Total Salaries			**$261.095**	**$277.087**
2. Appropriation for Goods and Services				
Communications				
Postage and freight	$5.000			
Internet	$13.200			
Telecommunication	$9.000	Communications	$27.200	$11.570
Travel				
Airfare and travel allowances	$80.000	Travel costs	$80.000	$71.557
Support costs				
Auditor	$6.900			
Accounting services	$7.560	Accounting and auditing	$14.460	$11.935
Insurance	$1.340			
Computer maintenance and assistance	$7.620			
Stationery	$11.600			
Maintenance & cleaning	$11.700			
Electricity	$1.000	Office expenses & maintenance	$33.260	$28.421
Printing and copying	$12.700	Printing and copying	$12.700	$14.114[5]
Legal advice	$10.000	Legal advice	$10.000	$4.352

[1] Contributions received for 2004/5 represent 77% of the assessment for 2005/6, which was $1.062.390, see "Scale of Contributions 2005", in the Annex to Decision 2 (2004).

[2] See details in Section 3

[3] The amount for Executive salaries includes salaries that were owing at the end of the previous year, see Financial Report 2004/5 (SP6), notes v and vi

[4] The amount for General Staff salaries is lower than foreseen because the additional posts of IT Officer and Editor were filled in November/December instead of in September as planned.

[5] Printing costs were higher than expected due to the size of the Final Report.

Atcm29_att053_e.pdf Attachment: Financial Report

Budget lines Programme 2005/6		Consolidated budget lines		Budget	Actual
Library Assistance	$1.890	Documentation services		$1.890	$7.067[6]
Data entry	$15.540	Data entry, proofreading		$15.540	$10.799
Training	$10.600	Training		$10.600	$2.597
Miscellaneous	$5.800				
Representation expenses	$22.200	Miscellaneous		$28.000	$22.269
ATCM Translation and Interpretation					
ATCM Pre-meeting translation	$65.000				
Translation/Final Report	$65.000	Translation and editing		$130.000	$107.378
Total Goods and Services				**$363.650**	**$292.061**
3. Appropriation for Equipment					
Computers	$22.860				
Computer software	$6.480	IT equipment, software		$29.340	$34.894[7]
Web and Software development	$20.000	Web and Software development		$20.000	$12.887
Documentation material	$20.000				
Subscriptions	$2.300	Documentation material		$22.300	$1.726
Furniture, misc. equipment	$20.000				
Copying & printing equipment	$8.200	Furniture, equipment		$28.200	$2.581[8]
Total Equipment				**$99.840**	**$52.088**
TOTAL EXPENDITURE				**$724.585**	**$621.236**
Surplus 2005/06			$293.556		$293.556[9]
To Working Capital Fund	-$529				
Surplus 2005/06 minus WCF			**$293.027**		
Income-Expenditure 2004-6					
Income-Expenditure 2004/5			$583.593		
To Future Meeting Fund	-$400.000				
To Working Capital Fund	-$120.235				
Surplus 2004/5			$63.358		
Surplus 2005/6			$293.027		
Contributions 2006/7			$220.468		
Accumulated surplus 31 March 2006			**$576.853**		
Total Funds at 1 April 2005					**$583.593**
Total Funds at 31 March 2006					**$1.097.617**[10]

[6] Setting up the archive of ATCM documents turned out to be a bigger task than expected. The project was also speeded up to provide as many documents as possible for the discussion on the status of recommendations at the 29th ATCM.

[7] The employment of temporary staff and trainees for proofreading the Final Report and developing the Recommendations database necessitated extra expenses for IT equipment.

[8] This concerns expenses for the establishment of the office infrastructure such as bookcases, air conditioning equipment etc. Together with the disbursements resulting in fixed assets detailed in note 14 to the balance sheet, they amount to $ 31.423. Establishment of the office infrastructure took longer than expected; it should be noted that during the previous financial year only about ¼ of the $30.000 budgeted for establishment costs was spent. See Financial Report 2004/5 (SP6)

[9] In the previous fiscal year, VAT reimbursements due to the Secretariat because of its tax exempt status were counted as credits. In this fiscal year's statement this is not done: for this reason the amount entered understates the surplus 2005/6 by ca. $ 15.000

[10]

Surplus 2004/05	$ 583.593
Surplus 2005/06	$ 293.556
Contributions 2006/2007	$ 220.468
Funds at 31 March 2006	$ 1.097.617

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2. Statement of Financial Position on 31 March 2006

ASSETS[11]	
Current assets	
Cash and cash equivalents	$671.438
Credits[12]	$691
Total	**$672.129**
Non-current assets[13]	
Fixed term deposits	$400.000
Plant and equipment[14]	$28.986
Total	**$428.986**
Total Assets	**$1.101.114**
LIABILITIES	
Current liabilities	
Payables	$3.497
Total	**$3.497**
Total Liabilities	**$3.497**
NET ASSETS	**$1.097.617**
	REPRESENTED BY ACCUMULATED FUNDS
General Fund	$176.853
Future Meeting Fund	$400.000
Working Capital Fund	$120.764
Total Accumulated Funds	$697.617

[11] During the financial period there were no losses of assets or deficiencies to be considered for write-off action.

[12] Prepayments to suppliers

[13] The Antarctic Treaty Secretariat occupies part of a building leased by the Government of the Argentine Republic and made available free of charge to the Secretariat.

[14] The sum entered here consists of the following:

Plant and equipment 31 March 2005	$144
Disbursements for equipment 2005/6	$28.842
Total plant and equipment 31-3-2006	$28.986

3. Contributions and other income received during 2005/6 and Parties' share in the surplus 2005/6

Contributions 2004/5		**Other Income 2005/6**	
Belgium	$31.427	Bank Interest Earned	$9.805
Peru	$7.980	Exchange Rate Gains	$56
Poland	$30.427	VAT Reimbursement	$8.727
United States[15]	$9.320	Lease Reimbursement	$650
	$79.154		$19.238
Contributions 2005[16]		**Share of each contributing Party in surplus 2005/6[17]**	
Argentina	$48.122	Argentina	$16.712
Australia	$48.122	Australia	$16.712
Bulgaria	$27.069	Bulgaria	$9.401
Chile	$36.786	Chile	$12.775
China	$36.786	China	$12.775
Ecuador	$27.069	Ecuador	$9.401
Finland	$31.927	Finland	$11.088
France	$25.573	France	$8.881
Germany	$20.988	Germany	$7.289
India	$36.786	India	$12.775
Italy	$41.644	Italy	$14.463
Japan	$48.123	Japan	$16.713
Korea	$12.770	Korea	$4.435
Netherlands	$36.786	Netherlands	$12.775
New Zealand	$48.122	New Zealand	$16.712
Norway	$48.077	Norway	$16.697
Peru	$7.980	Peru	$2.771
Poland	$31.927	Poland	$11.088
Russia	$31.927	Russia	$11.088
South Africa	$36.786	South Africa	$12.775
Sweden	$36.786	Sweden	$12.775
United Kingdom	$48.122	United Kingdom	$16.712
United States	$48.122	United States	$16.712
	$816.400		$283.527
Contributions 2006			
Australia	$33.486		
Finland	$22.217		
Germany	$21.000		
Italy	$28.978		
Netherlands	$25.598		
New Zealand	$33.486		
Russia	$22.217		
United States	$33.486		
	$220.468		

[15] The United States made a contribution of $30.000 to a Special Fund in lieu of its 2004/5 contribution ("Financial Matters" in Work Programme 2005/6, Annex to Decision 7 (2005). The money received, $9.320, was spent during this financial year. The remaining part of the grant will be received and spent during the 2006/7 financial year.

[16] It should be noted that in addition to the contributions recorded here a contribution of $31.927 was received from Belgium on 3 May 2006.

[17]

Surplus 2005/06	$ 293.556
Payables 2005/2006	-$ 3.497
Undischarged commitments	-$ 6.532
	$ 283.527

Annex

SUMMARY OF SIGNIFICANT ACCOUNTING PRINCIPLES AND POLICIES

(a) Historical Cost

The accounts are drawn up in accordance with the International Accounting Standards on historical costs, except where otherwise indicated, and therefore do not reflect changes in purchasing power of money or current valuation of non-monetary assets.

(b) Accrual Basis

The Secretariat's Statement of Income and Expenditure and the Statement of Financial Position are prepared on an accrued basis in accordance with the International Accounting Standards.

(c) Currency

All transactions in the financial statements are recorded in United States Dollar currency.

(d) Income sources

The Secretariat's main income comes from Members' contributions. Income from annual contributions and special contributions by the Parties are recorded and acknowledged upon receipt.

STATEMENT

The Antarctic Treaty Secretariat is responsible for the integrity of its financial statements. The statements have been prepared in conformity with international accounting standards. The financial information included in this report is consistent throughout.

The Antarctic Treaty Secretariat maintains a system of internal accounting controls designed to provide reasonable assurance at a reasonable cost that transactions are executed in accordance with the appropriate authorization and recorded and summarized properly.

The undersigned hereby state that in their opinion the accompanying statements comprising:

- Statement of Income and Expenditure;
- Statement of Financial Position;
- Annex and Notes Forming Part of the Financial Statements;

are drawn up so as to present fairly the financial operations of the Antarctic Treaty Secretariat for the period starting 1 April 2005 and ending 31 March 2006 and the financial position of the Antarctic Treaty Secretariat at 31 March 2006.

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Buenos Aires, 1 June 2006

Johannes Huber
Executive Secretary

Juan Carlos Brizuela
Certified Public Accountant

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INDEPENDENT AUDITOR'S REPORT

XXIX Antarctic Treaty Consultative Meeting 2006, Edimburgh, United Kingdom

Report on the Financial Statements

We have audited the accompanying financial statements of the Antarctic Treaty Secretariat, which comprise the Statement of Income and Expenditure and the Statement of Financial Position and other explanatory notes for the period started at April 1st and ended at March 31st, 2006.

Management's Responsibility for the Financial Statements

The Antarctic Treaty Secretariat is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and specific regulations of the Antarctic Treaty Consultative Meetings. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing and the Annex to Decision 5 of the XXVIII Antarctic Treaty Consultative Meeting which describes the tasks to be carried out by the external audit. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances.

SIGEN

An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.
We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Antarctic Treaty Secretariat as of March 31st, 2006, and of its financial performance for the period then ended in accordance with International Financial Reporting Standards.

Dr. Edgardo De Rose
Contador Público
Tº182 Fº 195 CPCECABA

Buenos Aires, 2nd june, 2006

Sindicatura General De La Nación
Av. Corrientes 381 Buenos Aires
República Argentina

Work Programme 2006/7

Introduction

This Work Programme outlines the activities planned for the Secretariat in the financial year 2006/7 (1 April 2006 to 31 March 2007) and in the first quarter of the financial year 2007/8. The main areas of activity of the Secretariat are treated in the first four chapters, which are followed by a section on management. The financial aspects are treated in the appendices.

1. ATCM/CEP support
2. Information Exchange
3. Documentation
4. Public Information
5. Management

Appendix 1: Budget 2006/7, Forecast budget 2007/8 and allocation of resources

Appendix 2: Contribution scale 2007

Appendix 3: Salary scale 2006/7

Appendix 4: Forecast Programme 2007/8

The Programme and the accompanying budget figures for 2006/7 are based on Forecast Budget for 2006/7 (Decision 7 (2005), Appendix 2) and the experience of the past year.

Apart from the regular activities, such as preparation of the 29th and 30th ATCM, publication of Final Reports and the various specific tasks assigned to the Secretariat under Measure 1 (2003), the priority tasks for the year 2006/7 are completion of the database on recommendations in the four Treaty languages, the development of the Electronic Information Exchange System, and further development and expansion of the Secretariat website, including the incorporation of the CEP website.

1. ATCM/CEP support

(a) *Provide, with assistance from the host government, secretariat support for meetings held under the Antarctic Treaty and the Protocol and other meetings in conjunction with the ATCM.*

(b) Support intersessional work of the ATCM and the CEP by facilitating the exchange of information, organizing meeting facilities and providing other secretariat support as directed by the ATCM;

(d) Under guidance from the ATCM, provide the necessary coordination and contact with other elements of the Antarctic Treaty system and other relevant international bodies and organizations as appropriate;

(i) Prepare reports on its activities and present them to the ATCM;

(j) Assist the ATCM in reviewing the status of past Recommendations and Measures adopted under Article IX of the Antarctic Treaty;

ATCM XXIX and XXX

The Secretariat will support the 29th ATCM by gathering and collating the documents for the meeting and publishing them on the restricted area of the ATS website. The improved document handling software will be used at the meeting not only by the secretariat and the translation and printing sections to improve the flow of documents, but versions of the software will be available to delegates to obtain up to the minute information on the state of preparation and availability of working and information papers. The software will also enable the Secretariat to prepare daily agendas in which the latest data on the progress of the working groups will be reflected. A program will be developed to allow direct editing by delegations of the delegation lists and contact data, to make these data more accurate and up to date. The Secretariat will produce a manual for delegates with practical information on the organisation of the ATCM.

As in past years, the Secretariat has granted the contract for interpretation and translation of the 29th ATCM to the team of Mr. Bernard Ponette. The British Government as host of the 29th ATCM will reimburse the Secretariat for the costs of translation and interpretation during the meeting, and the pre-meeting translation and editing and publication of the Final Report are included in the expenditures tables appended to this report.

Taking advantage of the experience gained with the publication of the Final Report of the 28th ATCM, the Secretariat will publish and distribute the Final Report of the 29th ATCM in the Treaty languages before the end of 2006.

The Secretariat will maintain close contact with the Indian Government, expected to be Host Government of the 30th ATCM, and will provide support in the organization of any intersessional meetings planned by the ATCM.

Review of ATCM Recommendations

Depending on the decisions taken at the 29th ATCM, the Secretariat will extend the analysis of the status of recommendations on protected areas, made for the 29th ATCM, to the rest of the recommendations to prepare decisions on spent and superseded recommendations.

Coordination and contact

The Executive Secretary, the Assistant Executive Officer, the Information Officer, the IT Officer and the Editor will travel to Edinburgh to support the 29th ATCM and 9th CEP in cooperation with the host office secretariat. In addition, attendance at the following meetings by the Executive Secretary or the Assistant Executive Officer is planned.

SCAR-COMNAP	Hobart	July 2006
IPY Joint Committee	Svalbard	Sept 2006
CCAMLR	Hobart	Nov 2006
COMNAP	Washington	June 2007

The Executive Secretary will also travel to New Delhi to consult with the host government secretariat on the organisation of ATCM XXX. Where possible, travel will be combined to save costs.

For ATCM XXX, the abovementioned staff will travel to New Delhi to assist the meeting of the ATCM and CEP X in cooperation with the host government secretariat. The Consultative Parties will be consulted pursuant to Rule 46 on proposals to attend any other meeting to which the Executive Secretary will be invited.

Development of the ATS Website

In the next year, the Secretariat website will be further developed in the following areas:

Wherever possible, French, Russian and Spanish versions of the web pages will be developed.

The CEP website, currently operated by the Australian Antarctic Division, will be integrated into the ATS website. The facilities for contact groups, presently functional in the CEP website, will be made available to ATCM contact groups.

The sections of the website with contact data on the Parties, which currently consist of static lists maintained by the Secretariat, will be changed into dynamic sections. Parties will be able to edit their own contact information.

2. Information Exchange

(c) Facilitate and coordinate communications and exchange of information amongst Parties on all exchanges required under the Antarctic Treaty and the Protocol;

Electronic Information Exchange System

The Secretariat will produce on a trial basis the data management system and the web interfaces for the Electronic Information Exchange System (EIES), which will enable Parties to upload the data for the exchange of information required by the Treaty, the Environment Protocol and measures of the ATCM to the Secretariat website, from where they will be available to all Parties and the general public.

In comparison with the methods used up till now of exchanging information (direct exchange between the Parties in hardcopy or electronic formats or publishing information on the Parties' national websites), the Electronic Information Exchange System will have the following new features:

- Information with a permanent character, such as names and features of stations, contingency plans, etc., will be stored onsite. This means that, when submitting pre-season information or annual reports, Parties do not have to supply this information anew, saving much time and effort.
- Further simplification is possible if desired; Parties which have developed their own digital formats for collecting and uploading the information exchange data can contact the Secretariat to explore the possibility of exporting their data directly into the Secretariat's system.
- Integration with other existing systems, especially those used by the Council of Managers of National Antarctic Programs (COMNAP) is also actively pursued.
- As an official part of the Secretariat's program, the Electronic Information Exchange System will be developed using the four official Treaty languages.

A part of the system which has already been developed, namely the database of IEEs and CEEs, will be integrated into the EIES.

Considering the complexity of the data model and the wide variety of data being exchanged, development of the EIES will occupy a large portion of the software and website development activity of the Secretariat during this year. As parts of the system are developed, trial versions of the online forms will be made available to Parties to provide feedback on their completeness, accuracy and user-friendliness.

3. Records and documents

(g) Record, maintain and publish, as appropriate, the records of the ATCM and CEP and of other meetings convened under the Antarctic Treaty and the Protocol;

(e) Establish, maintain, develop and, as appropriate publish, databases relevant to the operation of the Antarctic Treaty and the Protocol;

(k) Under the guidance of the ATCM, take responsibility for maintaining and updating an Antarctic Treaty system "Handbook";

Documents of the ATCM

The Secretariat will continue its efforts to collect complete sets of the Final Reports and other records of the ATCM and other meetings of the Antarctic Treaty System in the four Treaty languages. The database of the Recommendations, Measures, Decisions and Resolutions of the ATCM, which at present is complete in English, will be expanded to include also all records in the French, Russian and Spanish languages. Assistance from the Parties in searching their archives will be essential in achieving this goal.

The scanning and uploading of the Final Reports of the ATCM in the four languages will also continue, with the aim of providing access to all Final Reports in their entirety. A beginning will be made with making available the Working Papers and Information Papers of the ATCM.

The archive and documentation of the Secretariat will be made available to interested scholars, libraries etc. through the Secretariat's documentation centre.

Antarctic Treaty Handbook

The 10th edition of the Antarctic Treaty Handbook will be published during the next year, beginning with Volume 1 (Basic Texts). Volumes on Environmental Protection, Operational and Scientific Matters and Tourism and non-governmental activities will follow.

4. Public Information

(f) Circulate amongst the Parties any other relevant information and disseminate information on activities in Antarctica;

(h) Facilitate the availability of information about the Antarctic Treaty system;

The Secretariat and its website will continue to function as a clearinghouse for information on the Parties' activities and relevant developments in Antarctica. Incorporation of the CEP Website will greatly increase the size and attraction of the site. The International Polar Year (IPY, 2007-9) will undoubtedly increase the interest in Antarctic affairs. The Secretariat will develop and maintain a special section in its website to provide information, links, news and other material related to the event.

The Secretariat has begun and is planning to continue developing graphic material for free or cost-basis distribution among educational and cultural organisations and the general public. Downloadable material for educational purposes, such as introductions to the Treaty and the Protocol and pamphlets on various topics will be developed. Parties are also welcome to use the Secretariat website as a channel for the diffusion of educational material produced by them. The Internet offers many new tools for the diffusion of images, audio, pictures and text, such as electronic books, news in RSS format, podcasts, interactive maps, and so on. The Secretariat will explore these new technologies

to try to provide information and increase the visibility of the Antarctic Treaty System as widely and as efficiently as possible.

The Secretariat will also continue expanding the visibility of the Antarctic Treaty System through its website, the ATS newsletter, pamphlets, and other activities, including publication and distribution of guidelines adopted by the ATCM and other ATCM documents oriented towards the public.

5. Management

Personnel

In order to carry out the programme for 2005/6, the composition of the present staff should be adequate. The only change that needs to be made is to upgrade the position of Secretary/ Administrative Assistant since tasks in practice have turned out to be heavier than foreseen (see the management chapter in the Secretariat Report 2005/6). Accordingly, the staff complement for 2006/ 7 is as follows:

Executive staff

Name	Nationality	Position	Rank	Since
Johannes Huber	Netherlands	Executive Secretary	E1	1-9-2004
José Maria Acero	Argentina	Assistant Executive Officer	E3	1-1-2005

General staff

Name	Nationality	Position	Rank	Since
José Luis Agraz	Argentina	Information Officer	G2	1-4-2005
Diego Wydler	id.	Information Technology Officer	G2	1-2-2006
Pablo Wainschenker	id.	Editor	G3	1-2-2006
Ms. Gloria Fontán	id.	Office Manager	G5	1-4-2006

Financial affairs will continue to be handled by Mr Juan Carlos Brizuela, Certified Public Accountant, and Ms Fontán. Aside from the regular staff of the Secretariat, certain tasks such as correction of scanned texts and proofreading will also be carried out by temporary staff on a contract basis.

Taking into account the recommendations of Mr Ed Kremzer, listed in the Secretariat's Report for 2005/6, a Staff Assessment System and a Human Resource Filing System will be established.

Financial matters

The budget has been compiled on the basis of the figures in the Forecast Budget, with some adjustments due to the experience of the Secretariat in the year 2005/6. Some figures could be adjusted downwards, but the figure for printing and copying had to be adjusted upward to take care of printing requirements for the Final Report, Site Guidelines for Visitors, the Handbook and pamphlets.

An estimate has been made of the sums required for the Staff Replacement Fund and the Staff Termination Fund in the period up to 2008. Provision of the required sum, $63.603, will be spread over the four financial years from 2004 to 2008.

Appendix 1

Budget 2006/7 and Forecast budget 2007/8 and allocation of resources

	Spent 2005/6	Forecast 2006/7	Draft 2006/7	Forecast 2007/8
Income				
Accumulated surplus			$324.533[1]	
Contributions	$914.792	$739.270	$739.270	$772.730
Total	**$914.792**	**$739.270**	**$739.270**	**$772.730**
1. APPROPRIATION FOR SALARIES				
Executive staff salaries	$220.799	$199.940	$203.877	$212.188
General staff salaries	$56.289	$87.420	$88.457	$106.275
	$277.087	**$287.360**	**$292.334**	**$318.463**
2. APPROPRIATION FOR GOODS AND SERVICES				
Accounting and auditing	$11.936	$15.490	$15.490	$17.814
Communications	$11.571	$29.140	$12.400	$14.260
Data entry, proofreading	$10.799	$16.640	$19.000	$19.136
Documentation services	$7.067	$2.020	$9.000	$8.970
Legal advice	$4.352	$10.710	$4.800	$5.520
Miscellaneous	$10.767	$6.210	$8.000	$7.142
Office expenses	$28.421	$35.510	$26.500	$30.475
Printing and copying	$14.114	$13.600	$20.000	$23.000
Representation	$11.502	$23.780	$11.502	$11.500
Training	$2.597	$11.350	$4.000	$4.600
Translation and editing	$107.378	$132.480	$134.118	$135.262
Travel costs	$71.557	$81.520	$81.520	$81.500
	$292.061	**$378.450**	**$346.330**	**$359.178**
3. APPROPRIATION FOR EQUIPMENT				
Documentation material	$1.726	$12.530	$9.000	$3.063
Furniture, equipment	$31.423	$13.880	$13.880	$15.962
IT equipment, software	$34.894	$30.980	$40.800	$41.657
Web and Software development	$12.887	$16.070	$21.000	$18.481
	$80.930	**$73.460**	**$84.680**	**$79.163**
to Staff Replacement Fund[2]	$12.500		$12.500	$12.500
to Staff Termination Fund	$3.426		$3.426	$3.426
TOTAL	**$666.004**	**$739.270**	**$739.270**	**$772.730**
Surplus			$324.533	
US Special Fund				
Income			$21.000	
Expenditure			$21.000[3]	

[1] Accumulated surplus at 31 March 2006 - $25.000 for Staff Replacement Fund and $6.852 for Staff Termination Fund (see note 2).
[2] In the period up to 2008, the sum necessary for the Staff Replacement Fund is estimated at $50.000 and for the Staff Termination Fund at $13.703. These funds will be charged to the four financial years from 2004 to 2008 i.e. $31.852 to the accumulated surplus as of 31 March 2006 and $15.926 to each of the years 2006/7 and 2007/8.
[3] For Documentation Centre equipment.

Allocation of resources 2006/7	Budget 2006/7	(%)				
		Management	ATCM / CEP	Info. Exch.	Documentation	Public info
1. APPROPRIATION FOR SALARIES						
Executive staff salaries	$203.877	35	35	15	10	5
General staff salaries	$88.457	35	20	20	15	10
	$292.334					
2. APPROPRIATION FOR GOODS AND SERVICES						
Accounting and auditing	$15.490	80	20			
Communications	$12.400	100				
Data entry, proofreading	$19.000		30		70	
Documentation services	$9.000				100	
Legal advice	$4.800	100				
Miscellaneous	$8.000	100				
Office expenses & maintenance	$26.500	100				
Printing and copying	$20.000	10	60		20	10
Representation	$11.502					
Training	$4.000	100				
Translation and editing	$134.118		80		10	10
Travel costs	$81.520	10	80			10
	$346.330					
3. APPROPRIATION FOR EQUIPMENT						
Documentation material	$3.000	100				
Furniture, equipment	$13.880	100				
IT equipment, software	$40.800	100				
Web and Software development	$21.000		20	40	20	20
	$84.680					

Appendix 2

Contribution Scale 2007/8

	Cat.	Mult.	Variable	Fixed	Total
Argentina	A	3,6	$21.203	$13.799	$35.002
Australia	A	3,6	$21.203	$13.799	$35.002
Belgium	D	1,6	$9.424	$13.799	$23.222
Brazil	D	1,6	$9.424	$13.799	$23.222
Bulgaria	E	1	$5.890	$13.799	$19.688
Chile	C	2,2	$12.957	$13.799	$26.756
China	C	2,2	$12.957	$13.799	$26.756
Ecuador	E	1	$5.890	$13.799	$19.688
Finland	D	1,6	$9.424	$13.799	$23.222
France	A	3,6	$21.203	$13.799	$35.002
Germany	B	2,8	$16.491	$13.799	$30.290
India	C	2,2	$12.957	$13.799	$26.756
Italy	B	2,8	$16.491	$13.799	$30.290
Japan	A	3,6	$21.203	$13.799	$35.002
Korea	D	1,6	$9.424	$13.799	$23.222
Netherlands	C	2,2	$12.957	$13.799	$26.756
New Zealand	A	3,6	$21.203	$13.799	$35.002
Norway	A	3,6	$21.203	$13.799	$35.002
Peru	E	1	$5.890	$13.799	$19.688
Poland	D	1,6	$9.424	$13.799	$23.222
Russia	D	1,6	$9.424	$13.799	$23.222
South Africa	C	2,2	$12.957	$13.799	$26.756
Spain	C	2,2	$12.957	$13.799	$26.756
Sweden	C	2,2	$12.957	$13.799	$26.756
Ukraine	D	1,6	$9.424	$13.799	$23.222
United Kingdom	A	3,6	$21.203	$13.799	$35.002
United States	A	3,6	$21.203	$13.799	$35.002
Uruguay	D	1,6	$9.424	$13.799	$23.222
		65,6		$386.365	$772.730
Budget amount					**772.730**
Base rate					$5.890

Appendix 3

Salary scale 2006/7 (NB gross salary incl. employee social security contributions)

2006/7		STEPS														
Level		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1	A	$93.162	$94.895	$96.629	$98.363	$100.096	$101.830	$103.563	$105.297	$107.030						
1	B	$116.453	$118.619	$120.786	$122.954	$125.120	$127.287	$129.454	$131.622	$133.787						
2	A	$78.448	$79.923	$81.399	$82.873	$84.348	$85.822	$87.297	$88.772	$90.248	$91.722	$93.197	$94.671	$96.147		
2	B	$98.060	$99.904	$101.748	$103.592	$105.435	$107.278	$109.121	$110.965	$112.810	$114.653	$116.496	$118.339	$120.183		
3	A	$65.417	$66.839	$68.263	$69.686	$71.110	$72.532	$73.956	$75.380	$76.802	$78.225	$79.648	$81.071	$82.494	$83.918	$85.340
3	B	$81.771	$83.549	$85.329	$87.108	$88.887	$90.666	$92.445	$94.224	$96.003	$97.781	$99.560	$101.338	$103.118	$104.897	$106.675
4	A	$54.243	$55.561	$56.881	$58.195	$59.515	$60.831	$62.147	$63.466	$64.785	$66.100	$67.419	$68.736	$70.053	$71.371	$72.688
4	B	$67.804	$69.451	$71.101	$72.744	$74.393	$76.039	$77.683	$79.333	$80.981	$82.626	$84.274	$85.920	$87.566	$89.213	$90.860
5	A	$44.973	$46.153	$47.331	$48.509	$49.687	$50.865	$52.044	$53.220	$54.400	$55.579	$56.755	$57.936			
5	B	$56.216	$57.691	$59.163	$60.637	$62.109	$63.582	$65.056	$66.525	$68.000	$69.474	$70.944	$72.420			
6	A	$35.602	$36.735	$37.866	$39.000	$40.131	$41.263	$42.398	$43.530	$44.661	$45.350	$45.794				
6	B	$44.502	$45.919	$47.333	$48.750	$50.164	$51.579	$52.997	$54.412	$55.826	$56.687	$57.242				

2006/7		STEPS														
Level		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1		$26.323	$27.610	$28.898	$30.184	$31.528	$32.931									
2		$25.422	$26.608	$27.795	$28.980	$30.216	$31.505									
3		$21.184	$22.173	$23.161	$24.150	$25.181	$26.255									
4		$17.654	$18.478	$19.302	$20.125	$20.984	$21.879									
5		$14.584	$15.265	$15.945	$16.626	$17.336	$18.077									
6		$11.955	$12.511	$13.069	$13.627	$14.209	$14.816									
7																
8																

Appendix 4

Forecast Programme 2007/8

1. ATCM/CEP support

ATCM XXX and XXXI

The Secretariat will support the Ukraine Government with the planning and preparation of ATCM XXXI, and will be ready to take responsibility for the contracting of the interpretation and translation service to be provided for that meeting on behalf of the Ukraine Government if desired. The Secretariat will maintain contact with the US Government to assist with the preparation of ATCM XXXI.

Review of recommendations

The Secretariat will continue to assist the ATCM in the review of recommendations.

Coordination and contact

The Executive Secretary or the Assistant Executive Officer are expected to attend the meetings of CCAMLR, COMNAP, the IPY Joint Committee and other relevant meetings, to be further specified in the 2007/8 Draft Programme.

ATS Website

The Secretariat website will be further developed to make it more comprehensive and user friendly, taking into account the incorporation of the CEP Website during the 2006/7 Financial Year.

2. Information Exchange

Depending on the decisions of the 30th ATCM, the Electronic Information Exchange System will be tested and developed further. After it has entered into operation, new features will be developed to deal with any requirements formulated by the ATCM for information and data from the system.

3. Records and documents

The ATCM Recommendations database will be further developed to start including also the Working Papers, Information Papers and Secretariat Papers of the ATCM.

Antarctic Treaty Handbook

Publication of the Antarctic Treaty Handbook will be continued.

4. Public Information

Activities to inform the general public and increase the knowledge about the Antarctic Treaty System will continue.

5. Management

Personnel

The staff complement planned for the year 2006/7 will be continued.

Decision 2 (2006)

Ballast Water Exchange in the Antarctic Treaty Area

The Representatives,

Having adopted Resolution 3 (2006);

Desiring to promote the implementation of an interim Ballast Water Regional Management Plan for Antarctica by all vessels entering the Antarctic Treaty area;

Considering that the International Maritime Organisation (IMO) is the competent organisation to deal with shipping regulations;

Decide to:

Request the Host Government of ATCM XXIX to forward the Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area, adopted by the ATCM under Resolution 3 (2006), to the 55th session of the Marine Environment Protection Committee (MEPC) of the International Maritime Organisation, with a request that they be considered for appropriate action by the IMO.

ANNEX C

RESOLUTIONS

Resolution 1 (2006)

CCAMLR in the Antarctic Treaty System

The Representatives,

Recalling the prime responsibilities of the Antarctic Treaty Consultative Parties for the protection and preservation of the Antarctic environment and, in particular, their responsibilities under Article IX, paragraph 1 (f) of the Antarctic Treaty in respect of the preservation and conservation of living resources in Antarctica;

Conscious that the Convention on the Conservation of Antarctic Marine Living Resources is an integral part of the Antarctic Treaty System;

Further recalling that the objective of the Convention is the conservation of Antarctic marine living resources, which includes rational use;

Noting the commitment of all Contracting Parties to the Convention on the Conservation of Antarctic Marine Living Resources that they will not engage in any activities in the Antarctic Treaty area contrary to the principles and purposes of the Treaty and their acceptance of the obligations contained in Articles I, IV, V and VI of the Treaty;

Further noting the desirability of ensuring representation by states at the Antarctic Treaty Consultative Meeting and meetings of the Commission for the Conservation of Antarctic Marine Living Resources that reflects appropriate expertise of the Antarctic Treaty System;

Welcoming the endorsement by the Commission for the Conservation of Antarctic Marine Living Resources at its 24th annual meeting of the Scientific Committee's advice arising from the 2005 Workshop on Marine Protected Areas;

Recalling also Decision 9 (2005);

Recommend that the Parties:

1) regularly at the Antarctic Treaty Consultative Meetings reflect upon the contribution made by the Commission for the Conservation of Antarctic Marine Living Resources to the Antarctic Treaty System, including in respect of the conservation and protection of the Antarctic environment;

2) encourage increased cooperation at the practical level between the Antarctic Treaty Consultative Meeting and the Commission for the Conservation of Antarctic Marine Living Resources.

Resolution 2 (2006)

Resolution on Site Guidelines for Visitors

The Representatives,

Recalling Resolution 5 (2005), which adopted a list of four sites subject to Site Guidelines;

Believing that Site Guidelines enhance the provisions set out in Recommendation XVIII-1 (Guidance for those organising and conducting Tourism and non-Governmental activities in the Antarctic);

Desiring to increase the number of Site Guidelines developed for visited sites;

Confirming that the term "visitors" does not include scientists conducting research within such sites, or individuals engaged in official governmental activities;

Noting that the Site Guidelines have been developed based on the current levels and types of visits at each specific site, and aware that the Site Guidelines would require review if there were any significant changes to the levels or types of visits to a site; and

Believing that the Site Guidelines for each site must be reviewed and revised promptly in response to changes in the levels and types of visits or in any demonstrable or likely environmental impacts;

Recommend that:

1. the list of Sites subject to Site Guidelines that have been adopted by the ATCM be extended to include a further eight new sites. The full list of Sites subject to Site Guidelines is annexed to this Resolution. This Annex lists the current Sites subject to Site Guidelines, and replaces the Annex to Resolution 5 (2005); and

2. the provisions of paragraphs 2 to 5 of Resolution 5 (2005) be implemented for all sites subject to Site Guidelines listed in the Annex to this Resolution.

Annex to Resolution 2 (2006)

List of Sites subject to Site Guidelines:

1. Penguin Island (Lat. 62º 06’S; Long. 57º 54’W);
2. Barrientos Island, Aitcho Islands (Lat. 62º 24’S; Long. 59º 47’W);
3. Cuverville Island (Lat. 64º 41’S; Long. 62º 38’W);
4. Jougla Point (Lat. 64º 49’S; Long. 63º 30’W);
5. Goudier Island, Port Lockroy (Lat. 64º 49’S; Long. 63º 29’W);
6. Hannah Point (Lat. 62º 39’S; Long. 60º 37’W);
7. Neko Harbour (Lat. 64º 50’S; Long. 62º 33’W);
8. Paulet Island (Lat. 63º 35’S; Long. 55º 47’W);
9. Petermann Island (Lat. 65º 10’S; Long. 64º 10’W);
10. Pleneau Island (Lat. 65º 06’S; Long. 64º 04’W);
11. Turret Point (Lat. 62º 05’S; Long. 57º 55’W); and
12. Yankee Harbour (Lat. 62º 32’S; Long. 59º 47’W);

Resolution 3 (2006)

Ballast Water Exchange in the Antarctic Treaty Area

The Representatives,

Recalling the requirements of Annex II to the Protocol on Environmental Protection, on the Conservation of Antarctic Fauna and Flora, that precautions be taken to prevent the introduction of non-native species to the Antarctic Treaty area;

Aware of the potential for invasive marine organisms to be transported into or moved between biologically distinct regions within the Antarctic Treaty area by ships in their ballast water;

Conscious that the *International Convention for the Control and Management of Ships' Ballast Waters and Sediments,* 2004 (IMO Ballast Water Management Convention) has yet to enter into force;

Aware of the key principles of the IMO Ballast Water Management Convention, including that ballast water exchange be used as an interim measure until such time as ballast water treatment technologies have been developed, as set out in the Convention;

Noting the provision in the Convention which states that Parties with common interests bordering enclosed and semi-enclosed seas shall endeavour to seek co-operation with neighbouring Parties including through regional agreements to develop harmonised procedures (Article 13(3) of IMO Convention); and

Noting also that the Convention provides for a Party or Parties to put in place additional measures to require ships to meet a specified standard or requirement (Annex, Regulation C-1);

Desiring in the interim to put in place a Ballast Water Regional Management Plan for Antarctica;

Recommend that:

The Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty area annexed to this Resolution be used by all ships in the Antarctic Treaty area except those referred to in Article 3, paragraph 2, of the *International Convention for the Control and Management of Ships' Ballast Waters and Sediments*, 2004 (IMO Ballast Water Management Convention).

Annex to Resolution 3 (2006)

Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area

1. The application of these Guidelines should apply to those vessels covered by Article 3 of the IMO's International Convention for the Control and Management of Ships' Ballast Water and Sediments (the Ballast Water Management Convention), taking into account the exceptions in Regulation A-3 of the Convention. These Guidelines do not replace the requirements of the Ballast Water Management Convention, but provide an interim Ballast Water Regional Management Plan for Antarctica under Article 13 (3).

2. If the safety of the ship is in any way jeopardised by a ballast exchange, it should not take place. Additionally, these guidelines do not apply to the uptake or discharge of ballast water and sediments for ensuring the safety of the ship in emergency situations or saving life at sea in Antarctic waters.

3. A Ballast Water Management Plan should be prepared for each vessel with ballast tanks entering Antarctic waters, specifically taking into account the problems of ballast water exchange in cold environments and in Antarctic conditions.

4. Each vessel entering Antarctic waters should keep a record of ballast water operations.

5. For vessels needing to discharge ballast water within the Antarctic Treaty area, ballast water should first be exchanged before arrival in Antarctic waters (preferably north of either the Antarctic Polar Frontal Zone or 60°S, whichever is the furthest north) and at least 200 nautical miles from the nearest land in water at least 200 metres deep. If this is not possible for operational reasons then such exchange should be undertaken in waters at least 50 nautical miles from the nearest land in waters of at least 200 metres depth.

6. Only those tanks that will be discharged in Antarctic waters would need to undergo ballast water exchange following the procedure in Paragraph 5. Ballast Water Exchange of all tanks is encouraged for all vessels that have the potential/capacity to load cargo in Antarctica, as changes in routes and planned activities are frequent during Antarctic voyages due to changing meteorological and sea conditions.

7. If a vessel has taken on ballast water in Antarctic waters and is intending to discharge ballast water in Arctic, sub-Arctic, or sub-Antarctic waters, it is recommended that ballast water should be exchanged north of the Antarctic Polar Frontal Zone, and at least 200 nautical miles from the nearest land in water at least 200 metres deep. (If this is not possible for operational reasons then such exchange should be undertaken in waters at least 50 nautical miles from the nearest land in waters of at least 200 metres depth).

8. Release of sediments during the cleaning of ballast tanks should not take place in Antarctic waters.

9. For vessels that have spent significant time in the Arctic, ballast water sediment should preferably be discharged and tanks cleaned before entering Antarctic waters (south of 60°S). If this cannot be done then sediment accumulation in ballast tanks should be monitored and sediment should be disposed of in accordance with the ship's Ballast Water Management Plan. If sediments are disposed of at sea, then they should be disposed of in waters at least 200 nautical miles from the shoreline in waters at least 200 metres deep.

10. Treaty Parties are invited to exchange information (via the Council of Managers of National Antarctic Programs) on invasive marine species or anything that will change the perceived risk associated with ballast waters.

Resolution 4 (2006)

Conservation of Southern Giant Petrels

The Representatives,

Noting that the Committee for Environmental Protection (CEP) is keeping under review the status of the southern giant petrel;

Recognising that the species, in its global distribution, is currently listed as "Vulnerable" by the IUCN;

Recalling SCAR's advice that the species meets the IUCN criteria for it to be listed as "Critically Endangered" in the Antarctic Treaty area;

Understanding that recent data indicating a larger global population may prompt a reappraisal of the IUCN status category of the species for its global distribution in the near future;

Recalling the *Guidelines for CEP Consideration of Proposals for New and Revised Designations of Antarctic Specially Protected Species under Annex II of the Protocol* adopted at CEP VIII, which provide, *inter alia*, for assessment of the status of species at a regional or local level;

Recommend that:

1. SCAR undertake a further review of the status of southern giant petrel using all available data and provide a report at CEP X, including, if appropriate, a proposal for inclusion of the species on the list of Specially Protected Species in Appendix A to Annex II to the Protocol on Environmental Protection, together with a draft Action Plan;

2. In the intervening period all Governmental and non-Governmental activities in Antarctica should be planned so as to avoid negative impacts on southern giant petrels, in particular on breeding colonies of this species.

PART III

OPENING AND CLOSING ADDRESSES AND REPORTS FROM XXIX ATCM

ANNEX D

OPENING AND CLOSING ADDRESSES

Opening Remarks by Sir Michael Wood, KCMG, Chairman of the XXIX Antarctic Treaty Consultative Meeting

Edinburgh, 12 June 2006

Ladies and Gentlemen,

First, I wish to thank you most warmly for electing me as Chairman of this, the Twenty–ninth Antarctic Treaty Consultative Meeting. It is for me a great honour, and I hope I will be able to assist in the smooth running and productive output of the Meeting.

We have a full programme of work and other activities. Your British hosts will do their best to make your stay here in Edinburgh successful and enjoyable. Stockholm set a good example, and we shall try to match the high standards set by our Swedish colleagues. It was fitting that the last Consultative Meeting ended to the notes of the bagpipes. The music on that occasion was composed by the Swedish Chairman, but I think he would be the first to say that it was inspired by a love of Scotland.

Let me say next that if, during the next two weeks, any of you want to raise anything with me, do not hesitate to do so. That is what I am here for, and I shall be available at all times of day and night, if necessary. But you are in the very capable hands of Jan Huber and the Antarctic Treaty Secretariat, as well as the Host Country Secretariat led by Paul Davies.

I am personally very pleased to be here, once again, at an Antarctic Treaty meeting. I was fortunate to attend some meetings long ago, in the 1970s, in Oslo, Paris and elsewhere, as a lawyer with the British delegation. But competition within the United Kingdom Foreign and Commonwealth Office to be the legal adviser on polar matters is fierce, and I have not succeeded in returning since then - until today, that is. But I have always followed Antarctic affairs with great interest, and with admiration for all that you have achieved over the years. Much has changed in the governance of the Continent since I was last present at a Consultative Meeting. You have built up, year by year, an Antarctic Treaty System of which we can all be proud. Of course, there remains, and will always remain, much to be done. There will continue to be new challenges that demand attention. But we face these challenges in the knowledge that there is a solid foundation, the Antarctic Treaty System.

Among matters of current importance, which we shall be dealing with over the next two weeks, perhaps the most significant is the question of environmental protection, in all its manifold aspects, including impact on the climate. We were pleased to host, here in Edinburgh, a successful Workshop of the Committee for Environmental Protection, and I am sure we shall build on that work in the coming days. There are also matters of tourism and important legal and administrative issues that, among other things, will require our attention.

A particularly important feature of this ATCM is that we meet on the eve of the International Polar Year 2007-2008. We shall devote a whole day, next Monday, to the Year. This will be an occasion to emphasise the impressive range of scientific and other activities that will come together under the umbrella of the International Polar Year and the links between North and South.

Antarctica, as is often said, is a Continent for peace and science. It is a Continent for peace and science because of the work that you and your predecessors have done over the years, going right back to the last International Polar Year (the International Geophysical Year of 1957-1958), to establish good governance for Antarctica. Never has the role of science in the Polar regions been more relevant and more important to the future of the World than today. The British Government

attaches the highest importance to this work, and is therefore pleased and honoured to host this Antarctic Treaty Consultative Meeting.

Your British hosts, and they include people from both London and Edinburgh, have arranged what I am sure will be an interesting and enjoyable programme, in addition to the formal meetings. There will be art and photography, and heritage displays; visits to two polar ships at the port of Leith (*HMS Endurance* and the British Antarctic Survey's Royal Research Vessel *James Clark Ross*); an evening lecture series, which will among other things highlight the Scottish contribution to the Antarctic; as well as many opportunities for less formal gatherings. In addition, we hope that you will find time to explore the wonderful city of Edinburgh, capital of Scotland. And, as you will discover, we have done our best to make this meeting an occasion to raise awareness of Antarctica among the people of Edinburgh, not least the young people, and more widely in Scotland and beyond.

May I, once again, thank you for your confidence in electing me as your Chair.

Before we turn to the business of the Meeting, I should like to recall those who have passed away since our last Antarctic Treaty Consultative Meeting in Stockholm. There are those who have died in the field: we remember in particular the tragedies of King George's Island. There are also two leading figures of the Antarctic Treaty System: Tøre Gjelsvik from Norway and John Heap from the United Kingdom. I would invite you to stand and observe a minute's silence in memory of all those who have devoted a good part of their lives to Antarctica, and who have passed away since our last Meeting. Please stand.

Opening Address by HRH Princess Anne

29th Antarctic Treaty Consultative Meeting in Edinburgh, 12 June 2006

The 29th Antarctic Treaty Consultative Meeting was officially opened by HRH The Princess Royal. In her address to the ATCM delegates Her Royal Highness noted her particular pleasure that Edinburgh had been chosen as the host city for the Meeting, given the important historical connections between Scotland and the Antarctic.

HRH The Princess Royal used her opening address to focus on the privileges and responsibilities of working in Antarctica as well as the importance of preserving Antarctic heritage such as the huts of explorers Scott and Shackleton, which she had previously visited. At the opening ceremony she told the delegates:

"If a demonstration of international co-operation is needed, and it usually is, then the Antarctic Treaty System provides a very good example. It has now proved itself for almost 50 years. It is a model of dialogue and collaboration that could, and probably should, be used more widely."

"Everybody realises that Antarctica holds the key to many of the vital questions and challenges that are already facing us and will certainly face future generations."

"You have plenty of important issues up for discussion. And crucial in all your minds must be the preservation and well-being of Antarctica and all it stands for, both to this and future generations."

Her Royal Highness officially opened ATCM XXIX and wished the delegates well in their discussions.

Opening Address by Foreign and Commonwealth Office Minister Lord Triesman

Your Royal Highness, Mr Chairman, Your Excellencies, distinguished Delegates and colleagues.

It was back in 1977 that the UK last had the honour to host the Antarctic Treaty Consultative Meeting – the ninth at that stage. And that honour has returned again today, as we all gather for the 29th ATCM in this, the most northerly capital city of the United Kingdom. For the UK this is a great privilege. The UK's involvement in the Antarctic – in its exploration and in its scientific endeavours - has been lengthy. Our understanding has improved, and improved a great deal since Captain James Cook in the 1770s wrote of

"Lands doomed by nature to perpetual frigidness whose horrible and savage aspect I have not words to describe".

Today, Antarctica's importance to the very stability of our planet is widely acknowledged. Antarctica is not simply 15 million square kilometres of frozen land and ice. As you said, Your Royal Highness, Antarctica can allow us to unlock the secrets of the planet's climate from former years and former ages. It also possesses the capacity, if our stewardship of the world proves inadequate, to impact in new ways on the Earth's fundamental systems, including weather, both responding to, and contributing to, climate change and rising sea levels.

Today we are collected here under a vital bond of collaboration and co-operation. This is the enduring product of the 1959 Washington Treaty - a treaty made all the more remarkable by the period of international tension in which it had to be formulated. The UK had the great privilege of being the first of the 12 original States to sign the Antarctic Treaty – a record that we managed to repeat in Madrid in 1991 with the Environmental Protocol.

And the Treaty has stood the test of time. That is a tribute to those who negotiated and drafted it. There were drivers, both negative and positive, influencing the need to ensure stability for Antarctica – the seventh continent. In the International Geophysical year of 1957/58, countries undertook an unprecedented programme of scientific research in Antarctica. It was largely that science, and the co-operation it engendered, which spawned the desire to convert scientific goodwill into something politically more tangible.

At this Meeting we are about to enjoy the 50th commemoration of the International Geophysical Year. Next year in March the International Polar Year will get underway. This will be the most significant commitment to polar science since 1957. The United Kingdom believes that, as such, it needs to be commemorated, and the importance of the International Polar Year needs to be communicated to the widest possible audience. To achieve these two ends, we have proposed that a whole day at this meeting should focus on IPY.

The importance of Antarctica as a platform for science should not be underestimated. As the effects of climate change become more evident, it will be to the Antarctic that we must continue to turn for possible answers – both to examine the pre-history of our planet locked up in Antarctic ice, and to monitor the very stability of that ice-sheet. For sea-level rise, when it comes, will partly have its origins in the southern continent.

The UK is justly proud of our own input to global scientific collaboration. The scientific activities of the British Antarctic Survey have contributed greatly to the success of international science in Antarctica – not least the discovery by BAS at Halley in 1985 of the spring ozone hole over the continent – an event which led to the signing of the Montreal Protocol addressing the phasing out of

the use of CFCs. That was a remarkable example of science being converted into international policy within a commendably short time-span. It is just one example of the scientific and logistical excellence of BAS, which includes studying every aspect of climate change in Antarctica.

For climate change continues to be the most pressing global environmental priority. The Arctic Council's Arctic Climate Impact Assessment bought the problem in the North into sharp focus, and highlighted the impact of a warming Arctic on the rest of the world. Whilst the Antarctic does not have the same human dimension as the Arctic, we know that the Antarctic Peninsula is warming faster than almost any other area of the planet. The polar regions provide our barometer for climate change. We need to work together now to assess the impact of climate change and the impact it will have on the unique Antarctic environment. We must ensure that all of our scientists continue to co-operate, both in the North and in the South, in order to further our understanding of climate change in the polar regions. I also hope that this Meeting will seek opportunities to work collaboratively with the Arctic Council: together they can communicate to the rest of the world how important the polar regions are to our understanding of climate change.

Increasingly, Antarctica is no longer the preserve of the scientist either. Many now come to marvel at its wildlife and scenery. Antarctic tourism is, I suspect, here to stay. But such tourism needs careful management and regulation if it is not to impact on the very intrinsic values that sustain it. The Treaty Parties - and the tourism industry itself - have done much to achieve such regulation. That said, right across the tourism agenda the graph is ever upwards – in the numbers of tourists, the numbers of tourist ships and the numbers of locations visited.

This past Antarctic season we were pleased to offer the services of the Royal Navy's *HMS Endurance* to an international team, to examine the Site Guidelines for tourist sites in Antarctica. Such site-specific management will be of great importance. We hope the principle can now be extended widely.

It would be irresponsible of us not to address and, if need be, to regulate for the continuing changes that tourism will bring. Some question the need for land-based tourism in Antarctica. Is this what we want for the last great pristine wilderness on our planet? Equally, is it sensible, (and I do no more than pose the question), is it sensible to allow increasingly larger cruise ships access to Antarctic waters? Such ships are certainly at home in the Caribbean or Mediterranean: what risks, to the environment and to human safety, might they pose in the face of a major accident in the ice-infested waters of Antarctica? Your negotiations on the Liability Annex, brought successfully to a conclusion in Stockholm last year, concluded that the most significant risk to the Antarctic environment was likely to come from a major maritime grounding or sinking.

The international governance of Antarctica is an important task. The Antarctic Treaty System, as a suite of treaties and other regulations, was the product of far-sightedness, and creativity. To be most effective, the Antarctic Treaty System needs to be seen as an integrated package. The international collaboration and co-operation that epitomises Antarctic politics must not only embrace the important principle of consensus between States, but it must also ensure that the major elements of the Antarctic Treaty System continue to work in harmony. Gaps and inconsistencies must not be allowed to develop between the pieces of the jigsaw. By looking across all the elements, whether they be science, environment, tourism or fishing, we should see a strategic unity of purpose within the System.

Distinguished delegates,

I know that you do have a busy agenda ahead of you for the next two weeks. I heard today as I arrived in Edinburgh that the temperature in Antarctica is -41°C, so I think that Edinburgh is not too bad a place to be in order to conduct the discussions. I would like to echo the words of Her Royal Highness in wishing you all a very productive meeting, as well as a very pleasant stay here in Edinburgh.

My thanks to you all.

Closing Address of Sir Michael Wood, KCMG, Chairman of the XXIX Antarctic Treaty Consultative Meeting

Edinburgh, 23 June 2006

Distinguished Delegates,

We have come to the end of the Twenty-ninth Antarctic Treaty Consultative Meeting. I have greatly enjoyed acting as the Chairman. I felt rather like the conductor of an orchestra where all the players understand each other, and know the music so well, that they really have no need of a conductor.

Our meeting has taken further the essential work of making provision for the good governance of Antarctica. Among the highlights, I would mention the *Edinburgh Antarctic Declaration on the International Polar Year 2007-2008*, adopted on 19 June, the day we devoted to the International Polar Year. The International Polar Year is an important opportunity to take forward, on a large scale and in close international cooperation, important scientific work polar matters. We all recognise that this has never been as vital as it is today.

The work of the Committee for Environmental Protection (CEP) has, as we have come to expect, been especially fruitful. The CEP has become a central element of the Antarctic Treaty System, and is a body which is rightly held in the highest regard for its contribution to the good governance of Antarctica in environmental matters. This year the CEP held a most productive workshop on its Future Strategy, at which some very useful informal discussions took place. I would urge that the CEP now builds on this dialogue and creates a five-year work plan to guide its very important work. I note what the Chairman said about the pressures on the CEP, with its workload increasing each year. I also commend its efficiency overall. Most of the recommendations coming from this meeting originated from within the CEP.

I pay special tribute to its Chairman, Dr Tony Press of Australia, who has once again expertly guided the Committee through a demanding agenda. The CEP has been fortunate to have had him at the helm over these last four years. It is Dr Press's last meeting as Chair, since the Committee's Rules of Procedure place a maximum period of four years. We thank Dr Press for all that he has done, and wish every success to the Committee under its new Chair. I congratulate his successor, Mr Neil Gilbert of New Zealand, and the newly elected Vice-Chair, Tania Brito of Brazil. It is good to know that the CEP will be in good hands also in the future.

I thank the Chairmen of the Working Groups: Professor Olav Orheim, Chair of the Legal and Institutional Working Group; Mr Michel Trinquier, Chair of the Tourism and Non-Governmental Working Group; and Dr José Retamales, Chair of the Operational Matters Working Group. The Legal and Institutional Working Group continued its work of considering arrangements for the Secretariat, as well as preparing the texts of the various measures. The Tourism Working Group has this year discussed some very important issues, important for the future of the continent, which will need to be taken up again in New Delhi. The Operational Matters Working Group, amongst other things, considered the important question of contingency planning and emergency response, and had a long and useful discussion on the risks to human safety in the environment. As usual, it heard reports on a large number of national programme activities.

The chairs of the Working Groups, together with Tony Press, have borne the brunt of our work during these two busy weeks. And they, together with the Vice-Chair of the Meeting, Dr Rasik Ravindra, Head of the Indian Delegation, the Executive Secretary Jan Huber, the Head of the Host Country Secretariat Paul Davies and the leader of the Rapporteurs, John Dudeney, together formed an informal "bureau" that, following the precedent set in Stockholm, met early each morning. This

enabled us to ensure that the activities of the various elements of the Meeting were properly coordinated and working to a satisfactory timetable. I am grateful to the members of this bureau, who provided invaluable assistance and guidance to me as Chair. I would certainly recommend that this practice be followed in New Delhi next year.

I wish to thank the Scientific Committee for Antarctic Research (SCAR) for their valuable contribution to our work. SCAR is, I believe, just a little older than the ATCM. I am particularly grateful to Dr Valérie Masson-Delmotte for delivering the excellent SCAR lecture to delegates and the public lecture last Wednesday. And I thank COMNAP and CCAMLR for their important contributions to our work.

I should like, on behalf of us all, to thank Jan Huber and his team from the Antarctic Treaty Secretariat in Buenos Aires. This is the second time that the Antarctic Treaty Secretariat has been present at a Consultative Meeting, and they have greatly assisted our work. I take this opportunity to emphasise the importance, for the effectiveness of the Secretariat, of all parties paying their assessed voluntary contributions in full and on time. Working with the Secretariat members from Buenos Aires were the excellent Rapporteurs, under the able guidance of John Dudeney. I thank them for their indispensable work of recording the interventions at all the meetings, which then formed the basis for preparing the various Reports and the Final Report.

I must also thank all the members of the Host Country Secretariat, under Paul Davies, for their hard work, over many months, or even years, without which our Meeting could not have functioned. The programme they arranged for us, and the arrangements here at the meeting, were exceptional.

I thank the staff here at the Edinburgh International Conference Centre, Hans Rissman and his team, who have looked after us so well. The technical staff have performed wonders, as have the catering team, who have kept us well supplied with cakes. I think all delegates have been impressed by the excellent facilities in this venue. I certainly have.

We have had a full programme of public engagement events that attracted 10,000 visitors. The concept of outreach that went under the title *Discover Antarctica* was very well thought out. I wish to express our thanks to all those who have spent so much time and effort on arranging them, including those who have been operating the media office throughout the Meeting. I will not list all the events. But I would highlight the excellent photographic and art display, which will have a permanent legacy in the two catalogues. The two polar ships at Leith, the British Antarctic Survey's *RSS James Clark Ross* and *HMS Endurance,* attracted over 5,000 visitors. I thank the lecturers who took part in the public evening lecture series, as well as those scientists and others who addressed us at the special session on the International Polar Year.

I want to thank all the delegations, of the Consultative Parties, of the other Treaty Parties, of the Observers from CCAMLR, SCAR and COMNAP, as well as the invited Experts from International and Non-Governmental Organisations, and the representatives of the States who have been invited to observe the Meeting.

The members of the United Kingdom delegation have been delighted to be your hosts here in Edinburgh. For the United Kingdom delegation this is the end of an era. Dr Mike Richardson is leaving his post before the next ATCM. Mike has been at the helm of the United Kingdom's polar diplomacy since 1992, some fourteen years, and over that period has contributed hugely to the work of furthering the good governance of Antarctica. I know he will be greatly missed.

Last, but not least, a very warm word of thanks to the interpreters and translators, who - beyond the call of duty - have so ably enabled us to communicate with each other. No meeting like ours could ever begin to operate without them. Mr Bernard Ponette and his colleagues have once again served the Consultative Parties admirably. He and they are tremendous at their job. Their grasp of our

subject is exceptional, and they have a memory of it that makes them highly valued members of the international Antarctic community. We thank them most sincerely for their tremendous contribution.

Next year it is the turn of India to host the ATCM. You will move from one ancient and historic city to another, from Edinburgh Castle to the Red Fort of Delhi. One of my abiding memories is the hall in the Red Fort, the Diwan-i-Khas, which overlooks the Old Town. There is a Persian verse inscribed around the walls of the room, which, if my memory is right, says:

"*If there be Paradise on Earth, It is This, It is This, It is This*."

I wonder what the Poet would have written of Antarctica.

ANNEX E

REPORT OF THE COMMITTEE FOR ENVIRONMENTAL PROTECTION (CEP IX)

Report of the Committee for Environmental Protection (CEP IX)

Edinburgh 12-16 June 2006

Item 1: Opening of the Meeting

(1) The CEP Chair, Dr Tony Press (Australia), opened the meeting on Monday 12 June 2006.

(2) The Chair thanked the United Kingdom for arranging and hosting the meeting, and also thanked the Secretariat of the Antarctic Treaty for their important work in administering the submission of papers and the meeting website.

(3) The Chair briefly introduced a non-paper summarising the work undertaken by the Committee since CEP VIII, noting the substantial amount of work undertaken during the intersessional period.

Item 2: Adoption of the Agenda

(4) The Committee adopted the following agenda and confirmed the allocation of papers to Agenda Items:

1. Opening of the Meeting
2. Adoption of Agenda
3. Strategic Discussions on the Future Work of the CEP
4. Operation of the CEP
5. International Polar Year
6. Environmental Impact Assessment
7. Area Protection and Management
8. Conservation of Antarctic Fauna and Flora
9. Environmental Monitoring and Reporting
10. Inspection Reports
11. Emergency Response and Contingency Planning
12. Waste Management
13. Prevention of Marine Pollution
14. Cooperation with Other Organisations

15. General Matters

16. Election of Officers

17. Preparation for Next Meeting

18. Adoption of the Report

19. Closing of the Meeting

(5) The Committee considered 38 Working Papers, 68 Information Papers and 3 Secretariat Papers (Annex 1, page 301).

Item 3: Strategic Discussions on the Future of the CEP

(6) The United Kingdom introduced WP 42 *Antarctica's Future Environmental Challenges: A summary report of the CEP Workshop* and IP 113 (rev 1) *Antarctica's Future Environmental Challenges: Report of the CEP Workshop, Edinburgh, United Kingdom, 9–10 June 2006* which provided details of the workshop. The Committee agreed that the workshop had been productive. Follow-up discussions would be held to prioritise issues arising from the workshop.

(7) The United Kingdom noted that some of the immediate actions from the workshop had been picked up in discussions during the week but was keen not to lose sight of the other outstanding actions. They suggested that the steering committee continue to operate and develop a five-year forward action plan for consideration at CEP X. Many Members thanked the United Kingdom for organising a productive and useful workshop.

(8) Sweden noted that the CEP should also take into account the challenging discussions on the future development of activities in Antarctica and their impact on the environment.

(9) The CEP agreed to establish an intersessional contact group (ICG) to take forward the development of a five-year work plan and agreed the following terms of reference:

- Review the outcomes of the CEP Workshop as recorded in ATCM XXIX / WP 42 and ATCM XXIX / IP 113 (rev 1);
- Consider the work undertaken by CCAMLR to develop a five-year work plan for its WG-EMM as a model example;
- Take account of the IPY planning work considered at CEP IX;
- On the basis of the above, develop a draft five-year, prioritised work plan for consideration at CEP X; and
- Prepare advice for CEP X on practical measures that the CEP might consider in managing its work, including for example, themed meetings, standing groups and workshops.

(10) The Committee agreed that Dr Neil Gilbert (New Zealand) would convene the ICG.

(11) The Committee encouraged CEP Members, Observers and Experts to submit papers to CEP X on issues identified for immediate focus.

Item 4: Operation of the CEP

(12) Australia introduced WP 11 *Committee for Environmental Protection (CEP) Handbook*, which presented a draft online CEP Handbook prepared in response to discussions at CEP VIII (reported in Annex 6 to the CEP VIII Final Report). The draft handbook, comprising a compilation of CEP procedures and approved guidelines, was available on the CEP website. Several Members thanked Australia for developing the handbook, noting the value of such a tool in assisting the work of CEP representatives. The Committee strongly supported the concept of an online CEP Handbook and requested the Secretariat to take responsibility for maintaining and updating such a handbook with the assistance of Members, as appropriate.

(13) The Secretariat introduced SP 10 *Template for Annual Reporting under Article 17 of the Environment Protocol* and demonstrated a proposed online system to help Members meet existing requirements relating to exchange of information under the Protocol. Several Members congratulated the Secretartiat on preparing this useful tool. Some concern was expressed about ensuring the database did not go beyond the existing requirements of information exchange and did not include references to unofficial sources. Subject to these changes, the Committee considered that it would be useful to trial the online system for a year before committing to a transition from the current information exchange process. Accordingly, the Secretariat was asked to make arrangements to allow Members to access the system on a trial basis.

(14) The Secretariat provided an update on plans for the transfer of the CEP website following CEP IX, noting that it had undertaken intersessional consultation with Australia on this matter.

(15) The list of CEP Contact Points was updated (Annex 2, page 309).

Item 5: International Polar Year

(16) Dr David Carlson, Director of the IPY Programme Office, made a presentation on the International Polar Year. He emphasised the huge opportunities offered by the IPY for international collaboration in science and outreach programmes. He highlighted the various themes the projects would cover. Some 50,000 participants from 60 countries would be involved in IPY projects.

(17) He commented that the IPY was a rare and unique opportunity for the Antarctic legacy and its sustainable future. He pointed out that there were indigenous peoples who would speak for the Arctic environmental legacy of the IPY but questioned who would speak for the Antarctic environmental legacy.

(18) Many Members thanked Dr Carlson for an excellent presentation which stimulated much useful discussion. They all expressed support for the work of the IPY and looked forward to the advances in knowledge which will flow from it. Many also endorsed the importance of outreach work. A Member requested that the slides accompanying the presentation be made available on the CEP website.

(19) Some Members expressed concern about the effect that so much activity would have on the Antarctic environment, and encouraged others to consider joint logistics whenever possible. To this end it was suggested that Parties make known their research plans as soon as possible.

(20) Although one Member expressed disappointment that the CEP had not been more pro-active in feeding into IPY plans at an early stage, others noted that opportunities remained to create political momentum during the IPY through outreach programmes.

(21) ASOC introduced IP 64 *A Glimpse into the Environmental Legacy of the IPY 2007-2008* which showed that a large number of projects were planning to leave physical infrastructure in Antarctica and at least 20 projects may need to submit IEEs or CEEs by 2007.

(22) The Committee noted the encouraging discussions about IPY both at the CEP meeting and at the Workshop. The Committee wished the IPY team great success and agreed to continue to invite an IPY representative to CEP meetings.

(23) The Members encouraged Parties to provide logistic and financial support for scientific research operations and outreach within the framework of the IPY.

Item 6: Environmental Impact Assessment

6a) Consideration of Draft CEEs forwarded to the CEP in accordance with paragraph 4 of Article 3 of the Protocol

(24) Belgium made a presentation on WP 25 *Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica. Draft Comprehensive Environmental Evaluation (CEE)* and the accompanying IP 22 with the same title, which contained the full draft CEE document. Belgium also provided electronic and colour printed copies of the draft CEE.

(25) The station will be situated near the Utsteinen Nunatak, at the foot of the Sør Rondane Mountains, Dronning Maud Land. The draft CEE had been approved and endorsed by the Belgian Federal Ministries of Environment, Foreign Affairs and Science Policy. These ministeries concluded that the global scientific importance and value to be gained by the construction and operation of the new Belgian station in the 1072 km-wide empty sector between the Japanese Syowa station and the Russian Novolazarevskaya station outweigh the more than minor and transitory impacts the station construction and operation will have on the Antarctic environment, and fully justify the launch of this project.

(26) The draft CEE was released by the Belgian Federal Science Policy (Belspo) on 10 February 2006 and notification of the report was sent to all Parties to the Protocol on Environmental Protection via diplomatic channels.

(27) Many Members commended Belgium for the quality of the draft CEE document and for the innovative station design. A number of Members raised questions relating to fuel storage, solid waste management, monitoring of station impacts (including on flora and fauna), water generation, emergency facilities, the potential impacts of the nearby airstrip and the criteria used for assessing the intensity of environmental impacts. Belgium welcomed the feedback and undertook to address these issues when preparing the final CEE.

(28) The Committee agreed that the draft CEE provided a comprehensive description and evaluation of the proposed activity and likely environmental impacts, and was therefore consistent with the requirements of Annex I to the Protocol.

(29) The Committee also noted that there were no other facilities in the area that Belgium could share or take over. The construction of a new station was therefore justified.

(30) ASOC also thanked Belgium for an excellent CEE but expressed its concern about the cumulative impacts on the Antarctic wilderness and other intrinsic values of Antarctica resulting from the establishment of new stations in near-pristine areas. The 'no-go' alternative had to be considered carefully, and the alternative to proceed had to be justified on scientific grounds.

(31) Many Members and ASOC noted that the proposed station and other new stations in Antarctica were a model for sustainable management because they relied on renewable energy and they could be dismantled after use.

(32) The CEP's advice to the ATCM on the draft CEE for 'Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica' is in Appendix 1, page 313.

(33) The United Kingdom introduced IP 18 *Update on the Comprehensive Environmental Evaluation (CEE) for the Proposed Construction and Operation of Halley VI Research Station, Brunt Ice Shelf, Caird Coast, Antarctica*. The United Kingdom informed the Committee that the construction of Halley VI had been delayed by one year and is now planned to take place during the 2007/08 and 2008/09 seasons. The final CEE had therefore been delayed and would be made available for comment at the end of 2006. The final CEE would include the decommissioning and removal of Halley V.

(34) Argentina noted that the process for CEP consideration of draft CEEs was problematic because it did not provide for intersessional discussion of issues in all four official languages. It also noted that this matter was particularly important because it involved the consideration of activities that would cause more than minor or transitory impacts on the Antarctic environment. One Member noted that this issue raised by Argentina was relevant.

6b) Other EIA Matters

(35) The Secretariat introduced SP 8 *Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2005 and March 31st 2006*, noting that the reporting period had changed in accordance with the requirements of Resolution 1 (2005). The information in this table, together with information submitted on IEEs and CEEs since 1988, could be accessed via the EIA database established on the ATS website. The Secretariat noted that the template should facilitate greater consistency in the reporting of this information.

(36) ASOC introduced IP 94 *Station Sharing in Antarctica*, which promoted the sharing of existing facilities rather than the establishment of new stations by individual Parties.

(37) The Committee recognised that there are numerous examples of scientific and logistical cooperation in Antarctica, and encouraged Antarctic programmes to continue to explore opportunities for collaboration and cooperation. Some Members stressed that Annex VI on Liability should not be allowed to hinder joint logistical or scientific endeavours.

(38) Uruguay emphasised the importance of implementing Article 6 of the Protocol, and in this sense offered to share the ECARE station facilities in the Antarctic Peninsula, on both scientific and logistic levels.

(39) Recalling earlier discussions on the matter, and while recognising the need to support scientific research, the Committee reiterated its concern over the need to avoid a proliferation of bases in Antarctica. The Committee also noted that the Treaty Parties had indicated that the construction of a station or base in Antarctica was not a requirement for attaining Consultative Party status (Recommendation XV-17), and suggested that the ATCM consider reaffirming this position.

(40) The Russian Federation introduced IP 68 *Russian Studies of the subglacial Lake Vostok in the season of 2005-2006 and Work Plans for the season of 2006-2007* and IP 69 *Drilling of Additional 75 m in deep Borehole 5G-1 at Vostok Station. Initial Environmental Evaluation*. Lengthy discussion took place and several Members sought clarification on the timing of, and environmental issues surrounding, the drilling at Lake Vostok.

(41) The United Kingdom referred to recent British research suggesting that some Antarctic subglacial lakes may be interconnected, and questioned whether this had implications for the proposed penetration of Lake Vostok.

(42) SCAR noted that it was aware of recent scientific literature which suggested that if one sub-glacial lake was contaminated, contamination may spread downstream to connected lakes. SCAR's Subglacial Antarctic Lakes Exploration group (SALE) had discussed this possibility over the years, but many aspects remained unclear - including the extent of sub-ice drainage basins, the interconnectivity of subglacial systems, and the rate of water flow. These questions were critical to understanding the age, origins, structure, and evolution of subglacial systems and possible resident microorganisms. SCAR noted that the risks of

continued drilling at Lake Vostok were twofold: (i) accidental penetration of the lake, and ensuing contamination; (ii) the potential for drilling fluids to percolate from the borehole into the lake through tiny cracks (hydrofracturing) in the deeper ice just above the lake surface. The new information should be duly considered in developing protocols for the environmental stewardship of these unique environments. SCAR considered that Russian scientists were taking new developments on board in an appropriate way in their published plans.

(43) New Zealand pointed out that IP 69 noted that "drilling fluid should be removed from the Vostok borehole" before the hole collided with the edge of the subglacial lake, and that "technological solutions [to] the process of drill fluid removal are currently available, however they require additional improvement". Considering the risks posed by borehole drill fluid, New Zealand asked when such technologies might be sufficiently improved to be planned for and widely implemented, and whether the final CEE that Russia is preparing could contain this information.

(44) Russia gave detailed answers to the above questions. It was noted that there were no objective scientific data on the existence of subglacial lake systems linked to Lake Vostok. Russian and US ground-based and airborne radar surveys of sub-ice structures did not provide any evidence of drainage systems similar to those identified by United Kingdom researchers at Dome Concordia. The soundness of theoretical conclusions made by the Russian designers of the Lake Vostok drilling technology was confirmed by practical activities of Danish experts in northern Greenland in 2003-2004 and German experts at Antarctic Kohnen station (Dronning Maud Land) in 2005. The drill liquid used in both European drilling projects (a kerosene - freon mix) was the same as the one used by Russian scientists at Vostok. Following an unplanned contact of the drill liquid with subglacial water in the Danish and German boreholes, the drill liquid level rose a few dozen meters, which proved the absence of a negative flow from the borehole that characterises large subglacial drainage systems. Pollution studies of the ice-core from refrozen subglacial water that penetrated into the Greenland borehole indicated that only the upper 10 cm contact layer was actually contaminated.

(45) The ice core from the Vostok borehole at 3,623-3,650 meters is still structured as large (up to 1.5 m diameter) crystals with insignificant intercrystal spaces, which largely prevents rapid leakage of the drill liquid towards the water body.

(46) Russia indicated that its future drilling activities at Vostok would be fully consistent with the Environmental Protocol and Russian national legislation. The final CEE for Lake Vostok water sampling would be presented at CEP X.

(47) New Zealand informed the Committee that the joint US/Italian/German/New Zealand Andrill drilling project will go ahead during the 2006/07 season, and provided the Committee with copies of the final CEE.

(48) The Czech Republic made a presentation on IP 99 *The Czech Antarctic Station of Johann Gregor Mendel - from project to realization*. It thanked Institutes from several Parties

for assistance in building the station, and extended an invitation to others to use their research facilities.

(49) ASOC noted that while it was positive that complex projects such as routes, subglacial lake drilling and station construction involved CEEs, it was important to ensure that these were not merely administrative processes, but that they improved environmental protection.

(50) Romania introduced IP 81 *Initial Environmental Evaluation. Law-Racovita Base*.

(51) Italy introduced IP 42 *Initial Environmental Evaluation (IEE): Construction and operation of Enigma Runway for light aircrafts at the Mario Zucchelli Station (Terra Nova Bay, Ross Sea, Antarctica).*

(52) Other Information Papers submitted under this Agenda Item included:

- IP 80 *Methodologies for Assessing Cumulative Impacts: A Progress Report* (New Zealand)
- IP 63 *Beyond Direct Impacts of Multi-Year Maintained Ice Routes Case Study: McMurdo-South Pole Surface Re-Supply Traverse* (ASOC).

Item 7: Area Protection and Management

7a) Management Plans

i. Draft management plans which had been reviewed by an ICG.

(53) The Committee considered six draft management plans for Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) under this category:

- WP 8 *Management Plan for the Larsemann Hills Antarctic Specially Managed Area* (Australia, China, Romania, Russian Federation)
- WP 12 *Antarctic Protected Areas System: Proposal for a New Protected Area at Edmonson Point, Wood Bay, Ross Sea* (Italy)
- WP 21 (rev1) *Proposal of classification as Specially Protected Area n° 46 Port-Martin (Terre-Adelie)* (France)
- WP 24 (rev 1) *Revised Management Plan for Antarctic Specially Protected Area 127 Haswell Island (Haswell Island and Adjacent Emperor Penguin Rookery on Fast Ice)* (Russian Federation)
- WP 26 (rev 1) *Review of the Admiralty Bay Antarctic Specially Managed Area Management Plan (ASMA No. 1)* (Brazil, Peru, United States, Poland, Ecuador)
- WP 30 *Revision of Management Plan for Antarctic Specially Protected Area No. 150 Ardley Island* (Chile).

(54) On behalf of its co-authors, Australia presented WP 8: *Draft Management Plan for a Larsemann Hills Antarctic Specially Managed Area* (Australia, China, Romania, Russia), describing the development of the plan since 1997 and noting the proposed catchment-based approach to managing the area, consistent with its rich lake and freshwater systems.

(55) The draft management plan included a Facilities Zone containing most of the existing station infrastructure, in a group of catchments which drain directly to the sea to the east of Broknes.

(56) China, Russia and Australia had been active in the Larsemann Hills for many years, and in 2006 were joined there and in the authorship of the draft management plan by Romania, which now shares Law-Racovita Base with Australia.

(57) The draft management plan had been available to Members on the CEP Discussion Forum for 9 months after CEP VIII. The draft presented to the Committee under WP 8 addressed the comments received in the consultation period.

(58) Some Members congratulated the authors of the management plan on concluding its protracted development over many years, despite language difficulties and the initial paucity of data for the region.

(59) India reminded the meeting of its intention to establish a permanent station in the Larsemann Hills, recorded in paragraph 170 of the report of CEP VIII and further elaborated in WP 20 *Establishment of a New Indian Research Base in the Larsemann Hills, East Antarctica*, submitted under Agenda Item 15.

(60) Several Members noted their disappointment that the draft management plan developed under the auspices of the CEP would now require considerable modification in the light of India's proposal to locate a station outside the proposed Facilities Zone.

(61) The Chair requested the authors of WP 8 and WP 20 to discuss the potentially serious consequences of the evident inconsistencies between the provisions of the draft management plan and the activities India proposed, and report back to the meeting.

(62) The authors of the management plan reported their regret that they were unable in the time available to adequately consider the significant issues raised by WP 20, particularly in relation to the establishment of a second facilities zone.

(63) Given India's commitment to proceed with a new station, the authors were no longer able to confidently commend the draft management plan in WP 8 to the meeting, without major reconsideration by all stakeholders of all the proposed activities in the Larsemann Hills, and the implications for environmental management measures proposed in the plan.

(64) Australia advised the Committee that the stakeholders had agreed to meet during the July 2006 COMNAP meeting in Hobart to thoroughly discuss India's proposed activities in the Larsemann Hills, and review the draft management plan to address the issues they

raised. The resulting revised draft would be posted to the CEP Discussion Forum by September 2006, so that Members' comments could be sought and addressed. A new final draft would be submitted to CEP X with a view to recommending it to the ATCM for approval.

(65) Following discussion with other Members, Chile agreed to convene an ICG to address matters raised in relation to the draft management plan for ASPA 150, primarily concerning the need to provide an appropriate alternative to the inclusion of a tourist zone within the ASPA. The Committee agreed that the ICG should operate in accordance with the Terms of Reference agreed at CEP VII and detailed in Annex 4 to the CEP VII Final Report.

(66) Noting that the remaining four management plans had been considered by ICGs and revised to take into account comments received, the Committee agreed to refer them to the ATCM for approval. A list of these plans is in Appendix 2.

ii. Draft revised management plans which had not been reviewed by an ICG

(67) The Committee considered three Working Papers containing ASPA management plans under this category:

- WP 9 *Revision of Management Plan for Antarctic Specially Protected Area No. 136 - Clark Peninsula, Budd Coast, Wilkes Land* (Australia)
- WP 29 *Revision of Management Plan for ASPA No. 134 Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula* (Argentina)
- WP 31 *Review of Antarctic Specially Protected Area (ASPA) Nos. 116 and 131* (New Zealand)

(68) The Committee considered that appropriate amendments had been made to these three management plans and agreed to refer them to the ATCM for approval (see Appendix 2).

iii. New draft management plans for protected/managed areas

(69) The Committee considered WP 10 (rev 1) *Draft Antarctic Specially Protected Area (ASPA) Management Plan for Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica* (Australia). Noting that the plan was well prepared and provided for the protection of a species under consideration for listing as a Specially Protected Species under Annex II (southern giant petrel), the Committee agreed that the management plan should be referred to the ATCM for approval without intersessional review (see Appendix 2).

Other matters relating to management plans for protected / managed areas

(70) Germany introduced WP 22 *Possibilities for environmental management of Fildes Peninsula and Ardley Island. Proposal to establish an intersessional contact group* (Brazil,

China, Germany, Republic of Korea, Russian Federation), and proposed establishing an ICG to formalise the discussion process on a management system for the Fildes Peninsula region.

(71) Some Members disagreed with this approach and instead recommended establishing an international working group, similar to the procedure followed during the development of the Deception Island ASMA management plan.

(72) Spain drew the Committee's attention to the excellent results obtained in all scientific, logisitic, tourist and environmental activities under the Deception Island ASMA management plan.

(73) Uruguay welcomed any initiative to build on the present coordination of scientific, environmental management, logistic and tourism activities. It noted that the terms of reference for an organised working group should be broad to allow discussion of all possible alternatives, oriented to focus environmental management of Peninsula Fildes, including Site Guidelines as part of a step-by-step approach.

(74) Consistent with paragraph 90 of the Final Report of ATCM XXVIII, without prejudice to any other effort to expand the protection of the Antarctic environment and dependent and associated ecosystems, and taking into account the view of WP 22/ATCM XXIX that the Fildes Peninsula region (including Fildes Peninsula, Ardley Island and other adjacent smaller islands) needs a multiple use management system, it was agreed that:

- an international working group involving interested Parties is established in order to discuss management approaches, possibly aiming at drafting a management plan for an ASMA covering the Fildes Peninsula region;
- the group will be open for government representatives of interested Parties and experts appointed by observer organizations. The group will be jointly convened by the German representative Ms Antje Neumann and the Chilean representative Ambassador Jorge Berguño. It will primarily work through an intersessional web-based exchange of information, in accordance with the CEP guidelines for ICGs, but it may meet at agreed intervals and venues provided by meetings of the Antarctic Treaty System; and
- the group will take into account the data provided by the German research project "Risk assessment for the Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas", the work of the CEP ICG on the draft revision of the management plan for Ardley Island prepared by Chile, and any other contribution which Parties to the international working group may provide.

(75) The Committee noted that Chile, as a country with large and long-standing installations on King George Island, would host a workshop to prepare the input on this issue for discussion at CEP X.

(76) The Secretariat introduced SP 7 *Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans*, and explained the online register. In particular, it noted that the current static table could be made dynamic, with hyperlinks to digital copies of management plans. The CEP welcomed the work undertaken by the Secretariat and encouraged its further development as suggested in the paper.

(77) The United Kingdom introduced IP 19 *Deception Island Antarctic Specially Managed Area (ASMA) Management Group*, on behalf of Argentina, Chile, Norway, Spain, United Kingdom and the United States. The paper outlined the considerable progress made by the Deception Island Working Group in implementing the Management Plan for ASMA Nº 4, Deception Island. Previously reported conflicts of interest between science and tourism on the island had been largely resolved. The group expressed its concerns about the proliferation of graffiti at HSM Nº 71, Whalers Bay. A new website *(www.deceptionisland.aq)* was launched this year in English and Spanish, describing the most relevant aspects of the Deception Island ASMA, and including a discussion forum for exchanging information.

(78) Spain drew Members' attention to uncontrolled yacht visits to Deception Island which had the potential to disturb remote scientific instruments.

(79) The Russian Federation introduced WP 23 *Proposed improvements to measures designed to prevent environmental damage in Antarctica* and stated that this issue had been discussed in many ATCMs. The Environmental Protocol requires an EIA prior to any activity. Despite that, some operators do not comply with that requirement and carry out their activities with no intervention or control from the Parties. Since this implies a possible risk for the safety of those operators, the Russian Federation proposed a draft Decision for the Secretariat to establish a database containing a list of all permits issued to vessels and aircraft heading for Antartica, the last harbour visited by the vessel, and copies of the EIAs.

(80) The Committee agreed that this issue would be best discussed in the context of the existing requirements for exchange of information in accordance with Resolution 6 (2001). Accordingly, Russia agreed that it would refer the paper to the Legal and Insitutional Working Group.

(81) The United States introduced IP 78 *McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA No. 2) Management Group Report* on behalf of Italy, New Zealand and the United States. A workshop held in New Zealand in April 2006 had discussed issues relating to information exchange, education and outreach, and the results of inspections. During the next year the Management Group aimed to further develop practical management materials and tools, including a GIS and website.

7b) Historic Sites and Monuments

(82) France introduced WP 19 *Proposed registration of the Landing Rock on the list of historical sites and monuments*, noting the historic importance of the rock upon which the French Dumont d'Urville Expedition landed in 1840. The Committee agreed to refer the site to the ATCM for inclusion on the list of Historic Sites and Monuments (see Appendix 3, page 317).

(83) Chile introduced IP 92 *Antarctic Protected Area System: Revised list of historic Sites and Monuments. Measure 3 (2003). Draft Guidelines for its Application*. Chile reminded Members that Measure 3 (2003) consolidated the "List of Historical Monuments Identified and Described by the Proposing Government or Governments". Chile focused on this list as a management tool. The Committee welcomed this helpful paper.

(84) With reference to IP 92, Norway provided information on the International Polar Heritage Committee (IPHC) under ICOMOS and reminded Members that the IPHC could provide useful support in the historic heritage work of the Committee and its Members.

7c) Other Annex V Matters

Marine Protected Areas

(85) CCAMLR introduced WP 7 *The Work of CCAMLR on Marine Protected Areas*, outlining recent progress made by the 2005 CCAMLR Workshop on Marine Protected Areas (MPAs) (Workshop Report attached to WP 7), and recommendations subsequently agreed by CCAMLR-XXIV. It noted the importance of developing a strategic approach and harmonised regime to protect the Antarctic marine environment across the Antarctic Treaty System.

(86) CCAMLR also outlined proposed work to undertake a bioregionalisation of the Southern Ocean, with the aim of providing a scientific basis for identifying representative areas for protection. A CCAMLR Steering Committee had been established to coordinate work towards a workshop in 2007 on this topic. CCAMLR invited the Committee to participate in the work of this Steering Committee towards the proposed workshop, and to initiate the work necessary to undertake a bioregionalisation of the coastal provinces.

(87) The United Kingdom introduced WP 4 *Marine Protected Areas (MPAs): tools for protection and management*, and echoed CCAMLR in highlighting the importance of developing a harmonised approach to protecting the marine environment across the Southern Ocean. It noted that MPAs could encompass a broad range of protection and management tools, including ASPAs and ASMAs, as well as area-based management measures currently used by CCAMLR.

(88) The United Kingdom also introduced IP 3 *Rationale for the development of MPAs in Antarctica*, which contained further background information on the objectives of MPAs, the types of areas that might be considered for protection, and the ways in which these objectives might be achieved using the tools available under the Environmental Protocol and CCAMLR.

(89) The United Kingdom outlined the objectives of undertaking a bioregionalisation of the Southern Ocean, and the importance of such analysis in contributing to ongoing work by the CEP to elaborate a systematic environmental-geographic framework for protected areas. Delegates were referred to IP 6 *Approaches to marine bioregionalisation of the Southern Ocean* (United Kingdom), which provided further information on the

methodologies that might be used in such an analysis, including examples of where this type of work had been undertaken elsewhere, and details on the types of scientific information that may be required.

(90) The Committee thanked CCAMLR and the United Kingdom for their papers and presentations on marine protected areas.

(91) IUCN introduced IP 59 *Marine Protected Areas in the Southern Ocean: a focus on CCAMLR.* Having had a long interest in the use of MPAs, it welcomed this discussion by the Committee and offered to assist future work.

(92) In relation to IP 104 (rev 1) *Notes on Bioregionalisation in Antarctica and the Southern Ocean* (Chile), Argentina acknowledged the efforts of Chile but reserved its position with respect to several aspects of this paper, *inter alia,* the alleged sub-Antarctic character of certain South American islands, and other references.

(93) The United Kingdom supported Chile's concept that any bioregionalisation exercise of the Southern Ocean must duly take into account dependent and associated ecosystems lying north of 60º S. The United Kingdom reserved its position in respect of the Argentine statement.

(94) In discussion, Members highlighted the need to base any further work on MPAs on a sustainable and scientific approach. In addition, risk should be a primary consideration for selecting areas for protection. It was also proposed that the Committee should consider other options for protecting and conserving the marine environment, alongside the development of MPAs.

(95) Further points raised in discussion were the need to draw on experience from, and be consistent with, other areas of the world in developing a bioregionalisation of the Southern Ocean. In this regard, physical data must be used initially, and overlaid with biological information where available. The importance of considering the three-dimensional nature of marine biogeographic patterns was also noted. It was important to increase the availability of scientific information and to develop criteria to support the designation of MPAs.

(96) Further work on MPAs should draw on a wide range of technical and scientific experts from all CEP Members and Observers. It should also link with the Committee's work on Environmental Domains of Antarctica in the terrestrial environment. Consideration should be given to future workshops to provide information on data gaps and direct research.

(97) The Observer from CCAMLR welcomed the discussion of collaboration with SC-CAMLR on this issue, and the participation of the CEP in working towards bioregionalisation in the Southern Ocean and the proposed 2007 workshop.

(98) The Committee accepted in principle the recommendations outlined in WP 4, and agreed to:

- continue its work towards the elaboration of a 'systematic environmental-geographic framework' and give further specific consideration to the inclusion of marine areas within such a framework;
- endorse cooperation with CCAMLR on the protection of the marine environment, and particularly on the development of scientifically based principles and criteria for MPAs;
- welcome the proposal for a CCAMLR workshop on MPAs in 2007, and support the formation of a steering committee with participation from the CEP to work towards this workshop in accordance with the guidelines set out in paragraph 100 below; and
- consider how it might best contribute to the proposed work towards a bioregionalisation of the Antarctic marine environment, by initially focusing on work on the coastal areas.

(99) The Committee agreed that it should engage constructively with CCAMLR on the issue of bioregionalisation and MPAs. The Committee further agreed that, during the intersessional period up to CEP X, the Chair of the CEP should represent the CEP on the Steering Committee.

(100) The following guidelines were agreed to clarify the participation of the CEP Chair on the Steering Committee during this period, and to guide potential further collaboration of the CEP with SC-CAMLR on MPA development. The CEP Chair would:

- consult with CEP Members on the development of the terms of reference for the Steering Committee;
- once the terms of reference have been agreed, consult with CEP Members on the nomination of additional CEP representatives, and a co-chair for the Steering Committee, as appropriate; and
- report back to CEP X.

(101) It was further recognised that, in parallel with the work of the Steering Committee, the CEP should continue to consider its requirements and priorities for developing a scientific approach to the protection of the marine environment. This could include consideration of a range of options and tools including, but not restricted to, MPAs.

Site Guidelines

(102) The United Kingdom introduced WP 1 *Report of the CEP Intersessional Contact Group on Site Guidelines for Visitors to Antarctica*. The ICG was established to review the Site Guidelines adopted under Resolution 5 (2005) and any further Site Guidelines proposals. The terms of reference for the ICG were to consider the content, clarity, consistency and likely effectiveness of Site Guidelines. In addition to a paper review of the Site Guidelines and consideration of their user-friendliness, the United Kingdom led an on-site review to

visit 10 of the 11 sites for which Site Guidelines had been prepared. The review team included representatives from the United Kingdom, Argentina, Australia, Norway, USA and IAATO. The results of the on-site review, together with further comments from ICG participants, were used to prepare revisions of 11 Site Guidelines for consideration by the Committee.

(103) The Committee welcomed the work of the ICG and particularly commended the work undertaken by the on-site review team. It recognised that Site Guidelines were an important tool and complementary to the wider framework of area protection and management. The revised format greatly improved this tool.

(104) The Committee agreed that the 11 Site Guidelines included in WP 1 should be referred to the ATCM for adoption (see Appendix 4).

(105) IAATO introduced IP 66 *Brief Update on the Antarctic Peninsula Landing Site Visits and Site Guidelines*, which reported on sites visited by IAATO members during the 2005-2006 season. The paper also noted that IAATO intended to develop additional Site Guidelines, consistent with the format outlined in WP 1, over the next two years.

(106) The United Kingdom introduced WP 2 *Policy Issues Arising from On-Site Review of Guidelines for Visitor Sites in the Antarctic Peninsula*, which was co-sponsored by Argentina, Australia, Norway and the United States, and prepared in conjunction with IAATO. This paper set out a range of recommendations for consideration by the CEP arising from the on-site review outlined in WP 1.

(107) The review team considered that a range of management tools were appropriate for each site for which Site Guidelines had been prepared, and that these guidelines were suitable for the current level and type of visit to each site. The paper noted, however, that while the Site Guidelines established a daily maximum visitation rate, it was not desirable for any of the sites to have visitation up to these limits every day throughout the austral summer season.

(108) Members endorsed the recommendations in the paper which were relevant to the CEP, noting that the CEP should:

- add Site Guideline issues to its wider consideration of area protection and management and work with SCAR to look at options for further studies on the potential impacts of Antarctic tourism;
- consider options to work with the tourist industry to develop realistic likely future scenarios of Antarctic tourism and review the Site Guidelines if there is any significant change in the current level and type of visits to any of the sites;
- consider establishing a framework for the consideration of all newly proposed Guidelines and for the review of Site Guidelines;
- consider options for systematic and regular monitoring of sites covered by Site Guidelines;

- together with Observers with specific knowledge of visited sites not already covered by visitor guidelines or other forms of site management, undertake site reviews and draft Site Guidelines, using a consistent format, as appropriate;
- encourage those preparing new management plans (ASMAs) to look at those visitor management issues addressed by the Site Guidelines review ICG.
- work with IAATO (and other interested Observers) to consider the issue of training for expedition leaders;
- further consider the effectiveness of the proposed management tools in minimising visitor impacts in the context of ongoing work on monitoring and reporting; and
- give further consideration to other options aimed to ensure effective visitor management at all landing sites in Antarctica.

(109) In welcoming these recommendations, there was particular focus on the importance of ongoing monitoring of visitor sites, and the need for a framework for the review of existing Site Guidelines and consideration of new draft Site Guidelines. In this respect several Members highlighted that the review of Site Guidelines should be considered alongside other area protection and management issues.

(110) SCAR noted that it has been involved in work on cumulative impacts and would be happy to be involved in the scientific aspects of site monitoring.

(111) IAATO confirmed that it would continue to provide details of activities undertaken by its members at each site. The post-visit site report form also provided an opportunity for highlighting potential environmental impacts. IAATO also noted that it was in the process of developing a training and certification scheme for expedition leaders and field guides.

(112) The Committee agreed to address the wider recommendations from WP 2 at CEP X.

(113) France introduced WP 18 *Establishment of "areas of special tourist interest"* which followed on from IP 12 submitted to ATCM XXVIII. The establishment of such tourist areas would help to avoid conflict of site use between scientists and tourists and enable the cumulative impact of humans on the environment to be studied. The paper suggested that establishing basic infrastructure (observation huts, duckboards, light fences, information boards etc) at some main tourist sites may be appropriate. The paper highlighted the importance of keeping tourists' needs in mind when considering appropriate sites for tourism.

(114) Several delegations thanked France for their paper but some raised concerns about creating infrastructure specifically for tourists. One Member suggested that the term "visitor" might be more appropriate than "tourist" because scientists as well as tourists impact on the environment. IAATO valued the discussion but agreed with some Members that infrastructure was not necessary; existing management techniques were sufficient.

(115) ASOC thanked France for an interesting paper and noted that it offered new approaches and perspectives about understanding and managing tourism that were lacking in other analyses.

(116) France noted that the paper had been intended to promote discussion and welcomed other views. Its concern was to minimise the environmental impact of all visitors, scientists and tourists. France agreed to introduce WP 18 to the Tourism Working Group for further discussion.

(117) The United Kingdom presented WP 40 *Site Guidelines for Goudier Island, Port Lockroy* and explained the importance of this historic site. It considered that the adoption of Site Guidelines would assist protection, following several recent examples of difficulties with visits to the area by non IAATO-affiliated yachts. The Committee agreed to refer these Site Guidelines to the ATCM for adoption (see Appendix 4, page 319).

(118) The United States introduced IP 27 *Antarctic Site Inventory: 1994-2006*, which updated results of the Antarctic Site Inventory through February 2006. In twelve seasons, the Inventory had made 704 visits to 103 locations in the Antarctic Peninsula, including repetitive visits to all of the sites most frequently visited by expedition tourists. It was noted that the Inventory regularly censuses the sites that are subject to the Site Guidelines referred to the ATCM for approval, and that continued reporting of the census results would assist the Committee's future review of these Guidelines.

(119) The Committee acknowledged the ongoing importance of long-term monitoring of biological indicators at visited sites, and welcomed the work of Oceanites Inc. Particularly since the revised format of Site Guidelines included less background detail than the original drafts, it remained essential that tour ships carry the Compendium of Antarctic Peninsula Visitor Sites as the key reference for such background information.

(120) Argentina introduced IP 31 *Tourism development in the Antarctic Peninsula: a regional approach*, aiming to contribute to a better understanding of the dynamics of tourist activities in the Antarctic Peninsula during the first half of this decade. A statistical analysis of visits to sites in the four regions of the Antarctic Peninsula was made. The paper highlighted the increasing proportion of tourist landings which occur at sites along the Gerlache Strait. Argentina noted that this kind of analysis would help prioritise sites to be considered for Site Guidelines, and would also provide a basis for assessment of trends over time.

(121) ASOC introduced IP 65 *Managing Antarctic Tourism: A Critical Review of Site-Specific Guidelines*. It noted the problems posed by the *de facto* appropriation of sites for almost exclusive tourism use, which might result in granting tourism the same rights and access given to scientific activities. ASOC noted that, notwithstanding the progress made so far in the development of site-specific guidelines, these guidelines were insufficient to manage tourism since this activity involves more than landing passengers at certain sites.

Systematic Environmental Geographic Framework

(122) New Zealand made a presentation on WP 32 *Systematic Environmental Protection in Antarctica*, which provided an update on progress towards a "systematic environmental

geographic framework" under Annex V. The paper noted that the "proof of concept" classification of Antarctica into 20 Environments (an environmental regionalisation) using Environmental Domains Analysis, as presented at CEP VIII, had been checked and refined. Ice temperature data, information in management plans for ASPAs and ASMAs, and the ice-free digital data layer in SCAR's Antarctic Digital Database had been used for this.

(123) New Zealand thanked the Russian Federation and Australia for contributing data that had helped refine the continental- and fine-scale classification. A fine-scale classification of the Larsemann Hills area would soon be available as another example of how the domains approach can help in small areas of high interest. Analyses to date had shown that a few of the initially classified environments are well represented in ASPAs or ASMAs but several ice-free and ice sheet environments that may face risks from human activities are not.

(124) The Committee expressed warm appreciation for this work by New Zealand. Some Members emphasised how it would help the Committee carry out a variety of environmental protection tasks. The Committee encouraged New Zealand to bring final results to CEP X.

Item 8: Conservation of Antarctic Fauna and Flora

Quarantine and non-native species

(125) The United Kingdom presented WP 5 (rev. 1) *Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area*. The aim of the guidelines was to support early implementation of the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004' (IMO Ballast Water Management Convention). The practical guidelines set out in the Working Paper would reduce the risk of introducing non-native marine species into Antarctica through ballast water. Before CEP IX, the draft guidelines were circulated to COMNAP members and all comments were taken on board. The guidelines were also discussed at the 54th session of the Marine Environment Protection Committee (MEPC) of the IMO and received significant support.

(126) The Committee thanked the United Kingdom for the work and agreed to submit the guidelines to the ATCM for adoption and subsequent submission to the 55th session of the IMO's MEPC for consideration of extending them to all shipping activities (see Appendix 5).

(127) New Zealand introduced WP 13 *Non-native Species in the Antarctic. Report of a Workshop* and the accompanying IP 46 *"Non-native Species in the Antarctic" A Workshop*. The workshop took place in New Zealand from 10 to 12 April 2006 and arose from discussion at CEP VIII of Australia's ATCM XXVIII - WP 28. The key issues outlined in the paper included, but were not limited to, the transfer of species both into and within the Antarctic and the need for practical preventive measures.

(128) Several Members thanked New Zealand for the paper and agreed that the introduction of non-native species to the region requires close consideration, particularly as a warming climate is expected to increase the ability of new introduced species to survive in the Antarctic.

The Chair recalled that similar issues had been recognised as important during the recent CEP Workshop on "Antarctica's Future Environmental Challenges" (WP 42).

(129) The Committee strongly supported the six key recommendations arising from the workshop, including that:

- the issue of non-native species should be given the highest priority consistent with the high environmental standards set out in the Protocol; a "zero tolerance approach";
- the CEP should take the lead on this issue;
- the CEP should give consideration to sharing information with, and seeking advice from, other bodies, notably SCAR, CCAMLR, COMNAP, IAATO, IUCN and other organisations as appropriate (e.g. IMO);
- dedicated research is required to improve understanding of, *inter alia,* existing biological and genetic diversity, species distributions and biogeographic zones, the potential implications of a warming climate and identification of high risk areas and ecosystems; particular research attention needs to be given to microbial communities and marine ecosystems;
- to the extent possible, non-native species issues concerns should be built into existing procedures and practices notably EIA procedures and the protected areas system; and
- a set of comprehensive and standardised guidance and/or procedures should be developed, aimed at all operators in the Antarctic, based on a "Prevention, Surveillance, Response" approach.

(130) Argentina stressed that the zero tolerance approach should be applied consistently, including to fishing vessels. Germany suggested that it would be very helpful to Members if a central database recording new species was created. SCAR underlined the importance of establishing a baseline against which to evaluate new introductions and change over time, noting that the RiSCC program in particular was looking at this issue for terrestrial systems. Australia suggested that the Life Sciences Standing Scientific Group of SCAR might be able to work with SCARMarBIN to assist with increasing understanding of marine species distribution.

(131) New Zealand thanked Members for their helpful feedback and noted that there was a global invasive species database co-ordinated in Auckland by IUCN. New Zealand would make contact with the group to investigate opportunities for using the database to help work related to non-native species in the Antarctic. New Zealand also said that it recognised that not all risks were uniform and that the greatest risks should be identified. The Committee gratefully accepted New Zealand's offer to collaborate with colleagues to continue work on this issue during the intersessional period.

(132) SCAR made reference to the *Code of Conduct for field work: Transfer of alien species to Antarctica and subantarctic islands and between location transfer of species*, which was circulated for the information of the Committee. SCAR offered to review and update these in the intersessional period and submit them for the Committee's consideration at CEP X.

(133) New Zealand undertook to convey the workshop papers and details of the Committee's discussions to CCAMLR.

Specially Protected Species

(134) SCAR introduced WP 38 *Proposal to list Southern Giant Petrel as a Specially Protected Species under Annex II*. The proposal had been prepared to conform to the *Guidelines for CEP Consideration of Proposals for New and Revised Designations of Antarctic Specially Protected Species under Annex II of the Protocol* agreed at CEP VIII and included in the CEP VIII Report at Annex 8.

(135) SCAR noted that the analysis had been undertaken at a global scale and clearly indicated that, on the basis of data available in 2005, the species was classified as Vulnerable, a category agreed by the CEP to justify listing for Special Protection (Resolution 1(2002)). SCAR also noted that at the recent meeting of the ACAP Status and Trends Working Group new population data had been tabled for populations outside the Treaty Area, which could change the level of global threat assessment.

(136) SCAR indicated that these data indicated a substantial increase in the global population, sufficient to require a reappraisal of the IUCN category in the near future. If such a reappraisal changed the status from Vulnerable to Near Threatened, then listing as a Specially Protected Species would not be justified under the procedure agreed by the CEP (Annex 8 of the Final Report of CEP VIII).

(137) During the discussion a wide variety of views were expressed and it was clearly recognised that, even if the level of threat assessment was reduced for the species globally, there would still be great concern over the declines in Antarctic regional populations. Pending the outcome of the anticipated reappraisal, the Committee recommended that the ATCM adopt a Resolution to ensure that colonies of this species are not negatively impacted by those visiting Antarctica.

(138) The Committee urged SCAR to prepare, in the intersessional period, a draft Action Plan to facilitate development of an agreed template before CEP X. SCAR was also urged to prepare proposals for listing other species that fell into the appropriate IUCN status categories, following CEP guidelines and including the direct application of the five risk assessment criteria currently used by IUCN to further clarify the process.

(139) It was recognised that while SCAR had been asked to assess species at a global level there were important concerns for negative population trends in the Antarctic region. Members were invited to consider the issue of giving Specially Protected status to regional populations in the Antarctic to provide a basis for discussion at CEP X.

(140) SCAR presented WP 39 *Proposal to De-list Antarctic Fur Seals as Specially Protected Species*. SCAR said that the fur seals were a conservation success story, noting that the populations within the Antarctic Treaty Area were expected to continue to increase.

(141) New Zealand noted that an assessment of the future vulnerability of fur seals using the up-to-date IUCN criterion E had not been made. The concern was mainly about future risks from incidental fur seal mortality in the krill fishery and impacts of the krill fishery on seal food availability, rather than present or past risks. Good data on these now would enable future risks from trends in seal by-catch and food sources to be monitored and assessed. New Zealand recognised that the issue of delisting fur seals was complex, not least because of past exploitation, future environmental change and public concerns. New Zealand also stressed that protection of the New Zealand fur seal would not in anyway be lessened by a decision to delist Antarctic and Subantarctic fur seals.

(142) Chile agreed with the concerns expressed by New Zealand in consideration of the yet to be published data, which suggest that there could be ecological interactions at the local level in the region of the Antarctic Peninsula.

(143) The Committee considered that the scientific advice outlined in WP 39 was comprehensive, consistent with the Guidelines adopted at CEP VIII, and sufficient to inform a decision to propose delisting. It agreed to recommend that the ATCM remove the two fur seal species from the list of Specially Protected Species under Annex II. In doing so, the Committee emphasised its understanding that the species would continue to receive the comprehensive general protection afforded to all Antarctic seal species under the Protocol.

(144) The Committee requested that SCAR take regular advice from CCAMLR on the level of incidental seal mortality, potential impacts of krill harvest on seal populations, and the development and effectiveness of mitigation measures in the krill fishery.

Marine acoustics

(145) SCAR introduced WP 41 *SCAR Report on Marine Acoustics and the Southern Ocean* which reported on the third SCAR workshop on the subject of marine acoustics in the Southern Ocean. It also introduced IP 98 *Broadband Calibration of Marine Seismic Sources – A Case Study*. SCAR reported that it had used the COMNAP survey of marine acoustic systems employed by National Antarctic Program Vessels (submitted to the CEP as IP 84) and, following discussions with the IWC Secretariat and others, had updated risk assessments undertaken two years earlier. SCAR noted that the recommended mitigation procedures were being used by most permitting authorities, however further data were needed to ensure these procedures were as relevant and effective as possible. In particular further research was needed to establish the natural levels of background noise as well as that emanating from human activities. SCAR noted that conclusions drawn from the use of military sonar were not relevant in the Antarctic Treaty Area.

(146) Spain noted that COMNAP cooperates closely with the HCA/IHO on nautical cartography and had undertaken the survey of acoustic instruments used by national operators

to inform studies into the possible effects of anthropogenic noise on marine mammals in Antarctic waters. Germany suggested that COMNAP also needed to take account of the use by some Parties of fixed acoustic sounding equipment in this study. IAATO stated it had detailed information on its members' vessels' routes and equipment and could contribute this information towards future discussions.

(147) Several delegations thanked SCAR for its important work on this complex subject. The Committee noted the recommendations from the workshop and looked forward to further SCAR updates as more information became available. The Committee agreed to keep this subject on the agenda and discuss it again at CEP X along with the report from the recent IWC workshop on marine acoustics.

(148) Germany informed the Committee of a workshop on the use of seismic devices to be held in Dessau, Germany, 6-8 September 2006, and would provide further information on this subject to Members as soon as possible.

(149) COMNAP agreed with the recommendations in WP 41 and was happy to continue with this work. However COMNAP noted the work was unlikely to be completed before the next CEP.

(150) ASOC introduced IP 61 *An Update on Recent Noise Pollution Issues* which built on previous papers submitted to the ATCM and included recommendations for consideration by the Committee. ASOC commented that SCAR WP 41 and COMNAP IP 84 *Marine Acoustic Systems used by National Antarctic Program Vessels* were helpful contributions to the debate. ASOC reported that other international organisations were working on the management of, as well as research into, marine acoustics.

Other matters relating to the conservation of Antarctic fauna and flora

(151) SCAR introduced WP 37 *Biodiversity in the Antarctic*, which had been submitted to ATCM XXVIII as IP 85 and was submitted to CEP IX at the request of several Parties. SCAR commented that biodiversity encompasses various levels of complexity, from the genetic level to the ecosystem level. The differences in biodiversity between the marine, freshwater and terrestrial environments also vary with both latitude and longitude. SCAR highlighted the need for further surveys, particularly in Eastern Antarctica, to improve understanding of Antarctic biodiversity. The Chair commented that this issue had also been raised at the recent CEP workshop.

(152) Australia highlighted the opportunity the IPY provided to improve knowledge of Antarctic marine biodiversity, noting that data from the Census of Antarctic Marine Life (CAML) should be available shortly after the end of the IPY.

(153) The Committee thanked SCAR for its excellent paper, and requested that SCAR keep the CEP informed of its ongoing efforts to improve knowledge of Antarctic biodiversity.

(154) COMNAP introduced IP 82 *The use of Anti-fouling Biocide Paints by National Antarctic Program Vessels*. COMNAP asked Members to comply with requests for information on biocides in order to increase the understanding of their impact.

(155) Other papers submitted under Agenda Item 8 included:

- IP 44 *Principles underpinning Australia's approach to Antarctic quarantine management* (Australia)
- IP 57 *Antarctic non-native species; what can we learn from the global situation?* (IUCN)
- IP 83 *The Use of Ballast Water in Antarctica* (COMNAP)

Other matters relating to conservation of Antarctic Fauna and Flora

(156) The United Kingdom introduced WP 3 *Wildlife Awareness Information for Aircraft Operations in Antarctica* and IP 2 *Wildlife Awareness Manual for the Antarctic Peninsula, South Shetland and South Orkney Islands*. The United Kingdom developed the Wildlife Awareness Manual to provide practical information on breeding wildlife colony locations for those operating aircraft within the Antarctic Peninsula. The manual helped with the practical implementation of Resolution 2 (2004), which set out *Guidelines for the Operation of Aircraft Near Concentrations of Birds in Antarctica*.

(157) The Committee congratulated the United Kingdom on the work it had undertaken and agreed that the manual would be useful for all air operations, both by governmental and non-government operators. It was also noted that this type of manual would be useful for other regions of Antarctica, and that it would be a useful source of information for the revision and development of protected area management plans.

(158) The Committee supported the recommendations in WP 3, and requested COMNAP to consider:

- options for providing readily accessible information about the location of wildlife concentrations for all areas of Antarctica in which aircraft operations may take place;
- options for how such information could best be presented to aircrew for both fixed and rotating wing aircraft; and
- the practicalities of how such a product might best be developed and updated.

(159) COMNAP confirmed that it was happy to consider these options further. Argentina indicated that it was content to work with COMNAP to look at the possibility of translating COMNAP material into Spanish.

Item 9: Environmental Monitoring and Reporting

(160) France introduced WP 16 *Environmental Monitoring and Reporting. Report of the Intersessional Contact Group*. France commented that there was limited participation in this work, likely due to the broad scope of the terms of reference. The ICG had emphasised the need to have a clear question to help inform the development of a monitoring program. It considered that monitoring could be usefully divided into two categories: (i) operational monitoring; (ii) environmental monitoring. Finally, it may be helpful to consider opportunities to draw on relevant environmental monitoring and reporting work being undertaken in the Arctic.

(161) Members warmly welcomed the report and the efforts by France in coordinating the intersessional work on this complex subject. It was generally agreed that the proposed distinction between operational and environmental monitoring was helpful.

(162) CCAMLR offered to share with the CEP its experience in ecosystem monitoring over the last 20 years, along with existing ecosystem models it had developed. The Committee welcomed this offer.

(163) As host of the international secretariat of the Arctic Monitoring and Assessment Program (AMAP), Norway offered to bring information on AMAP's work to CEP X. Norway also noted that the biodiversity monitoring work of the Conservation of Arctic Fauna and Flora (CAFF) program may provide some guidance to the CEP's ongoing work on similar matters. It noted that both these Arctic bodies had permanent secretariats and funding, which was essential in facilitating their work. Norway suggested that the Committee may wish to consider whether it would be appropriate to establish a permanent group to deal with ongoing environmental monitoring and reporting issues, a suggestion that was also raised during the recent CEP workshop as reflected in WP 42. The Committee welcomed this offer from Norway and looked forward to receiving further information on this matter at a future meeting.

(164) ASOC also thanked France for its work. ASOC looked forward to monitoring methodologies that could be readily applied, since monitoring issues had been discussed for many years, during which time there had been significant changes in Antarctica that posed further challenges.

(165) COMNAP informed the Committee of its Report to ATCM XXIX (submitted under Agenda Item 14; see Annex F, page 397) which reported on its work in relation to environmental monitoring and reporting. COMNAP asked the Committee to consider what operational indicators may assist its future work on this important subject.

(166) SCAR introduced IP 88 *Practical Biological Indicators of Human Impacts in Antarctica* on behalf of COMNAP and SCAR. This paper focused on the outcomes of the meeting in Texas, attended by 44 participants from 14 countries. It focused on biological, rather than chemical or physical, indicators. However, the meeting had concluded that biological data alone would not provide a sound basis for decision-making; they should be used in tandem with chemical and physical indicators for a balanced picture. The importance of long-term datasets in underpinning this monitoring was emphasised.

(167) Members were grateful to receive the summaries of activities outlined in WP 16, IP 114 and IP 88. The Committee recognised the substantial challenges in progressing this important issue and encouraged SCAR and COMNAP to report back to the CEP on further progress with environmental monitoring related work.

(168) SCAR introduced IP 89 *Plans for an Antarctic Climate Assessment – Trends and Impacts* and highlighted the importance of this research. SCAR noted that 3 of its 5 main programmes relate to climate change matters. SCAR reported on work to be undertaken in conjunction with the World Climate Research Programme to assess the impacts of climate change on the Antarctic environment. The report of this work would be subject to peer review before submission to scientific journals. SCAR invited Parties to contribute to the assessment and consider joining the international steering committee to be formed at an international meeting in Hobart in July 2006.

(169) Many Members emphasised the importance of research into the effects of climate change on the Antarctic environment and welcomed SCAR's proposal, and asked SCAR to keep the Committee updated on related research. In particular, these Members suggested that the Committee should consider the completed Assessment once it was published.

(170) Another Member, while strongly supporting scientific research on climate change, did not support SCAR undertaking an Antarctic Climate Assessment and took the view that this was a matter for the Intergovernmental Panel on Climate Change.

(171) New Zealand referred to IP 47 *Conference on Climate Change and Governance, Wellington, March 2006* which had addressed issues of relevance to the present discussions.

(172) ASOC introduced IP 62 *The Antarctic and Climate Change*. ASOC commented on the importance of scientific research in Antarctica in improving understanding of climate change and the need to share knowledge in national and international fora. It noted that IP 62 echoed the vigorous discussions that took place at the CEP workshop, which raised the need to incorporate climate change into conservation and management decisions in Antarctica. ASOC also commented on the need to use the scientific knowledge learned from Antarctica in domestic and international fora to reduce the risk of dangerous climate change.

(173) Other papers submitted under Agenda Item 9 included:

- IP 11 *An Update on the Antarctic Visitor Site Assessment Scheme: VISTA* (New Zealand)
- IP 93 *The SCAR Marine Biodiversity Information Network* (www.SCARMarBIN.be): *A SCAR core IPY project* (Belgium)

Item 10: Inspection Reports

(174) New Zealand introduced WP 33 *A Proposed Checklist for Inspecting Protected Areas in Antarctica* on behalf of New Zealand, the United Kingdom and the United States, and

explained that New Zealand had created a checklist to ensure consistency across inspection sites. New Zealand proposed that the Committee review the draft checklist and consider forwarding it to the ATCM for inclusion in the package available for inspections under Article VII of the Treaty.

(175) Argentina voiced some concerns about duplication between this checklist and the Antarctic Specially Protected Area Visit Report form in the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas* appended to Resolution 2 (1998). It noted that some of the questions included in the draft checklist were not adequately formulated. Australia suggested that the checklist could be a useful framework when reviewing management plans. The United Kingdom agreed and explained that the checklist was not intended as a tool for post visit site reports but was a useful tool to use in the field to ensure consistency. The Committee agreed to revisit the matter at CEP X.

(176) New Zealand introduced WP 34 *Ross Sea Protected Area Inspections 2006* on behalf of New Zealand, United Kingdom and the United States. New Zealand noted that Article 10 of Annex V of the Protocol provides for Parties to make arrangements for inspection visits to ASPAs and ASMAs. However, no formal comprehensive inspections of ASPAs or ASMAs had been conducted. The inspection team had used this opportunity to test the provisions of the Treaty for formal inspection visits.

(177) The process had worked well and the paper contained a list of recommendations resulting from the visits. New Zealand reported that it had already incorporated some of the recommendations with regard to the Cape Bird site (ASPA No. 116) into a review of its Management Plan for the area.

(178) The United Kingdom commented on this excellent example of international cooperation and wished to remind Parties of the need to clearly mark and label all scientific equipment and to remove any equipment promptly when no longer required.

(179) The Committee noted the report and was satisfied with the procedures followed and the outcomes of the inspections. It encouraged the use of the inspection process as a tool for assessing the status of protected areas in Antarctica.

Item 11: Emergency Response and Contingency Planning

(180) France introduced WP 17 *Contingency Planning and Emergency Response* and explained that it was intended to promote discussion. France suggested that an intersessional group be convened to address safety concerns affecting operations and the environment. France suggested that this group should start by considering the historical record with regard to safety and take stock of existing means and contingency plans.

(181) Several Members thanked France for raising this important issue and suggested that since this involved operational as well as environmental safety, COMNAP was best placed to take this work forward. COMNAP offered to submit an IP or WP on the subject to the

Working Group on Operational Matters and the CEP next year. The Committee thanked COMNAP and noted that France had also submitted this Paper under Item 9 to the ATCM.

(182) Ukraine introduced WP 36 *The Replacement of Fuel Tanks at Vernadsky Station* and reported that work would commence in the last quarter of 2006 and should be completed in 2007. Ukraine said that all work would be carried out in accordance with the Environmental Protocol, and that it would evaluate the environmental impact during both the building and operational phases.

(183) The United Kingdom commended Ukraine and said it was pleased to see this work being undertaken as fuel storage at Verdansky had been the subject of recommendations in inspection reports.

(184) Other papers submitted under Agenda Item 11 included:

- IP 34 *Report of the Decommissioning of the Emergency Base (E Base) in Antarctica* (South Africa)
- IP 91 *IAATO Vessel Emergency Contingency Plan. An Update* (IAATO)

Item 12: Waste Management

(185) No Working Papers were presented under this Agenda Item, and the Information Papers below were taken as read:

- IP 21 *Clean-up programme at Indian Scientific Base 'Maitri', Antarctica during Season: 2004-2005* (India)
- IP 45 *Fuel spill management in Antarctica: recent advances in first response and remediation* (Australia)
- IP 60 *Wastewater Treatment in Antarctica: Challenges and Process Improvements* (United States)
- IP 77 *Monitoring the remediation of the Thala Valley waste disposal site at Casey station* (Australia)
- IP 115 *Clean up of abandoned Cape Hallett Station* (New Zealand, United States)

Item 13: Prevention of Marine Pollution

(186) Uruguay introduced IP 51 *Relevamiento de Desechos Marinos en la Costa Septentrional de la Base Científica Antártica Artigas (BCAA) en la Isla Rey Jorge / 25 de Mayo. Contribución a la Efectivización del Anexo IV "Prevención de la Contaminación Marina" del Protocolo*. Uruguay emphasised that it was important to cooperate with CCAMLR on monitoring marine debris, and this was its motivation for IP 51 which contained consolidated data from the last five years of survey at King George Island (Isla 25 de Mayo).

(187) The Committee noted CCAMLR's Resolution to improve the safety of fishing vessels working at high latitudes in ice-covered areas, as well as that organisation's ongoing dialogue with the IMO on the matter.

Item 14: Cooperation with Other Organisations

(188) Argentina introduced WP 28 *Cooperation between the CEP and SC-CAMLR: a synthesis and opportunities for the future*. The paper gave an overview of the cooperation between the Committee and CCAMLR since the establishment of the CEP. The paper also highlighted some specific areas of further possible cooperation and various ways to improve the cooperation between these two bodies.

(189) Several Members and Observers welcomed Argentina's proposal and stressed that it was important to strengthen the cooperation between the CEP and the Scientific Committee of CCAMLR.

(190) ASOC said that the paper underscored the need for greater integration and cooperation between the CEP and SC-CCAMLR to ensure the protection of the Antarctic environment and dependent and associated ecosystems in the Antarctic Treaty Area.

(191) The Committee agreed that, as of CEP X, the report of the CEP observer to SC-CAMLR be presented as a Working Paper to ensure more detailed consideration by the CEP of areas of joint interest and, in this way, to generate a greater level of cooperation. The Committee also agreed that such reports include a list of contacts of those delegates responsible for the working groups of SC-CAMLR, such as the Working Group on Ecosystem Monitoring and Management and the Working Group on Fish Stock Assessment, as well as clear references to those sites where electronic versions of the final reports of the Meetings of SC-CAMLR can be found. This would facilitate and inspire the establishment of informal links between the representatives of the CEP and SC-CAMLR.

(192) The Committee supported the proposal that the SC-CAMLR present, at future meetings of the CEP, syntheses of relevant issues (including baseline information, results, and expected tendencies), like the work of CEMP, fishery status, and marine debris monitoring activities.

(193) The CCAMLR observer offered to provide an overview of SC-CAMLR's work at CEP X. This would focus on CCAMLR's advances in implementing its ecosystem approach to management, ecosystem monitoring and strategic model development. The Committee agreed that such a presentation would be useful.

(194) The Chair, as CEP observer to SC-CAMLR, introduced IP 58 *Report of the CEP Observer to the twenty-fourth meeting of the Scientific Committee to CCAMLR, 24 to 28 October 2005*). The Chair noted the common interests between the work of SC-CAMLR and the CEP. The Chair highlighted the success, *inter alia,* of CCAMLR's measures to mitigate seabird by-catch in the long line fishery, but noted also that, in contrast, the incidental mortality of seabirds in long line fisheries outside the CCAMLR area remained very high with an estimated mortality of at least 13,500 birds, of which more than 10,000 were petrels

or albatrosses. IUU fishing was also having a devastating impact on sea birds. The Chair noted that by-catch mitigation measures similar to CCAMLR in adjacent fisheries would dramatically reduce the global annual mortality of seabirds.

(195) The Committee welcomed the information provided in IP 58 and noted in particular the reports of seabird by-catch and expressed its concern over the continuing high level of seabird by-catch due to illegal, unreported and unregulated fishing, and in long line fisheries adjacent to the Treaty and CCAMLR areas. In light of its discussions on Specially Protected Species the Committee welcomed the success of CCAMLR Members in reducing seabird by-catch through Conservation Measures, and CCAMLR's ongoing dialogue with other organisations.

(196) The Committee recommended that the ATCM urge CCAMLR to work with the Secretariats of adjacent RFMOs in order to share information and best practice on ways to reduce seabird by-catch.

(197) The Committee also requested SC-CAMLR to keep it informed of seabird by-catch data.

(198) Australia introduced IP 67 *Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP): Report to ATCM XXIX & CEP IX from the ACAP Interim Secretariat hosted by the Australian Government*, on behalf of the depositary for the Agreement. The Committee agreed that it was important to maintain close cooperation and contact with ACAP and recalled its decision at CEP VIII to recommend that the ATCM invite the interim secretariat of ACAP to be an Observer at meetings of the CEP. The Committee hoped that ACAP would be able to take up the offer at CEP X.

(199) The Committee also noted ACAP's suggestion to consider designating ASPAs in order to afford protection to breeding populations of southern giant petrels. The Committee noted that it had agreed to recommend that ATCM XXIX adopt the management plan for Hawker Island in the Vestfold Hills in order to protect the breeding populations of southern giant petrels.

(200) The Committee agreed to consider further ASPAs for this purpose at CEP X.

(201) COMNAP reminded Members that its Annual Report to ATCM XXIX (see Annex F, page 397) included updates on a number of COMNAP activities relevant to the work of the CEP, in particular: (1) review of fuel storage and handling guidelines; and (2) accident, incident and near-miss reporting.

(202) Recalling discussions under Agenda Item 8, the Members agreed that a representative of the Scientific Committee of the IWC be invited to present, if possible, a report on the IWC marine acoustics workshop to CEP X.

Item 15: General Matters

(203) India introduced WP 20 *Establishment of a New Indian Research Base in the Larsemann Hills, East Antarctica.* India made a presentation on WP 20, explaining its plans

to establish a new scientific base in the Larsemann Hills and the geological links between the Eastern Ghats in India and this part of Antarctica.

(204) Australia offered to share with India scientific data and information about past and current research in the area. India warmly welcomed this offer.

(205) ASOC thanked India for its presentation and noted that the building of a new base in the Larsemann Hills represented a diminution of the wilderness values of the region. It also noted that the location of the proposed base should be decided after a CEE which had taken into consideration the alternatives.

(206) New Zealand expressed disappointment with the delay in the application of environmental impact assessment to the base proposal.

(207) Germany introduced IP 43 *Start of the Antarctic Discussion Forum of Competent Authorities (DFCA)* on behalf of Germany and the Netherlands. Germany reported that a DFCA had been established in accordance with a decision taken at CEP VIII. Competent authorities were invited to take part in both the forum and a workshop to be held in Berlin later in 2006 to further develop the concept and application of the forum.

(208) Estonia informed the Committee that it hoped to accede to the Protocol early in 2007.

(209) Other papers submitted under Agenda Item 15 included:

- SP 10 *Template for Annual Reporting under Article 17 of the Environment Protocol* (Secretariat)
- IP 1 *Report on the Implementation of the Protocol on Environmental Protection as required by Article 17 of the Protocol* (United Kingdom)
- IP 4 *Annual Report submitted by France on the Protocol on Environmental Protection to the Antarctic Treaty as required by Article 17 of the Protocol. 2006* (France)
- IP 14 *Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (China)
- IP 15 *Informe anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente* (Spain)
- IP 16 *Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty* (Belgium)
- IP 17 *Annual Report Pursuant to the Protocol on Environmental Protection to the Antarctic Treaty* (South Africa)
- IP 26 *Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Italy)
- IP 32 *Chinese Antarctic Environmental Report (2005-2006)* (China)

- IP 36 *Annual report persuant to the Protocol on Environmental Protection to the Antarctic Treaty* (Romania)
- IP 48 *Annual report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Ukraine)
- IP 50 *Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente. Periodo 2005 – 2006* (Uruguay)
- IP 75 *Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2005/2006* (New Zealand)
- IP 100 *Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty Japan 2005/2006 Season* (Japan)
- IP 105 *Annual Report Pusuant to the Protocol on Environmental Protection to the Antarctic Treaty* (Korea, Republic of)

Item 16: Election of Officers

(210) Dr Neil Gilbert was elected to the position of CEP Chair and Dr Tania Brito was elected to the position of Vice-chair. The Committee warmly welcomed these appointments, to take effect from the end of CEP IX. The Committee also expressed its sincere thanks and appreciation to the outgoing Chair, Dr Tony Press, for his excellent guidance of the Committee's work over the last four years.

Item 17: Preparation for CEP X

(211) The Committee adopted the agenda for CEP X in Appendix 6.

Item 18: Adoption of the Report

(212) The Committee adopted the draft Report.

Item 19: Closing of the Meeting

(213) The Chair closed the meeting on Friday 16 June 2006.

ANNEX 1

CEP IX Agenda and Final List of Documents

Paper Nº	Title	Submitted by

Item 1: Opening of the Meeting

Item 2: Adoption of the Agenda

Item 3: Strategic Discussion on the Future of the CEP

WP 42	Antarctica's Future Environmental Challenges. A summary report of the CEP Workshop	United Kingdom, Australia, France
IP 113 (rev 1)	Antarctica's Future Environmental Challenges. Report of the CEP Workshop, Edinburgh, United Kingdom, 9–10 June 2006	United Kingdom, Australia, France

Item 4: Operation of the CEP

WP 11	Committee for Environmental Protection (CEP) Handbook	Australia
SP 10	Template for Annual Reporting under Article 17 of the Environment Protocol	ATS

Item 5: International Polar Year

IP 64	A Glimpse Into The Environmental Legacy Of The International Polar Year 2007-2008	ASOC

Item 6: Environmental Impact Assessment

6a) Draft Comprehensive Environmental Evaluations

WP 25	Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica. Draft Comprehensive Environmental Evaluation (CEE)	Belgium
IP 22	Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica. Draft Comprehensive Environmental Evaluation (CEE)	Belgium
IP 18	Update on the Comprehensive Environmental Evaluation (CEE) for the Proposed Construction and Operation of Halley VI Research Station, Brunt Ice Shelf, Caird Coast, Antarctica	United Kingdom

Paper Nº	Title	Submitted by

6b) Other EIA Matters

SP 8	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2005 and March 31st 2006	ATS
IP 94	Station Sharing in Antarctica	ASOC
IP 68	Russian Studies of the subglacial Lake Vostok in the season of 2005-2006 and Work Plans for the season of 2006-2007	Russian Federation
IP 69	Drilling of Additional 75 m in deep Borehole 5G-1 at Vostok Station. Initial Environmental Evaluation	Russian Federation
IP 99	The Czech Antarctic Station of Johann Gregor Mendel - from project to realization	Czech Republic
IP 81	Initial Environmental Evaluation. Law-Racovita Base	Romania
IP 42	Initial Environmental Evaluation (IEE): Construction and operation of Enigma Runway for light aircrafts at the Mario Zucchelli Station (Terra Nova Bay, Ross Sea, Antarctica)	Italy
IP 80	Methodologies for Assessing Cumulative Impacts: A Progress Report	New Zealand
IP 63	Beyond Direct Impacts of Multi-Year Maintained Ice Routes Case Study: McMurdo-South Pole Surface Re-Supply Traverse	ASOC

Item 7: Area Protection and management Plans

7a) Management Plans

i. Draft management plans which have been reviewed by an intersessional contact group (ICG)

WP 8	Management Plan for the Larsemann Hills Antarctic Specially Managed Area	Australia, China, Romania, Russian Federation
WP 12	Antarctic Protected Areas System: Proposal for a New Protected Area at Edmonson Point, Wood Bay, Ross Sea	Italy
WP 21 (rev 1)	Proposal of classification as Specially Protected Area n° 46 Port-Martin (Terre-Adelie)	France
WP 24 (rev 1)	Management Plan for Antarctic Specially Protected Area 127 Haswell Island (Haswell Island and Adjacent Emperor Penguin Rookery on Fast Ice)	Russian Federation
WP 26 (rev 1)	Review of the Admiralty Bay Antarctic Specially Managed Area Management Plan (ASMA No 1)	Brazil, Peru, United States
WP 30	Revision of Management Plan for Antarctic Specially Protected Area No. 150 Ardley Island	Chile

Paper Nº	Title	Submitted by

ii. Draft revised management plans which have not been reviewed by an ICG

WP 9	Revision of Management Plan for Antarctic Specially Protected Area No. 136 - Clark Peninsula, Budd Coast, Wilkes Land	Australia
WP 29	Revisión del Plan de Gestión de la ZAEP 134 Punta Cierva e Islas Offshore, Costa Danco, Península Antártica	Argentina
WP 31	Review of Antarctic Specially Protected Area (ASPA) Nos. 116 and 131	New Zealand

iii. New draft management plans for protected/managed areas

WP 10 rev 1	Draft Antarctic Specially Protected Area (ASPA) Management Plan for Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica	Australia

Other matters relating to Management Plans for Protected / Managed Areas

WP 22	Possibilities for environmental management of Fildes Peninsula and Ardley Island. Proposal to establish an intersessional contact group	Brazil, China, Germany, Republic of Korea, Russian Federation
SP 7	Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	ATS
IP 19	Deception Island Antarctic Specially Managed Area (ASMA) Management Group	Argentina, Chile, Norway, Spain, United Kingdom, United States
WP 23	Proposed improvements to measures designed to prevent environmental damage in Antarctica	Russian Federation
IP 55	Update on the Draft Management Plan for ASMA ? Amundsen-Scott South Pole Station, South Pole	United States
IP 78	McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA No. 2) Management Group Report	Italy, New Zealand, United States

7b) Historic Sites and Monuments

WP 19	Proposed registration of the Landing Rock on the list of historical sites and monuments	France
IP 92	Antarctic Protected Area System: Revised list of historic Sites and Monuments. Measure 3 (2003)	Chile

Paper Nº	Title	Submitted by

7c) Other Annex V Matters

Marine Protected Areas

WP 7	The work of CCAMLR on Marine Protected Areas	CCAMLR
WP 4	Marine Protected Areas (MPAs) – Tools for Protection and Management	United Kingdom
IP 3	Rationale for the development of Marine Protected Areas (MPAs) in Antarctica	United Kingdom
IP 6	Approaches to Marine Bioregionalisation for the Southern Ocean	United Kingdom
IP 59	Marine Protected Areas in the Southern Ocean: A focus on CCAMLR	IUCN
IP 104 (rev 1)	Notes on Bioregionalisation in Antarctica and the Southern Ocean	Chile

Site Guidelines

WP 1	Report of the CEP Intersessional Contact Group on Site Guidelines for Visitors to Antarctica	United Kingdom
IP 66	Brief Update on the Antarctic Peninsula Landing Site Visits and Site Guidelines	IAATO
WP 2	Policy Issues Arising from On-Site Review of Guidelines for Visitor Sites in the Antarctic Peninsula	United Kingdom
WP 18	Establishment of "areas of special tourist interest"	France
WP 40	Site Guidelines for Goudier Island, Port Lockroy	United Kingdom
IP 27	Antarctic Site Inventory: 1994-2006	United States
IP 31	Tourism development in the Antarctic Peninsula: a regional approach	Argentina
IP 65	Managing Antarctic Tourism: A Critical Review of Site-Specific Guidelines.	ASOC

Systematic Environmental Geographic Framework

WP 32	Systematic Environmental Protection in Antarctica	New Zealand

Item 8: Conservation of Antarctic Flora and Fauna

Quarantine and non-native species

WP 5 (rev 1)	Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area	United Kingdom
WP 13	Non-native Species in the Antarctic. Report of a Workshop	New Zealand
IP 46	"Non-native Species in the Antarctic" A Workshop	New Zealand

Paper Nº	Title	Submitted by

Specially Protected Species

WP 38	Proposal to List Southern Giant Petrel as a Specially Protected Species	SCAR
WP 39	Proposal to De-list Antarctic Fur Seals as Specially Protected Species	SCAR

Marine acoustics

WP 41	SCAR Report on Marine Acoustics and the Southern Ocean	SCAR
IP 98	Broadband Calibration of Marine Seismic Sources – A Case Study	SCAR
IP 61	An Update on Recent Noise Pollution Issues	ASOC
IP 84	Marine Acoustic Systems used by National Antarctic Program Vessels	COMNAP
WP 37	Biodiversity in the Antarctic	SCAR
IP 82	The use of Anti-fouling Biocide Paints by National Antarctic Program Vessels	COMNAP

Other Papers

IP 44	Principles underpinning Australia's approach to Antarctic quarantine management	ASOC
IP 57	Antarctic non-native species; what can we learn from the global situation?	IUCN
IP 85	Land-Based Tourism and the Development of Land-based Tourism Infrastructure in Antarctica: An IAATO Perspective	IAATO
IP 83	The Use of Ballast Water in Antarctica	COMNAP

Item 9: Environmental Monitoring and Reporting

WP 16	Environmental Monitoring and Reporting. Report of the Intersessional Contact Group.	France
IP 88	Practical Biological Indicators of Human Impacts in Antarctica	COMNAP, SCAR
IP 89	Plans for an Antarctic Climate Assessment – Trends and Impacts	SCAR
IP 47	Conference on Climate Change and Governance, Wellington, March 2006	New Zealand
IP 62	The Antarctic and Climate Change	ASOC
IP 11	An Update on the Antarctic Visitor Site Assessment Scheme: VISTA	New Zealand
IP 93	The SCAR Marine Biodiversity Information Network (*www.SCARMarBIN.be*): A SCAR core IPY project	Belgium

Paper Nº	Title	Submitted by

Item 10: Inspection Reports

WP 33	A Proposed Checklist for Inspecting Protected Areas in Antarctica	New Zealand, United Kingdom, United States
WP 34	Ross Sea Protected Area Inspections 2006	New Zealand, United Kingdom, United States

Item 11: Emergency Response and Contingency Planning

WP 17	Contingency Planning and Emergency Response	France
WP 36	The Replacement of Fuel Tanks at Vernadsky Station	Ukraine
IP 34	Report of the Decommissioning of the Emergency Base (E Base) in Antarctica	South Africa
IP 91	IAATO Vessel Emergency Contingency Plan. An Update	IAATO

Item 12: Waste Management

IP 21	Clean-up programme at Indian Scientific Base 'Maitri', Antarctica during Season: 2004-2005	India
IP 45	Fuel spill management in Antarctica: recent advances in first response and remediation	Australia
IP 60	Wastewater Treatment in Antarctica: Challenges and Process Improvements	United States
IP 77	Monitoring the remediation of the Thala Valley waste disposal site at Casey station	Australia
IP 115	Clean up of abandoned Cape Hallett Station	New Zealand, United States

Item 13: Prevention of Marine Pollution

IP 51	Relevamiento de Desechos Marinos en la Costa Septentrional de la Base Científica Antártica Artigas (BCAA) en la Isla Rey Jorge / 25 de Mayo. Contribución a la Efectivización del Anexo IV "Prevención de la Contaminación Marina" del Protocolo.	Uruguay

Paper Nº	Title	Submitted by

Item 14: Cooperation with Other Organisations

WP 28	Cooperation between the CEP and SC-CAMLR: a synthesis and opportunities for the future	Argentina
IP 58	Report of the CEP Observer to the twenty-fourth meeting of the Scientific Committee to CCAMLR, 24 to 28 October 2005	Australia
IP 67	Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP): Report to ATCM XXIX & CEP IX from the ACAP Interim Secretariat hosted by the Australian Government	Australia
IP 114	COMNAP Report to ATCM XXIX	COMNAP

Item 15: General Matters

WP 20	Establishment of a New Indian Research Base in the Larsemann Hills, East Antarctica	India
IP 43	Start of the Antarctic Discussion Forum of Competent Authorities (DFCA)	Germany, Netherlands
IP 1	Report on the Implementation of the Protocol on Environmental Protection as required by Article 17 of the Protocol	United Kingdom
IP 4	Annual Report submitted by France on the Protocol on Environmental Protection to the Antarctic Treaty as required by Article 17 of the Protocol. 2006	France
IP 14	Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	China
IP 15	Informe anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	Spain
IP 16	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Belgium
IP 17	Annual Report Pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	South Africa
IP 26	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Italy
IP 32	Chinese Antarctic Environmental Report (2005-2006)	China
IP 36	Annual report persuant to the Protocol on Environmental Protection to the Antarctic Treaty	Romania
IP 48	Annual report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Ukraine

Paper Nº	Title	Submitted by
IP 50	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente. Periodo 2005 - 2006	Uruguay
IP 75	Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2005/2006	New Zealand
IP 100	Annual Report pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty. Japan 2005/2006 Season	Japan
IP 105	Annual Report Pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Korea, Republic

Item 16: Election of Officers

Item 17: Preparation for CEP X

Item 18: Adoption of the Report

Item 19: Closing of the Meeting

ANNEX 2

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Appendix 1

CEP ADVICE TO ATCM XXIX ON THE DRAFT CEE CONTAINED IN ATCM XXIX-WP 25 & IP 22 (Belgium)

The Committee for Environmental Protection,

With regard to the draft Comprehensive Environmental Evaluation for *the Construction and operation of the new Belgian Research Station, Dronning Maud Land, Antarctica*,

Having fully considered the draft CEE circulated by Belgium on February 10, 2006, as reported in paragraphs 24 - 32 of the CEP IX Final Report, and

Having noted the comments provided by the Parties to Belgium, and the response of Belgium to those comments,

Provides the following advice to the ATCM:

The draft CEE and the process followed by Belgium conform to the requirements of Article 3 of Annex I to the Environmental Protocol;

The draft CEE is thorough, well-structured and comprehensive and provides an appropriate assessment of the impacts of the proposed project;

The information contained in the draft CEE supports its conclusion that the proposed activity will have a more than minor or transitory impact on the Antarctic environment, but that the scientific importance to be gained by the construction and operation of Princess Elisabeth Station, Utsteinen Nunatak, outweighs the impact the station will have on the Antarctic environment and fully justifies the activity proceeding;

The draft CEE demonstrates that Belgium has considered environmental issues as a high priority in the planning of the station, and that the facility will provide a benchmark for environmentally sound operations at isolated locations in Antarctica;

Furthermore, it is clear that there are no existing facilities in this area of Antarctica which could usefully be used by or transferred to Belgium as an alternative to the construction of a new station;

Belgium will address the questions raised by Parties in advance of and during the discussion in the CEP in the the final CEE and in the further development of the project.

The CEP recommends that the ATCM endorse these views.

Appendix 2

LIST OF ASPA AND ASMA MANAGEMENT PLANS REFERRED BY THE CEP TO THE ATCM FOR ADOPTION

Antarctic Specially Protected Areas

ASPA No. 116 New College Valley, Cape Bird, Ross Island

ASPA No. 127 Haswell Island

ASPA No. 131 Canada Glacier, Taylor Valley, Victoria Land

ASPA No. 134 Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula

ASPA No. 136 Clark Peninsula, Budd Coast, Wilkes Land

ASPA No. 165 Edmonson Point, Wood Bay, Ross Sea*

ASPA No. 166 Port Martin, Terre Adelie*

ASPA No. 167 Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica*

Antarctic Specially Managed Areas

ASMA No. 1 Admiralty Bay, King George Island, South Shetland Archipelago*

* New ASPA or ASMA.

Appendix 3

LIST OF HISTORIC SITES AND MONUMENTS REFERRED BY THE CEP TO THE ATCM FOR ADOPTION

Landing Rock, Terre Adélie

Appendix 4

LIST OF SITE GUIDELINES REFERRED BY THE CEP TO THE ATCM FOR ADOPTION

See Annex to Resolution 2, page 245.

Appendix 5

PRACTICAL GUIDELINES FOR BALLAST WATER EXCHANGE IN THE ANTARCTIC TREATY AREA

See Annex to Resolution 3, page 249.

Appendix 6

CEP X PROVISIONAL AGENDA

1. Opening of the Meeting
2. Adoption of the Agenda
3. Strategic Discussions on the Future Work of the CEP
4. Operation of the CEP
5. International Polar Year
6. Environmental Impact Assessment (EIA)
    a. Draft Comprehensive Environmental Evaluations
    b. Other EIA Matters
7. Area Protection and Management Plans
    a. Management Plans
    b. Historic Sites and Monuments
    c. Site Guidelines
    d. Systematic Environmental Geographic Framework
    e. Other Annex V Matters
8. Conservation of Antarctic Flora and Fauna
    a. Quarantine and Non-native Species
    b. Specially Protected Species
    c. Marine Acoustics
    d. Other Annex II Matters
9. Environmental Monitoring and Reporting
10. Inspection Reports
11. Emergency Response and Contingency Planning
12. Waste Management
13. Prevention of Marine Pollution
14. Cooperation with Other Organisations
15. General Matters
16. Election of Officers
17. Preparation for Next Meeting
18. Adoption of the Report
19. Closing of the Meeting

ANNEX F

REPORTS PURSUANT TO RECOMMENDATION XIII-2

Report of the Depositary Government of the Antarctic Treaty and its Protocol (USA) in accordance with Recommendation XIII-2

This report covers events with respect to the Antarctic Treaty and the Protocol on Environmental Protection.

There have been no new accessions to the Antarctic Treaty in the past year. There are forty-five Parties to the Treaty.

There have been no new accessions to the Protocol on Environmental Protection in the past year. There are thirty-two Parties to the Protocol.

The following countries have provided notification that they have designated the persons so noted as Arbitrators in accordance with Article 2(1) of the Schedule to the Protocol on Environmental Protection:

Bulgaria	Mrs. Guenka Beleva	30 July 2004
Chile	Amb. María Teresa Infante	June 2005
	Amb. Jorge Berguño	June 2005
	Dr. Francisco Orrego	June 2005
Greece	Mr. Fransiscos Verros	22 May 2003
	Dr. Emmanuel Gounaris	22 May 2003
	Dr. Vassilios Patronas	22 May 2003
India	Prof. Upendra Baxi	6 October 2004
	Mr. Ajai Saxena	6 October 2004
	Dr. N. Khare	6 October 2004
Japan	Judge Soji Yamamoto	1 May 2003
United States	Professor Daniel Bodansky	22 April 2003
	Mr. David Colson	22 April 2003

Lists of Parties to the Treaty, to the Protocol, and of Recommendations/Measures and their approvals are attached.

Status of
THE ANTARCTIC TREATY

Signed at Washington December 1, 1959
by
Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway,
South Africa, the Union of Soviet Socialist Republics,
the United Kingdom of Great Britain and Northern Ireland,
and the United States of America

State	Date of deposit of instrument of ratification	Date of deposit of instrument of accession	Date of entry into force
Argentina	June 23, 1961		June 23, 1961
Australia	June 23, 1961		June 23, 1961
Austria		Aug. 25, 1987	Aug. 25, 1987
Belgium	July 26, 1960		June 23, 1961
Brazil		May 16, 1975	May 16, 1975
Bulgaria		Sept. 11, 1978	Sept. 11, 1978
Canada		May 4, 1988	May 4, 1988
Chile	June 23, 1961		June 23, 1961
China		June 8, 1983	June 8, 1983
Colombia		Jan. 31, 1989	Jan. 31, 1989
Cuba		Aug. 16, 1984	Aug. 16, 1984
Czech Republic [7]		Jan. 1, 1993	Jan. 1, 1993
Denmark		May 20, 1965	May 20, 1965
Ecuador		Sept. 15, 1987	Sept. 15, 1987
Estonia		May 17, 2001	May 17, 2001
Finland		May 15, 1984	May 15, 1984
France	Sept. 16, l960		June 23, 1961

State	Date of deposit of instrument of ratification	Date of deposit of instrument of accession	Date of entry into force
Germany [1]		Feb. 5, 1979	Feb. 5, 1979
Greece		Jan. 8, 1987	Jan. 8, 1987
Guatemala		July 31, 1991	July 31, 1991
Hungary		Jan. 27, 1984	Jan. 27, 1984
India		Aug. 19, 1983	Aug. 19, 1983
Italy		Mar. 18, 1981	Mar. 18, 1981
Japan	Aug. 4, 1960		June 23, 1961
Korea, DPR of		Jan. 21, 1987	Jan. 21, 1987
Korea, Rep. of		Nov. 28, 1986	Nov. 28, 1986
Netherlands		Mar. 30, 1967 [2]	Mar. 30, 1967
New Zealand	Nov. 1, 1960		June 23, 1961
Norway	Aug. 24, 1960		June 23, 1961
Papua New Guinea		Mar. 16, 1981 [5]	Sept. 16, 1975 [6]
Peru		Apr. 10, 1981	Apr. 10, 1981
Poland		June 8, 1961	June 23, 1961
Romania		Sept. 15, 1971 [3]	Sept. 15, 1971
Russian Federation	Nov. 2, 1960		June 23, 1961
Slovak Republic [7]		Jan. 1, 1993	Jan. 1, 1993
South Africa	June 21, 1960		June 23, 1961
Spain		Mar. 31, 1982	Mar. 31, 1982
Sweden		Apr. 24, 1984	Apr. 24, 1984
Switzerland		Nov. 15, 1990	Nov. 15, 1990

State	Date of deposit of instrument of ratification	Date of deposit of instrument of accession	Date of entry into force
Turkey		Jan. 24, 1996	Jan. 24, 1996
Ukraine		Oct. 28, 1992	Oct. 28, 1992
United Kingdom of Great Britain & Northern Ireland	May 31, 1960		June 23, 1961
United States of America	Aug. 18, 1960		June 23, 1961
Uruguay		Jan. 11, 1980 [4]	Jan. 11, 1980
Venezuela		Mar. 24, 1999	Mar. 24, 1999

l. On October 2, 1990, the Embassy of the Federal Republic of Germany informed the Department of State «that, through the accession of the German Democratic Republic to the Federal Republic of Germany with effect from October 3, 1990, the two German states will unite to form one sovereign state, which, as a contracting party to the Antarctic Treaty, will remain bound by the provisions of the Treaty and subject to those recommendations adopted at the 15 consultative meetings which the Federal Republic of Germany has approved. From the date of German unity, the Federal Republic of Germany will act under the designation of 'Germany' within the framework of the antarctic system....».

Prior to unification, the German Democratic Republic and the Federal Republic of Germany had acceded to the Treaty on November 19, 1974 and February 5, 1979, respectively.

2. The Netherlands accession is for the Kingdom in Europe, Suriname and the Netherlands Antilles; Aruba as a separate entity as of January 1, 1986.

3. The Romanian instrument of accession was accompanied by a note of the Ambassador of the Socialist Republic of Romania, dated September 15, 1971, containing the following statement of the Council of State of the Socialist Republic of Romania:

"The Council of State of the Socialist Republic of Romania states that the provisions of the first paragraph of the article XIII of the Antarctic Treaty are not in accordance with the principle according to which the multilateral treaties whose object and purposes are concerning the international community, as a whole, should be opened for universal participation."

4. The instrument of accession by Uruguay accompanied by a Declaration, a copy of which is attached, with translation.

5. Date of deposit of notification of succession.

6. Date of independence.

7. Effective date of succession. Czechoslovakia deposited an instrument of accession to the Treaty on June 14, 1962. On December 31, 1992, at midnight, Czechoslovakia ceased to exist and was succeeded by two separate and independent states, the Czech Republic and the Slovak Republic.

Department of State,

Washington, May 11, 2006.

PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

Signed at Madrid on October 4, 1991*

State	Date of Signature	Date deposit of Ratification, Acceptance (A) or Approval (AA)	Date deposit of Accession	Date of entry into force	Date Acceptance ANNEX V**	Date of entry into force of Annex V
CONSULTATIVE PARTIES						
Argentina	Oct. 4, 1991	Oct. 28, 1993 [3]		Jan. 14, 1998	Sept. 8, 2000 (A) Aug. 4, 1995 (B)	May 24, 2002
Australia	Oct. 4, 1991	Apr. 6, 1994		Jan. 14, 1998	Apr. 6, 1994 (A) June 7, 1995 (B)	May 24, 2002
Belgium	Oct. 4, 1991	Apr. 26, 1996		Jan. 14, 1998	Apr. 26, 1996 (A) Oct. 23, 2000 (B)	May 24, 2002
Brazil	Oct. 4, 1991	Aug. 15, 1995		Jan. 14, 1998	May 20, 1998 (B)	May 24, 2002
Bulgaria			April 21, 1998	May 21, 1998	May 5, 1999 (AB)	May 24, 2002
Chile	Oct. 4, 1991	Jan. 11, 1995		Jan. 14, 1998	Mar. 25, 1998 (B)	May 24, 2002
China	Oct. 4, 1991	Aug. 2, 1994		Jan. 14, 1998	Jan. 26, 1995 (AB)	May 24, 2002
Ecuador	Oct. 4, 1991	Jan. 4, 1993		Jan. 14, 1998	May 11, 2001 (A) Nov. 15, 2001 (B)	May 24, 2002
Finland	Oct. 4, 1991	Nov. 1, 1996 (A)		Jan. 14, 1998	Nov. 1, 1996 (A) Apr. 2, 1997 (B)	May 24, 2002
France	Oct. 4, 1991	Feb. 5, 1993 (AA)		Jan. 14, 1998	Apr. 26, 1995 (B) Nov. 18, 1998 (A)	May 24, 2002
Germany	Oct. 4, 1991	Nov. 25, 1994		Jan. 14, 1998	Nov. 25, 1994 (A) Sept. 1, 1998 (B)	May 24, 2002
India	July 2, 1992	Apr. 26, 1996		Jan. 14, 1998	May 24, 2002 (B)	May 24, 2002
Italy	Oct. 4, 1991	Mar. 31, 1995		Jan. 14, 1998	May 31, 1995 (A) Feb. 11, 1998 (B)	May 24, 2002
Japan	Sept. 29, 1992	Dec. 15, 1997 (A)		Jan. 14, 1998	Dec. 15, 1997 (AB)	May 24, 2002
Korea, Rep. of	July 2, 1992	Jan. 2, 1996		Jan. 14, 1998	June 5, 1996 (B)	May 24, 2002
Netherlands	Oct. 4, 1991	Apr. 14, 1994 (A) [6]		Jan. 14, 1998	Mar. 18, 1998 (B)	May 24, 2002
New Zealand	Oct. 4, 1991	Dec. 22, 1994		Jan. 14, 1998	Oct. 21, 1992 (B)	May 24, 2002
Norway	Oct. 4, 1991	June 16, 1993		Jan. 14, 1998	Oct. 13, 1993 (B)	May 24, 2002
Peru	Oct. 4, 1991	Mar. 8, 1993		Jan. 14, 1998	Mar. 8, 1993 (A) Mar. 17, 1999 (B)	May 24, 2002
Poland	Oct. 4, 1991	Nov. 1, 1995		Jan. 14, 1998	Sept. 20, 1995 (B)	May 24, 2002
Russian Federation	Oct. 4, 1991	Aug. 6, 1997		Jan. 14, 1998	June 19, 2001 (B)	May 24, 2002
South Africa	Oct. 4, 1991	Aug. 3, 1995		Jan. 14, 1998	June 14, 1995 (B)	May 24, 2002
Spain	Oct. 4, 1991	July 1, 1992		Jan. 14, 1998	Dec. 8, 1993 (A) Feb. 18, 2000 (B)	May 24, 2002
Sweden	Oct. 4, 1991	Mar. 30, 1994		Jan. 14, 1998	Mar. 30, 1994 (A) Apr. 7, 1994 (B)	May 24, 2002
Ukraine			May 25, 2001	June 24, 2001	May 25, 2001 (A)	
United Kingdom	Oct. 4, 1991	Apr. 25, 1995 [5]		Jan. 14, 1998	May 21, 1996 (B)	May 24, 2002
United States	Oct. 4, 1991	Apr. 17, 1997		Jan. 14, 1998	Apr. 17, 1997 (A) May 6, 1998 (B)	May 24, 2002
Uruguay	Oct. 4, 1991	Jan. 11, 1995		Jan. 14, 1998	May 15, 1995 (B)	May 24, 2002

** The following denotes date relating either
to acceptance of Annex V or approval of Recommendation XVI-10
(A) Acceptance of Annex V (B) Approval of Recommendation XVI-10

State	Date of Signature	Ratification Acceptance or Approval	Date deposit of Accession	Date of entry into force	Date Acceptance ANNEX V**	Date of entry into force of Annex V
NON-CONSULTATIVE PARTIES						
Austria	Oct. 4, 1991					
Canada	Oct. 4, 1991	Nov. 13, 2003		Dec. 13, 2003		
Colombia	Oct. 4, 1991					
Cuba						
Czech Rep.[1,2]	Jan. 1, 1993	Aug. 25, 2004 [4]		Sept. 24, 2004		
Denmark	July 2, 1992					
Estonia						
Greece	Oct. 4, 1991	May 23, 1995		Jan. 14, 1998		
Guatemala						
Hungary	Oct. 4, 1991					
Korea, DPR of	Oct. 4, 1991					
Papua New Guinea						
Romania	Oct. 4, 1991	Feb. 3, 2003		Mar. 5, 2003	Feb. 3, 2003	Mar. 5, 2003
Slovak Rep.[1,2]	Jan. 1, 1993					
Switzerland	Oct. 4, 1991					
Turkey						
Venezuela						

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- Signed at Madrid on October 4, 1991; thereafter at Washington until October 3, 1992.

The Protocol will enter into force initially on the thirtieth day following the date of deposit of instruments of ratification, acceptance, approval or accession by all States which were Antarctic Treaty Consultative Parties at the date on which this Protocol was adopted. (Article 23)

**Adopted at Bonn on October 17, 1991 at XVIth Antarctic Consultative Meeting.

1. Signed for Czech & Slovak Federal Republic on Oct. 2, 1992 - Czechoslovakia accepts the jurisdiction of the International Court of Justice and Arbitral Tribunal for the settlement of disputes according to Article 19, paragraph 1. On December 31, 1992, at midnight, Czechoslovakia ceased to exist and was succeeded by two separate and independent states, the Czech Republic and the Slovak Republic.
2. Effective date of succession in respect of signature by Czechoslovakia which is subject to ratification by the Czech Republic and the Slovak Republic.
3. Accompanied by declaration, with informal translation provided by the Embassy of Argentina, which reads as follows: "The Argentine Republic declares that in as much as the Protocol to the Antarctic Treaty on the Protection of the Environment is a Complementary Agreement of the Antarctic Treaty and that its Article 4 fully respects what has been stated in Article IV, Subsection 1, Paragraph A) of said Treaty, none of its stipulations should be interpreted or be applied as affecting its rights, based on legal titles, acts of possession, contiguity and geological continuity in the region South of parallel 60, in which it has proclaimed and maintained its sovereignty."
4. Accompanied by declaration, with informal translation provided by the Embassy of the Czech Republic, which reads as follows: "The Czech Republic accepts the jurisdiction of the International Court of Justice and of the Arbitral Tribunal under Article 19, paragraph 1, of the Protocol on Environmental Protection to the Antarctic Treaty, done at Madrid on October 4, 1991."
5. Ratification on behalf of the United Kingdom of Great Britain and Northern Ireland, the Bailiwick of Jersey, the Bailiwick of Guernsey, the Isle of Man, Anguilla, Bermuda, the British Antarctic Territory, Cayman Islands, Falkland Islands, Montserrat, St. Helena and Dependencies, South Georgia and the South Sandwich Islands, Turks and Caicos Islands and British Virgin Islands.
6. Acceptance is for the Kingdom in Europe. At the time of its acceptance, the Kingdom of the Netherlands stated that it chooses both means for the settlement of disputes mentioned in Article 19, paragraph 1 of the Protocol, i.e. the International Court of Justice and the Arbitral Tribunal. A declaration by the Kingdom of the Netherlands accepting the Protocol for the Netherlands Antilles was deposited on October 27, 2004 with a statement confirming that it chooses both means for the settlement of disputes mentioned in Article 19, paragraph 1 of the Protocol.

Department of State,

Washington, May 11, 2006.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at First Meeting (Canberra 1961)	10 Recommendations adopted at Second Meeting (Buenos Aires 1962)	11 Recommendations adopted at Third Meeting (Brussels 1964)	28 Recommendations adopted at Fourth Meeting (Santiago 1966)*	9 Recommendations adopted at Fifth Meeting (Paris 1968)	15 Recommendations adopted at Sixth Meeting (Tokyo 1970)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	ALL	ALL	ALL (except 10)
Bulgaria (1998)+						
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	ALL	ALL (except 10)
Ecuador (1990)+						
Finland (1989)+						
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL	ALL	ALL (except 8)	ALL (except 16-19)	ALL (except 6)	ALL (except 9)
India (1983)+	ALL	ALL	ALL (except 8***)	ALL (except 18)	ALL	ALL (except 9 & 10)
Italy (1987)+	ALL	ALL	ALL	ALL	ALL	ALL
Japan	ALL	ALL	ALL	ALL	ALL	ALL
Korea, Rep. (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Netherlands (1990)+	ALL (except 11 & 15)	ALL (except 3, 5, 8 & 10)	ALL (except 3, 4, 6 & 9)	ALL(except 20, 25, 26 & 28)	ALL (except 1, 8 & 9)	ALL (except 15)
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+						
U.K.	ALL	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2

*** Accepted as interim guideline

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	9 Recommendations adopted at Seventh Meeting (Wellington 1972)	14 Recommendations adopted at Eighth Meeting (Oslo 1975)	6 Recommendations adopted at Ninth Meeting (London 1977)	9 Recommendations adopted at Tenth Meeting (Washington 1979)	3 Recommendations adopted at Eleventh Meeting (Buenos Aires 1981)	8 Recommendations adopted at Twelfth Meeting (Canberra 1983)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL (except 5)	ALL	ALL	ALL	ALL	ALL
Bulgaria (1998)+						
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL (except 5)	ALL	ALL	ALL	ALL	ALL
Ecuador (1990)+						
Finland (1989)+						
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL (except 5)	ALL (except 2 & 5)	ALL	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL (except 1 & 9)	ALL	ALL
Italy (1987)+	ALL (except 5)	ALL	ALL	ALL (except 1 & 9)		
Japan	ALL	ALL	ALL	ALL	ALL	ALL
Korea, Rep. (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Netherlands (1990)+	ALL	ALL	ALL (except 3)	ALL (except 9)	ALL (except 2)	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+	ALL	ALL	ALL	ALL	ALL	
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL (except 1 & 9)	ALL (except 1)	ALL
Sweden (1988)+						
U.K.	ALL	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2

*** Accepted as interim guideline

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at Thirteenth Meeting (Brussels 1985)	10 Recommendations adopted at Fourteenth Meeting (Rio de Janeiro 1987)	22 Recommendations adopted at Fifteenth Meeting (Paris 1989)	13 Recommendations adopted at Sixteenth Meeting (Bonn 1991)	4 Recommendations adopted at Seventeenth Meeting (Venice 1992)	1 Recommendation adopted at Eighteenth Meeting (Kyoto 1994)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	ALL	ALL	ALL
Bulgaria (1998)+				XVI-10		
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
Ecuador (1990)+				XVI-10		
Finland (1989)+			ALL	ALL	ALL	ALL
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL	ALL	ALL (except 3,8,10,11&22)	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL	ALL	ALL
Italy (1987)+		ALL	ALL	ALL	ALL	ALL
Japan	ALL	ALL	ALL	XVI-10		ALL
Korea, Rep. (1989)+	ALL	ALL	ALL (except 1-11, 16, 18, 19)	ALL (except 12)	ALL (except 1)	
Netherlands (1990)+	ALL	ALL (except 9)	ALL (except 22)	ALL	ALL	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+			ALL (except 22)	ALL (except 13)	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+			ALL	ALL	ALL	ALL
U.K.	ALL	ALL (except 2)	ALL (except 3, 4, 8, 10, 11)	ALL (except 4, 6, 8, & 9)	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL (except 1-4, 10, 11)	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2

*** Accepted as interim guideline

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	5 Measures adopted at Nineteenth Meeting (Seoul 1995)	2 Measures adopted at Twentieth Meeting (Utrecht 1996)	5 Measures adopted at Twenty-First Meeting (Christchurch 1997)	2 Measures adopted at Twenty-Second Meeting (Tromso 1998)	1 Measure adopted at Twenty-Third Meeting (Lima 1999)
	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL				
Bulgaria (1998)+					
Chile	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	ALL
Ecuador (1990)+					
Finland (1989)+	ALL	ALL	ALL	ALL	ALL
France					
Germany (1981)+	ALL	ALL	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL	ALL
Italy (1987)+	ALL	ALL			
Japan					
Korea, Rep. (1989)+	ALL				
Netherlands (1990)+	ALL	ALL	ALL	ALL	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL		
Peru (1989)+	ALL	ALL	ALL	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+	ALL	ALL	ALL	ALL	ALL
U.K.	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL (except 2, 3, 4 and 5)	ALL (except 2)	ALL (except 3, 4 and 5)	ALL (except 2)	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL

"+Year attained Consultative Status. Acceptance by that state required to bring into force Recommendations or Measures of meetings from that Year forward."

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	2 Measures adopted at Twelfth Special Meeting (The Hague 2000)	3 Measures adopted at Twenty-Fourth Meeting (St. Petersburg 2001)	1 Measure adopted at Twenty-Fifth Meeting (Warsaw 2002)	3 Measures adopted at Twenty-Sixth Meeting (Madrid 2003)	4 Measures adopted at Twenty-Seventh Meeting (Cape Town 2004)	5 Measures adopted at Twenty-Eighth Meeting (Stockholm 2005)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Australia	ALL	ALL	ALL	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Belgium	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Brazil (1983)+			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Bulgaria (1998)+			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Chile			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
China (1985)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Ecuador (1990)+			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Finland (1989)+	ALL	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
France			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Germany (1981)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
India (1983)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Italy (1987)+			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Japan			*	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Korea, Rep. (1989)+			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Netherlands (1990)+	ALL	ALL	ALL	ALL	ALL	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
New Zealand	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **, XXVII-4	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Norway		ALL	*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Peru (1989)+	ALL	ALL	ALL	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Poland (1977)+		ALL	*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Russia	ALL	ALL	ALL	XXVI-1, XXVI-2, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
South Africa	ALL	ALL	ALL	ALL	ALL	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Spain (1988)+			*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Sweden (1988)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Ukraine (2004)+					XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
U.K.	ALL (except SATCM XII-2)	ALL (except XXIV-3)	ALL	ALL (except XXVI-1)	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
Uruguay (1985)+	ALL	ALL (except XXIV-1 and XXIV-2)	*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **
U.S.A.	ALL	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **

"+Year attained Consultative Status. Acceptance by that state required to bring into force Recommendations or Measures of meetings from that Year forward."
* Management Plans annexed to this Measure were deemed to have been approved in accordance with Article 6(1) of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty and the Measure not specifying a different approval method.
** Revised and updated List of Historic Sites and Monuments annexed to this Measure was deemed to have been approved in accordance with Article 8(2) of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty and the Measure not specifying a different approval method.

Office of the Assistant Legal Adviser for Treaty Affairs
Department of State
Washington, May 11, 2006.

Report by the head of the Australian Delegation in his capacity as representative of the depositary Government for the Convention on the Conservation of Antarctic Marine Living Resources to the Twenty-ninth Antarctic Treaty Consultative Meeting

1. Australia, as depositary Government to the Convention on the Conservation of Antarctic Marine Living Resources 1980 (the Convention), is pleased to report to the Twenty-ninth Antarctic Treaty Consultative Meeting on the status of the Convention.
2. Australia advises the Antarctic Treaty Parties that, since the Twenty-eighth Antarctic Treaty Consultative Meeting, the Cook Islands deposited its instrument of accession to the Convention in accordance with Article XXIX(1) of the Convention on 20 October 2005. The Convention entered into force for the Cook Islands in accordance with Article XXVIII(2) of the Convention on 19 November 2005.
3. Australia further advises the Antarctic Treaty Parties that, since the Twenty-Eighth Antarctic Treaty Consultative Meeting, no States have become members of the Commission for the Conservation of Antarctic Marine Living Resources, in accordance with Article VII(2) of the Convention.
4. A copy of the status list for the Convention is available to States Parties to the Convention upon request to the Treaties Secretariat of the Department of Foreign Affairs and Trade, conveyed through Australian diplomatic missions, as well as via the internet on the Australian Treaties Database at the following internet address:

   http://www.austlii.edu.au/au/other/dfat/treaty_list/deposity/CCAMLR.html

Report by the Head of the Australian Delegation in his capacity as representative of the depositary Government for the Agreement on the Conservation of Albatrosses and Petrels to the Twenty-ninth Antarctic Treaty Consultative Meeting

1. Australia, as depositary Government to the Agreement on the Conservation of Albatrosses and Petrels (the Agreement), is pleased to report to the Twenty-ninth Antarctic Treaty Consultative Meeting on the status of the Agreement.
2. Australia advises the Antarctic Treaty Parties that, since the report to the Twenty-eighth Antarctic Treaty Consultative Meeting, France on 28 June 2005, Peru on 17 May 2005, and Chile on 13 September 2005 have ratified or acceded to the Agreement in accordance with Article XV of the Agreement.
3. A copy of the status list for the Agreement is available to States Parties to the Agreement upon request to the Treaties Secretariat of the Department of Foreign Affairs and Trade, conveyed through Australian diplomatic missions, as well as via the internet on the Agreement website at the following internet address:

http://www.acap.aq/acap/parties

Report submitted to Antarctic Treaty Consultative Meeting XXIX by the Depositary Government for the Convention for the Conservation of Antarctic Seals in Accordance with Recommendation XIII-2, paragraph 2 (d)

Submitted by the United Kingdom

This report covers events regarding the Convention for the Conservation of Antarctic Seals (CCAS) for the reporting year 1 March 2004 to 28 February 2005.

The summary at Annex A lists all capturing and killing of Antarctic seals by Contracting Parties to CCAS during the reporting period. A report of events in the 2005 – 2006 year will be submitted to ATCM XXX, once the June 2006 deadline for exchange of information has passed.

The United Kingdom would like to remind Contracting Parties to CCAS that the reporting period for the Exchange of Information is from 1 March to the end of February each year. The reporting period was changed to the above dates during the September 1988 Meeting to Review the Operation of the Convention. This is documented in Paragraph 19(a) of the Report of that Meeting.

The Exchange of Information, referred to in Paragraph 6(a) in the Annex to the Convention, should be submitted to other Contracting Parties and to SCAR by 30 June each year, including nil returns. Currently, not all the information required in paragraph 6(a) is being provided. Neither is it being provided on time or with any regularity. The accuracy of the CCAS figures is therefore being compromised.

Since ATCM XXIII there have been no accessions to CCAS. A list of countries which were original signatories to the Convention, and countries which have subsequently acceded is attached to this report (Annex B).

ANNEX A

Synopsis of reporting in accordance with Article 5 and the Annex of the Convention: Capturing and killing of seals during the period 1 March 2004 to 28 February 2005

Contracting Party	Antarctic Seals Captured	Antarctic Seals Killed
Argentina	222[a]	Nil
Australia	Nil	Nil
Belgium	Nil	Nil
Brazil	157[b]	Nil
Canada	Nil	Nil
Chile	917[c]	Nil
France	Nil	Nil
Germany	Nil	Nil
Italy	Nil	Nil
Japan	45[d]	Nil
Norway	Nil	Nil
Poland	Nil	Nil
Russia	Nil	Nil
South Africa	Nil	Nil
United Kingdom	Nil	Nil
United States of America	1100[e]	Nil

[a] All Elephant seals.

[b] 134 Elephant seals, 23 Antarctic Fur seals.

[c] 900 Antarctic Fur seals, 17 Leopard seals.

[d] All Weddell seals.

[e] Up to 600 Weddell and up to 500 Antarctic Fur seals.

All reported capturing was for scientific research.

ANNEX B

Convention for the Conservation of Antarctic Seals (CCAS)

London, 1 June – 31 December 1972

(The Convention entered into force on 11 March 1978)

State	Date of Signature	Date of deposit (Ratification or Acceptance)
Argentina[1]	9 June 1972	7 March 1978
Australia	5 October 1972	1 July 1987
Belgium	9 June 1972	9 February 1978
Chile[1]	28 December 1972	7 February 1980
France[2]	19 December 1972	19 February 1975
Japan	28 December 1972	28 August 1980
Norway	9 June 1972	10 December 1973
Russia[1,2,4]	9 June 1972	8 February 1978
South Africa	9 June 1972	15 August 1972
United Kingdom[2]	9 June 1972	10 September 1974[3]
United States of America[2]	28 June 1972	19 January 1977

Accessions

State	Date of deposit of Instrument of Accession
Brazil	11 February 1991
Canada	4 October 1990
Germany, Federal Republic of	30 September 1987
Italy	2 April 1992
Poland	15 August 1980

[1] Declaration or Reservation.

[2] Objection.

[3] The instrument of ratification included the Channel Islands and the Isle of Man.

[4] Former USSR.

Polar Regions Unit
Foreign and Commonwealth Office
London SW1A 2AH
United Kingdom

The Question of Antarctica in the United Nations General Assembly

Mandated by the Antarctic Treaty Parties at the ATCM XXVIII the then Chair Sweden - in collaboration with the United States as Depositary - prepared and delivered a Statement regarding the Question of Antarctica to the United Nations General Assembly First Committee on 1 November 2005.

The statement was delivered by the Swedish UN Ambassador Anders Lidén. Malaysia also made a statement.

Sweden on 17 March 2006 notified all Treaty Parties about the Statement.

The Committee adopted by consensus a resolution which was later confirmed by the UNGA on 8 December 2005. At that time, Malaysia made another statement.

The Report of the Secretary General on the Question of Antarctica was delivered on 11 August 2005.

The full texts of the documents in question are attached to IP 107 *The UN and the Question of Antarctica*.

Report by the CCAMLR Observer at the Twenty-ninth Antarctic Treaty Consultative Meeting

Introduction

1. During its Twenty-Fourth Meeting (24 October to 4 November 2005), the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) addressed a number of routine matters as well as some specific issues. The most notable of the latter included:
   - CCAMLR fisheries in 2004/2005;
   - Illegal, unreported and unregulated (IUU) fishing;
   - CCAMLR Catch Documentation Scheme (CDS);
   - Ecosystem management and decision-making;
   - By-catch in longline and trawl fisheries;
   - Marine Protected Areas;
   - CCAMLR Symposium; and
   - Co-operation with international organizations including the ATCM, FAO, IWC and various fisheries bodies.
2. The Meeting was particularly noteworthy since it is the first time that CCAMLR has met in its own building. The new CCAMLR Headquarters building was officially opened on 24 October 2005 by the Australian Minister for Foreign Affairs, Hon Alexander Downer, MP.
3. Information on CCAMLR's deliberation on the issues identified in paragraph (1), and others is provided below. Emphasis is given to items that are particularly relevant to the ATCM-29 and CEP IX agendas. An overall summary of important discussions and decisions from CCAMLR-XXIV is provided in Appendix I along with references to the meeting's report paragraphs.

CCAMLR Fisheries in 2004/2005

4. Fisheries in the CAMLR Convention Area during 2004/2005 (December 2004 to November 2005) targeted Patagonian and Antarctic Toothfish (*Dissostichus eleginoides* and *D. mawsoni*), mackerel icefish (*Champsocephalus gunnari*) and krill (*Euphausia superba*). Catch information is available in the *CCAMLR Statistical Bulletin* (*http://www.ccamlr.org/pu/e/e_pubs/sb/vol17.htm*).
5. The reported finfish catch was 16,071 tonnes in 2004/2005, compared to 13,698 tonnes in 2003/2004. *Dissostichus* spp. (Toothfish) catches, predominantly from longlining, accounted for 14,074 tonnes in 2004/2005, compared to 15,877 tonnes in the previous season. It is believed that, in addition to reported catches, some 3,023 tonnes of *Dissostichus* spp were taken as a result of IUU fishing in the Convention Area during 2004/2005, compared with 2,622 tonnes in 2003/2004. The total global catch for Toothfish in 2004/05 was estimated at 25,605 tonnes. For further discussion on IUU fishing, please refer to paragraphs 11-15 below.
6. The reported krill catch in 2004/2005 was 127,035 tonnes compared with 118,166 tonnes in the previous season. This represented a slight increase in the relatively stable range of krill catches (80,000 to 100,000 tonnes) since 1992/93. The projected krill catch for the 2005/06 season may be as high as 245,000 tonnes, an effective doubling of the 2004/05 level.
7. CCAMLR expressly noted that the krill fishery's pattern of operation is changing in respect of the countries involved, the composition of its products and the harvesting methods being

used. It anticipated that these developments may require changes to the way that krill fisheries data are reported, the type of data collected and the level of observer coverage.

8. The Commission adopted conservation measures for all fisheries being conducted in the 2005/06 season, as well as general measures for regulating fishing activities and reporting fisheries information from the Convention Area. These are published in the Schedule of Conservation Measures in Force – 2005/2006, available from the CCAMLR Secretariat or on the website: *http://www.ccamlr.org.*

9. In addition to the Catch Documentation Scheme (CDS) for *Dissostichus* spp. and measures to manage specific fisheries directly (e.g. the setting of catch limits and other conditions affecting fishing), CCAMLR conservation and management measures include:

   - The CCAMLR System of Inspection:
   - Scheme to Promote Compliance by both Contracting and Non-Contracting Party Vessels, including provisions for compiling a list of IUU vessels;
   - Licensing and Inspection Obligations of Contracting Parties with regard to their Flag Vessels Operating in the Convention Area;
   - Procedures for port inspections of vessels carrying Toothfish;
   - Marking of Fishing Vessels and Fishing Gear;
   - Automated Satellite-Linked Vessel Monitoring Systems (VMS); and
   - Various Resolutions – (a) "Banning Driftnet Fishing in the Convention Area", (b) "Harvesting Species Occurring Both Within and Outside the Convention Area", (c) "Implementation of the CDS by Acceding States and Non-Contracting Parties", (d) "Use of Ports not Implementing the CDS", (e) "Application of VMS in the CDS", (f) "Use of VMS and Other Measures to Verify CDS Catch Data for Areas Outside the Convention Area, Especially FAO Statistical Area 51"; (g) "Harvesting of *D. eleginoides* in Areas Outside Coastal State Jurisdiction Adjacent to the Convention Area in FAO Statistical Areas 51 and 57", (h) "Vessels Flying Flags of Non-Compliance", (i) "Ice Strengthening Standards in High Latitude Fisheries" and (j) a "Non-Contracting Party Co-Operation Programme".

10. Items (i) and (j) in the previous paragraph will be discussed later (in paragraphs 56 and 43 respectively).

Illegal, Unregulated and Unreported (IUU) Fishing

11. IUU fishing for Patagonian Toothfish (*Dissostichus eleginoides*) in the Convention Area has been a major issue for the Commission since 1997. CCAMLR attaches high priority to eliminating such fishing. It continues to develop and implement an integrated suite of administrative, political and enforcement-related measures aimed at addressing the problem and at ensuring that fishing in areas adjacent to the Convention Area is consistent with international best practice.

12. CCAMLR annually reviews Members' implementation of enforcement-related measures and evaluates their performance in combating IUU fishing. The Commission noted that observed declines in IUU fishing over the past couple of years could be attributable to the impact of improved monitoring, control and surveillance (MCS), improved information from CDS-based monitoring of world catches, uncertainties attached to the current IUU catch estimation procedures and a general reduction in toothfish catches globally. In respect of the IUU estimation procedures it currently uses, CCAMLR has embarked on developing a new standardized methodology, and it is anticipated that some advances will be made in

this regard during 2006. It is also refining some of its guidelines in respect of various definitions used during implementation of the CDS.

13. CCAMLR's efforts to combat IUU fishing have taken place against a background of ongoing and vigorous action by individual CCAMLR Contracting Parties in areas under their national jurisdiction.

14. To facilitate exchange of relevant information amongst its Members, CCAMLR maintains a database on vessels known to have fished in contravention of CCAMLR Conservation Measures. Such vessels are incorporated annually into an official "CCAMLR IUU Vessel List". CCAMLR has also set up a centralized, satellite-based vessel monitoring system (c-VMS) in the CCAMLR Secretariat to monitor the movements of fishing vessels in the Convention Area.

15. CCAMLR interacts with various other international and regional fisheries organisations, especially those with responsibility for waters adjacent to the Convention Area, in the exchange of information on issues such as IUU fishing, seabird incidental mortality and other matters relevant to CCAMLR (see paragraphs 45-48 below).

CCAMLR Catch Documentation Scheme (CDS)

16. Implementation of the CDS (which became binding on CCAMLR Members on 7 May 2000) for *Dissostichus* spp. continues to improve. The Scheme is designed to track Toothfish landings and trade flows from catches in the Convention Area and, where possible, adjacent waters. It strives to identify the origin of Toothfish entering the markets of all Parties to the Scheme to facilitate determination of whether catches in the Convention Area are taken in a manner consistent with CCAMLR's Conservation Measures.

17. The various resolutions identified in paragraph 9 strive to improve the CDS's broader application while CCAMLR also continues to co-operate with CITES in the Scheme's global implementation. CDS information on Toothfish landings for the period 2000-2005 is available in the CCAMLR Statistical Bulletin (paragraph 4 above).

18. CCAMLR has agreed to - (a) take further action in respect of Port, Export and Import States (such as Singapore, the People's Republic of China [including the Special Administrative Region of Hong Kong]) which do not fully implement the CDS, (b) invite countries as appropriate to consider implementing the new World Trade Organization's (WTO) harmonized tariff codes for toothfish prior to its official entry into force in January 2007, and (c) encourage certain CCAMLR Members (particularly Australia, France and the USA) to work inter-sessionally to improve application of the current electronically-based CDS (E-CDS).

Ecosystem Management and Decision-Making

19. The CCAMLR Ecosystem Monitoring Programme (CEMP) collects long-term data on various Antarctic marine ecosystem components as well as the environment. Such data are used to provide annual assessments of ecosystem status. Advice on long-term ecosystem trends and changes can then be incorporated into management advice.

20. The CCAMLR scientific community is exploring ways in which ecosystem advice can be formally incorporated into management decisions. In this respect, the Commission endorsed:

    - Plans for an Australian krill biomass survey of Division 58.4.2 in early 2006 to provide up-dated estimates of krill biomass in the region;
    - A change in the model for estimating krill acoustic target strength as well as a consequent workshop to revise current krill precautionary catch limits if necessary, and

- A second Workshop on Management Procedures to be held in 2006 to develop advice on evaluating options for subdividing the krill precautionary catch-limit in Area 48 (west Atlantic) between Small-Scale Management Units (SSMUs).

By-Catch in Longline and Trawl Fisheries

21. CCAMLR leads the world in implementing measures to reduce seabird mortality during longline fishing. Many CCAMLR measures, particularly the provisions of Conservation Measure 25-03 (first adopted in 1992 as Conservation Measure 29), have been incorporated into the *FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries* (IPOA-Seabirds) adopted by the FAO *Committee on Fisheries* (COFI). Furthermore, a number of CCAMLR Members have developed and implemented national plans of action to address seabird by-catch issues.
22. Compliance with CCAMLR seabird by-catch mitigation measures has improved to such an extent that the catch levels in regulated fisheries in the Convention Area are extremely low. However, the levels attributable to the IUU fishery remain a cause for concern. In addition, many important bird species breeding in the Convention Area (particularly albatrosses and petrels) remain affected by high levels of mortality associated with longline fishing globally.
23. CCAMLR Resolution 22/XXIII remains as an important initiative in efforts to reduce incidental mortality of CAMLR Convention Area seabirds in adjacent areas. To this extent, CCAMLR welcomed participation by the Interim-Secretariat of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) at CCAMLR-XXIV and CCAMLR was an observer at various ACAP meetings during late 2004 and 2005.
24. CCAMLR continues to exchange information with other international fisheries and conservation organizations on the prevention of fisheries-induced seabird by-catch and the state of Antarctic seabird populations, as well as its experience with mitigation and associated conservation action. In particular, CCAMLR seeks advice from other regional fisheries bodies (particularly those managing tuna, such as ICCAT, IOTC and CCSBT) in an effort to secure more global information on incidental by-catch of seabird species breeding in the Convention Area. It should be noted that, unlike CCAMLR, many of these organizations do not mandate the collection of seabird by-catch data.
25. CCAMLR also monitors the by-catch of marine mammals in both trawl and longline fisheries and remains concerned with the need to monitor fish by-catch in directed fisheries, particularly in respect of improving current knowledge and setting ecologically sustainable catch limits for the species being impacted. It has urged that (a) relevant finfish by-catch information be submitted in conformity with CCAMLR by-catch data protocols, (b) additional information be collected to establish levels of risk for by-catch species such as the grenadier *Macrouris whitsoni* and the ray *Amblyraja georgiana* in the Ross Sea, and (c) whenever possible information should be provided on fishing methods and strategies likely to reduce by-catch of non-target species.

Marine Protected Areas (MPAS)

26. Following its Workshop on Marine Protected Areas in August 2006, CCAMLR has agreed that there is a need to develop a strategic approach and harmonized regime to protect the Antarctic marine environment across the Antarctic Treaty System (ATS). It has also recognized that this may require some clarification of the roles and responsibilities of the ATCM and CCAMLR in managing different kinds of human activity in the region. This requires good collaboration at both technical and policy levels, particularly to develop further the MPA concept for the Southern Ocean as a whole. Therefore, CCAMLR has

recognized the need for extensive dialogue with key elements of the Treaty System (CEP and the ATCM) as well as SCAR, SCOR and other inter-governmental and non-governmental organisations.

27. CCAMLR-XXIV recognized that:

- MPAs exhibit considerable potential for furthering the Convention's objectives in terms of providing protection for ecosystem processes, habitats and biodiversity as well as in protecting particular species (including specific populations and/or life history stages);
- Under IUCN categorization, the CAMLR Convention Area qualifies as Category IV (Habitat/Species Management Area), being a protected area managed primarily for conservation through management intervention to ensure habitat maintenance and/or to meet the requirements of particular species;
- Conservation outcomes consistent with the objectives of CAMLR Convention Article II not only include maintaining biological diversity, but also the maintenance of ecosystem processes;
- Consideration should be given to the need, *inter alia,* to protect representative areas, scientific areas and areas potentially vulnerable to human impacts in order to mitigate such impacts and/or to ensure marine living resource sustainability consistent with the rational use provisions of CAMLR Convention Article II, and
- The process of establishing a CCAMLR protected areas system also needs to account for satisfactory fishery outcomes consistent with the rational use provisions of Article II.

28. CCAMLR noted that the types of scientific information necessary to develop MPAs require:

- Consideration of various key tasks in developing a system of protected areas to assist CCAMLR in achieving its broader conservation objectives. Such tasks comprise:
  - Broad-scale bio-regionalization of the Southern Ocean;
  - Fine-scale subdivision of bio-geographic provinces, which may include spatial characteristic hierarchies and features within regions, with particular attention being given to areas identified in bio-regionalization;
  - Identification of areas that might be used to achieve conservation objectives, and
  - Determination of areas requiring interim protection;
- Such tasks should initially comprise a desktop study;
- The types of data required have been listed by the CCAMLR Scientific Committee.

29. CCAMLR-XXIV therefore identified a work plan for developing a system of marine protected areas, including:

- Holding another workshop to advise on bio-regionalization of the Southern Ocean, including, where possible, advice on small-scale delineation of provinces and potential areas for protection to further CCAMLR's conservation objectives;
- Establishing a Steering Committee with representation from both SC-CAMLR and the CEP. An important task of this Steering Committee will be to involve appropriate experts from outside SC-CAMLR and the CEP that possess relevant data or expertise, and
- Inviting the CEP to initiate the work necessary to develop bio-regionalization of the coastal provinces, as an extension of its terrestrial bio-regionalization work, while SC-CAMLR undertakes initial work to delineate oceanic provinces.

30. The outcomes of the above work will be the focus of a second CCAMLR MPA Workshop in 2007.

CCAMLR Symposium

31. Since 1996, CCAMLR has held strategic discussions on how the Convention's objectives can be addressed effectively. Due to time constraints, these discussions have generally been limited. Therefore, with CCAMLR's support, Chile and Australia hosted the "*CCAMLR Symposium*" in Valdivia during early April 2005.
32. The *Symposium's* major purpose was to provide for open and frank discussion of CCAMLR's future, particularly with respect to:

    - CCAMLR's relationships with other ATS elements;
    - Developing a policy for co-operations with other Regional Fisheries Bodies (RFBs), and
    - Enabling CCAMLR to focus more effectively on IUU fishing.

33. It was structured to address – (a) past CCAMLR developments, (b) current and future CCAMLR challenges, (c) Antarctic marine living resources conservation, (d) managing harvesting in the CCAMLR Area, (e) CCAMLR as part of the ATS, (f) CCAMLR in the wider international context, and (g) options for the future.
34. A number of issues emanating from the Symposium discussions were identified for special consideration. In particular, CCAMLR requested its Standing Committee on Implementation and Compliance (SCIC) to develop advice on:

    - CCAMLR's inspection and surveillance capability (including multi-lateral co-operative compliance and enforcement consistent with UNCLOS);
    - Commissioning a legal review of high-seas enforcement capacity in respect of possible action consistent with UNCLOS against Non-CCAMLR Contracting Parties (NCPs) and Third-Party States fishing in the Convention Area, and
    - Developing co-operative diplomatic tools to encourage compliance with CCAMLR measures.

35. It also requested SC-CAMLR to consider the following as part of its 2005/2006 inter-sessional programme of work:

    - Ways to achieve broader conservation objectives for the marine environment including:
    - Establishing MPAs as appropriate;
    - Addressing the UN's call for action on destructive fishing practices;
    - Links between CEMP monitoring and decision-making processes.
    - Understanding trends in, and responses to, climate change (including consideration of establishing ecosystem reference areas).

36. In respect of paragraph (35) above, CCAMLR emphasized that SC-CAMLR should, where appropriate, review *inter alia*:

    - Ways to achieve a robust management framework for CCAMLR high-seas fisheries, including the use of multi-year management plans and revision of the principles and procedures for new and exploratory fisheries.

37. For 2006, it was noted that the following work should provide opportunities for including relevant consideration and work on SC-CAMLR's agenda:

    - Initial discussion of a workplan for developing a system of MPAs;

- Use of CEMP data to help develop models for evaluating subdivision of the Area 48 precautionary krill catch limit between SSMUs, and
- Advice on future interactions with RFMOs and other fisheries organisations on incidental seabird mortality/by-catch.

38. As a whole, CCAMLR recommended that Contracting Parties should try and engage (consistent with prevailing international law) other organisations where appropriate through:

- Utilizing CAMLR Convention Article XXIII to forge links with RFMOs and other organisations and agreements to further CCAMLR's objectives;
- CCAMLR Parties, collectively and individually, making strategic efforts in RFMOs and other organisations to further such objectives, and
- Developing an annual review paper for its observers to present at other international meetings.

39. The CCAMLR Secretariat was requested to:

- Identify opportunities for improving CCAMLR involvement with relevant long-standing RFMOs and other fisheries organisations, and likewise provide CCAMLR with relevant information on newly-formed RFMOs and other fisheries organisations, and
- Prepare an annual review paper for CCAMLR observers to international meetings.

Co-Operation with Non-CCAMLR Contracting Parties (NCPs)

40. In implementing the CDS, CCAMLR has done much to encourage, and liaise with, various NCPs considered to have an interest in CCAMLR's work or in the resources that it manages. Such encouragement has included inviting NCPs to attend and participate in CCAMLR meetings. CCAMLR is also actively engaged in improving dialogue with NCPs as a way to address their potential involvement in IUU fishing undermining CCAMLR's measures.

41. Participation by NCPs in CCAMLR's work does not only promote transparency, it has also enabled the Commission's membership and work to expand. A clear example of the former was evidenced by the Cook Islands lodging an instrument of accession to the Convention in October 2005 following that of Mauritius in 2004.

42. CCAMLR continues to consider ways that Developing States can be encouraged to participate in its work and be invited to the Commission's meetings. The sourcing of financial support from a special UN system trust fund for this purpose is being actively pursued.

43. A significant development at CCAMLR-XXIV aimed at broadening CCAMLR's work was manifest by adoption of Resolution 24/XXIV (Appendix II). This provides a framework for CCAMLR Members to explore ways to improve, and prioritize, global implementation of the CAMLR Convention, to sponsor participation by relevant States and build capacity for such participation where necessary.

CCAMLR Education Package

44. CCAMLR development of a web-based educational package has been finalized.

Co-Operation with Other International Organizations

45. CCAMLR continues to urge its Members to accept and ratify a number of relevant international agreements. It also co-operates closely with various RFMOs (CCSBT, IATTC, ICCAT, IOTC, IWC, NAFO, NEAFC, SEAFO and WCPFC) to further its work and co-ordinate its conservation efforts.

46. CCAMLR continues to provide input into the FAO's work on IUU fishing and its various plans-of-action (particularly in relation to both IUU fishing and seabird by-catch during longlining). It also encourages all its Members to participate in this work to ensure that a comprehensive and integrated international approach to such problems is developed.

47. FAO is one of several international organizations explicitly referred to in CAMLR Convention Article XXIII as an organization with which CCAMLR should cooperate. Both the Commission and Scientific Committee continue to enjoy a productive cooperative working relationship with FAO in general and with several FAO-sponsored activities such as the work of the Coordinating Working Party on Fisheries Statistics (CWP), the Sub-Committee on Fish Trade, the Regional Fisheries Bodies Network and the Fisheries Resources Monitoring System (FIRMS) in particular.

48. The Twenty-Sixth Meeting of COFI-26 in March 2005 addressed a number of topics of interest to CCAMLR. In particular, the Commission noted an FAO Inter-Ministerial Declaration on IUU Fishing and growing international interest in some form of review of Regional Fisheries Management Organisations (RFMOs). The CCAMLR Symposium (paragraphs 31-38 above) was seen by the Commission as a useful example of how such a review could work in practice.

Co-Operation with the ATCM

49. Once again, CCAMLR expressed satisfaction with the growing co-operation between CCAMLR and the ATCM/CEP

50. CCAMLR-XXIV endorsed approval of two management plans containing marine areas forwarded to it by the ATCM. The plans concerned involve the ASPA at Edmonson Point and the ASMA at Admiralty Bay (ASMA-1). The record of the decision has been forwarded to the Treaty Secretariat. A summary of various ASPA and ASMA considered by CCAMLR to date is provided in Appendix III.

51. The CCAMLR Secretariat continues to provide assistance to the Antarctic Treaty Secretariat in Buenos Aires, and the Treaty Secretariat's Executive Secretary again visited the CCAMLR Secretariat during CCAMLR-XXIV. The CCAMLR Administration and Finance Officer also visited the Treaty Secretariat in mid-March 2006.

52. CCAMLR continues to be interested in the CEP's current debate on Antarctic Protected Species and development of a State of Antarctic Environment Reporting. It is also interested in the CEP's planned 2006 workshop to address strategic issues important to the Committee's current and future functioning.

53. CCAMLR-XXIV took note of ATCM Decision 8 (2005) as this may relate to the use of heavy fuel oil by fishing vessels operating in the Treaty Area.

54. It also noted that ATCM Decision 9 (2005) on protected areas relates to CCAMLR's competency and responsibilities in respect of MPAs as well as other areas. CCAMLR's Advisory Subgroup on Protected Areas continues its work on developing advice on draft ASPA and ASMA management plans submitted to CCAMLR by the ATCM. On-going CCAMLR work in relation to MPAs per se has already been discussed in paragraphs 36-39 above.

55. A key aspect in the above regard is that CCAMLR has recognized that one of its primary aims is to facilitate establishing a harmonized regime for the protection of of the Antarctic marine environment across the Antarctic Treaty System (ATS). This would require clarification of the roles and responsibilities of the ATCM and CCAMLR in respect of managing different human activities in the Treaty Area.

56. Following the ATCM deliberations on application of the new Liability Annex to fishing vessels, CCAMLR noted that these may be of direct interest in respect of CCAMLR Resolution 20/XXII ("Ice-Strengthening Standard in High-Latitude Fisheries"). The Commission has agreed that a formal letter communicating this Resolution should be forwarded to the IMO requesting advice on its planned actions in respect of fishing vessels. Information is also being sought from various societies on their ice-strengthening classification schemes.

57. In May 2005, the CCAMLR Secretariat contacted the CEP seeking information on the monitoring of marine debris as well as on methods for analyzing debris accumulation rates. CCAMLR noted at its 2005 meeting that no response had been received from the CEP and the matter was again raised with the CEP Chair just prior to submission of this report. CCAMLR has also provided the CEP inter-sessional contact group with information on its methods for collecting marine debris information as well as a list of current CCAMLR marine debris survey programs.

58. Finally, and following discussion at ATCM-27, attention is drawn to CCAMLR Resolution 24/XXIV ("Non-Contracting Party Cooperation Enhancement Program") (paragraphs 9 and 43, Appendix II).

APPENDIX I

CCAMLR-XXIV REPORT REFERENCES FOR TOPICS & DECISIONS

The CCAMLR-XXIV report is downloadable from:

(*http://www.ccamlr.org/pu/e/e_pubs/cr/05/toc.htm*).

Topics & Decisions		CCAMLR-XXIV Paragraphs
1. General Fishery Matters		
1.1	Fisheries Catches in 2004/05	4.21, 4.34, 4.42
1.3	Fishery Regulation Measures 2005/06	11.34-11.39, 11.41-11.74, 11.91-11.94
1.3	New Krill Fishing Technique	4.23-4.24, 4.30
1.4	Environment Protection Measures	10.22, 11.40, 11.98-11.101
1.5	Scheme International Scientific Observation	9.1 - 9.8
2. IUU fishing in Convention Area		
2.1	Current Levels	8.1, 12.1-12.3
2.2	Development IUU Estimation Methods	8.3-8.6, 12.6
2.3	IUU Vessel Lists	8.7
3.4	Cooperation Non-Contracting Parties	7.1, 7.3-7.4, 7.1(i), 8.8-8.17
3. General Compliance		
3.1	Compliance with Conservation Measures	6.7
3.2	Revised Compliance-Related measures	11.6-11.15
3.3	Development Compliance Evaluation Procedure	6.9-6.11
4. Ecosystem Approach to Fisheries Management		
4.1	Krill Ecosystem-Based Feedback Management	4.5-4.10, 4.19
4.2	Incidental Mortality Seabirds/Marine Mammals	5.1, 5.8-5.10
4.3	Marine Debris Impact on biota	5.11-5.15
4.4	Joint CCAMLR-IWC Workshop	4.81
4.5	IPY Activities	4.76-4.78
5. Marine Protected Areas		
5.1	Objectives & Definitions	4.12
5.2	Preparation 2007 Workshop	4.13-4.18
6. Cooperation Antarctic Treaty System		
6.1	ATCM	4.11, 4.13(ii), 14.1-14.23, 14.30
6.1	CEP	4.13(ii), 4.17(ii-iii), 5.15
6.3	SCAR	4.13(ii), 14.26-14.29
7. Cooperation Other International Organisations		
7.1	UN/FAO	8.16, 8.18, 15.1-15.2, 15.25-15.27
7.2	FRMOs	5.8-5.10, 15.1-15.6
7.3	CCSBT	15.20-15.23
7.4	IWC	4.81
7.5	ACAP	15.11
7.6	ICSU/WMO	4.76-4.78
7.7	IUCN	15.7-15.9
7.8	WCO	7.1(ii)
7.9	ASOC	15.12
7.10	CITES	15.19
7.11	COLTO	15.13
7.12	MARPOL	11.101

APPENDIX II

CCAMLR RESOLUTION 24/XXIV

Non-Contracting Party Cooperation Enhancement Program

The Commission,

Concerned that illegal, unreported and unregulated (IUU) fishing vessels are increasingly conducting their fishing operations under flags of non-Contracting Parties and moving their catches through ports of non-Contracting Parties to circumvent CCAMLR rules,

Believing that this problem should be addressed by encouraging cooperation between non-Contracting Parties and CCAMLR through:

1. The exchange of information about IUU fishing with CCAMLR;
2. Participation in key CCAMLR initiatives, such as the Catch Documentation Scheme for *Dissostichus* spp. (CDS), through implementation of conservation measures;
3. Acceding to the Convention and/or joining the Commission, as appropriate,

Noting that some non-Contracting Party States wish to cooperate with CCAMLR but lack the capacity to do so,

Recognizing that a structured program of technical cooperation to build the capacity of key non-Contracting Party Flag and Port States would assist them to combat IUU fishing activity and trade and support wider implementation of CCAMLR conservation measures,

Noting that for its cooperation enhancement program to be effective Members will need to commit, support and be willing to deliver technical assistance, advice and training to non-Contracting Parties,

1. Recommends that Members consider, at CCAMLR-XXV, the development of a cooperation enhancement program with the following attributes:
   (i) A focus on technical cooperation;
   (ii) Flexibility to tailor cooperation to meet the needs of both the Commission and the recipient State on a case-by-case basis;
   (iii) A partnership model involving the CCAMLR Secretariat, experienced CCAMLR Member(s) as sponsors and the recipient States(s);
   (iv) Matching of sponsors and recipients based on expertise, historical relationships between States and proximity;
   (v) Central repository of information and training material by the CCAMLR Secretariat.
2. Decides to establish a priority list of States that may benefit from technical cooperation and develop clear criteria for investing in cooperation enhancement.

APPENDIX III

ASPA & ASMA's with marine components considered by CCAMLR

Protected Area No.	Name	Marine Area	Proponent	Approved By
ASPA-121 (SSSI-1)	Cape Royds, Ross Island	~ 3 km^{2*}	USA	CCAMLR-XXI (2002)
ASPA-145 (SSSI-27)	Port Foster, Deception Island, South Shetland Islands	1.9 km^{2*}	Chile	CCAMLR-XXIII (2004)
ASPA-149 (SSSI-32)	Cape Shirreff and San Telmo Island, Livingston Island, South Shetlands Islands	4.5 km^{2*}	Chile USA	CCAMLR-XXIII (2004)
ASPA-152 (SSSI-35)	Western Bransfield Strait,off Low Island, South Shetland Islands	900 km^{2*}	USA	CCAMLR-XXI (2002)
ASPA-153 (SSSI-36)	Eastern Dallmann Bay off Brabant Island, Palmer Archipelago	580 km^{2*}	USA	CCAMLR-XXI (2002)
ASPA-161	Terra Nova Bay, Ross Sea	~ 30 km^{2*}	Italy	CCAMLR-XXI (2002)
ASPA-165	Edmonson Point, Wood Bay, Victoria Land, Ross Sea	2.58 km^2	Italy	CCAMLR-XXIV (2005)
ASMA-1	Admiralty Bay, King George Is, South Shetland Islands	120 km^{2*}	Brazil, Poland	CCAMLR-XXIV (2005)

* From SC-CAMLR-XXIII/BG/28 (Revised August 2005) CCAMLR MPA Workshop (2005).

Other Protected Areas with Marine Component of Potential Interest to CCAMLR [ATCM Decision 4 (1998)]

Protected Area No.	Name	Marine Area	Proponent	Expiry of Designation
ASPA-144 (SSSI-26)	'Chile Bay' (Discovery Bay), Greenwich Island, South Shetland Islands	0.8 km^2	Chile	31.12.2005
ASPA-146 (SSSI-28)	South Bay, Doumer Island, Palmer Archipelago	1.0 km^2	Chile	31.12.2005
ASPA-151 (SSSI-34)	Lions Rump, King George Island, South Shetland Islands	<0.5 km^{2*}	Poland	Designated for indefinite period

* From SC-CAMLR-XXIII/BG/28 (Revised August 2005) CCAMLR MPA Workshop (2005).

SCAR Report to XXIX ATCM

Executive Summary

SCAR's main objective is to initiate, develop, and co-ordinate high quality international scientific research in the Antarctic region, and on the role of the Antarctic region in the Earth system. SCAR coordinates scientific research that adds value to ongoing national research by enabling national researchers to tackle issues of pan-Antarctic scale and having global reach.

SCAR also provides objective and independent scientific advice on issues affecting the management of the environment to the Antarctic Treaty Consultative Meetings; the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR); and the Advisory Committee of the Agreement on Conservation of Albatrosses and Petrels (ACAP).

Through 2005, SCAR focused on ramping up the effort on its five major new Scientific Research Programmes (SRPs) that will be SCAR's scientific flagships for the next 5–10 years, and published implementation plans for each. They are:

- Antarctica and the Global Climate System (AGCS), a study of the modern ocean-atmosphere-ice system;
- Antarctic Climate Evolution (ACE), a study of climate change over the past 34 million years since glaciation began;
- Evolution and Biodiversity in the Antarctic (EBA), a study of the response of life to change;
- Subglacial Antarctic Lake Exploration (SALE), a study of the chemistry and biology of lakes long-buried beneath the ice sheet;
- Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR), a study of the response of the Earth's outer atmosphere to the changing impact of the solar wind at both poles.

Particular highlights include the following: A major warming was revealed in the Antarctic winter troposphere that is larger than any previously identified regional tropospheric warming on Earth. The largest warming is close to 5 km above sea level where temperatures increased at a rate of 0.5 – 0.7° C per decade over the last 30 years.

Numerical models show that the shift in the Southern hemisphere Annular Mode in the atmosphere in recent decades was probably due to anthropogenic forcing. This is the first evidence that the rapid warming on the Antarctic Peninsula is man-made.

SCAR launched the Census of Antarctic Marine Life **(**CAML), a major five-year international project to investigate Antarctica's marine biodiversity. A science plan was published and expeditions are now being organised for the International Polar Year.

The inventory of sub-glacial lakes increased to over 140, showing that they are widespread beneath Antarctica's ice sheets. These lakes are believed to help to control ice flow.

Around 750 abstracts have been submitted for SCAR's second Open Science Conference (Hobart, 12–14 July 2006), which should be very well attended.

SCAR programmes were prominent among the proposals endorsed by the Steering Committee for the International Polar Year.

1. WHAT IS SCAR?

SCAR, the Scientific Committee on Antarctic Research, is the principal non-governmental organization responsible for the international coordination of scientific research taking place in the Antarctic region. SCAR is an Interdisciplinary Body of the International Council for Science (ICSU). ICSU began coordinating scientific research in Antarctica during the International Geophysical Year of 1957-58, and formed SCAR in 1958 to continue the work. The need for such coordination has grown as the role of Antarctica in the global system has become apparent, and continues unabated as we approach the International Polar Year of 2007-2008, in which SCAR is playing a leading role, and which is led jointly by ICSU and the World Meteorological Organisation (WMO).

SCAR's 28 Full and 4 Associate Members are national scientific organizations associated with ICSU. These Members include representatives of all countries that are Parties to the Antarctic Treaty. SCAR's Members also include 7 of ICSU's Scientific Unions, which link SCAR to a wide range of ICSU's activities. SCAR continues to grow: after the XXIX SCAR meeting, in July 2006, there are likely to be 30 Full, 4 Associate and 8 Union Members.

SCAR aims to improve understanding of the nature of Antarctica, the role of Antarctica in the Earth System, and the effects of global change on Antarctica. Its primary objectives are:

- to initiate, develop, and co-ordinate high quality international scientific research in the Antarctic region, and on the role of the Antarctic region in the Earth system;
- to provide objective and independent scientific advice to the Antarctic Treaty Consultative Meetings and other organizations on issues of science and conservation affecting the management of Antarctica and the Southern Ocean.

To meet these objectives, SCAR carries out a comprehensive programme of coordinated scientific research that adds value to ongoing national research by enabling national researchers - often having sub-regional remits - to work together on major issues of pan-Antarctic scale and having global reach. In addition it provides independent scientific advice, as an official Observer, to three intergovernmental bodies having responsibilities in the Antarctic region:

(i) the Antarctic Treaty System through the Antarctic Treaty Consultative Meeting (ATCM) and the Committee for Environmental Protection (CEP);

(ii) the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR), and its Scientific Committee;

(iii) the Advisory Committee of the Agreement on Conservation of Albatrosses and Petrels (ACAP).

To ensure an effective link between the SCAR Executive Committee and its subsidiary bodies, the Executive Committee met with the Chief Officers of its Standing Scientific Groups for the Physical Sciences, Life Sciences and Geosciences, its Standing Committee for the Antarctic Treaty System, and its Joint SCAR/COMNAP Committee on Antarctic Data Management (JCADM) in Sofia, Bulgaria, in July 2005. The Chief Officers of the SSGs and of JCADM then met in Amsterdam in November 2005 with the Principal Investigators of SCAR's five Scientific Research Programmes (SRPs) in order to ensure that these different groups are all working in harmony with one another, and to ensure that opportunities are grasped for interdisciplinary work. The Amsterdam meeting focused on areas of common interest, such as how climate change will affect the Antarctic over the coming century.

2. SCAR SCIENCE

2.1 MAJOR SCIENTIFIC RESEARCH PROGRAMMES

Through 2005, SCAR has focused on ramping up the effort on its five major new Scientific Research Programmes (SRPs) that will be SCAR's scientific flagships for the next 5–10 years. They are:

- Antarctica and the Global Climate System (AGCS), a study of the modern ocean-atmosphere-ice system;
- Antarctic Climate Evolution (ACE), a study of climate change over the past 34 million years since glaciation began;
- Evolution and Biodiversity in the Antarctic (EBA), a study of the response of life to change;
- Subglacial Antarctic Lake Exploration (SALE), a study of the chemistry and biology of lakes long-buried beneath the ice sheet;
- Interhemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR), a study of how the Earth's outer atmosphere responds to the changing impact of the solar wind at both poles.

Each has developed an Implementation Plan, now available from the SCAR web site. Main advances in the 5 programmes during the year are described below.

SCAR Members are encouraged to adapt their national research programmes so as to make these pan-Antarctic programmes fully effective. Scientists from all SCAR Member countries are encouraged to nominate themselves as participants (contact the Principal Investigator or send an enquiry to *info@scar.org*).

2.1.1 Antarctica in the Global Climate System (AGCS)

2.1.1.1 Progress

In order to improve confidence in the outputs of numerical forecasts of climate change for the next 100 years, AGCS is investigating the linkages between the climate of the Antarctic and the rest of the Earth system over the past 10,000 years, with particular reference to the behaviour of and interactions between the atmospheric, oceanic and cryospheric elements of the climate system. AGCS will use existing deep and shallow ice cores, satellite data, the output of global and regional coupled atmosphere-ocean climate models, and in-situ meteorological and oceanic data to understand how signals of tropical and mid-latitude climate variability reach the Antarctic, and high latitude climate signals are exported northwards. It will work closely with the ACE programme, which is looking deeper into the past. Results will be of use to governments in developing national inputs to the Intergovernmental Panel on Climate Change and the UN Framework Convention on Climate Change, and national responses to climate change.

In 2005 AGCS finalised and published its implementation plan. A Scientific Steering Committee was appointed (Appendix 4) and formally started work on the programme. An AGCS website is at: *http://www.antarctica.ac.uk/met/SCAR_ssg_ps/AGCS.htm*. AGCS and its various sub-programmes are co-sponsored by SCAR and the World Climate Research programme (WCRP).

A number of advances have been made. For instance, analysis of the balloon-launched radiosonde data for the Antarctic extending back into the 1950s has revealed a major warming of the Antarctic winter troposphere that is larger than any previously identified regional tropospheric warming on Earth. The largest warming has been close to 5 km above sea level where temperatures have increased at a rate of 0.5 – 0.7° C per decade over the last 30 years.

The variability of the linkages between the El Niño-Southern Oscillation (ENSO) and the climate of the high latitude South Pacific has been investigated. It was found that there was a sharp annual contrast between the 1980s and the 1990s, with the link in the 1990s being significantly amplified. The analysis reveals that the 1980s spring season teleconnection is weak due to the interference between the Pacific South American pattern associated with ENSO, and the Southern Hemisphere Annular Mode (SAM), the primary mode of variability of the extra-tropical Southern Hemisphere atmosphere.

Recent trends in Antarctic snow accumulation have been investigated using the Polar MM5 climate model. Averaged over the continent the annual trends are small and not statistically different from zero, suggesting that recent Antarctic snowfall changes do not mitigate current sea level rise.

The west Antarctic Peninsula (WAP) is known to be undergoing one of the most rapid atmospheric warmings of any region in the world, with temperatures having risen by nearly 3ºC in the past 50 years. A putative long-term decrease in sea ice in the adjacent Bellingshausen Sea has been linked to this, but little understanding has been obtained of the ocean's role in these climatic changes. To address this, a long series of oceanographic measurements (temperature and salinity) was compiled and examined, covering the second half of the twentieth century. It was found that a very significant warming had occurred in the summertime surface and near-surface ocean, of greater than 1ºC – this greatly exceeds general rates of warming of the world ocean, and is one of the most rapid regional ocean warmings noted to date. Concurrent with this warming was a surface-intensified summer salinification, of greater than 0.25. Although initially counter-intuitive, this salinification is linked to oceanic mixed layer processes driven by the reduction in sea ice, and is related to the summertime-only availability of data. These profound changes reveal the strong atmosphere/ocean/ice coupling involved in the climate change at the WAP. The ocean changes are both positive feedbacks, acting to promote further decreases in ice production and further atmospheric warming. They also suggest that the initial cause of the climate change here may be atmospheric in origin, rather than oceanic as some people have suggested. The changes are also very significant for the operation of the marine ecosystem, which has evolved to be unusually sensitive to changes in ocean temperature. If the warming progresses further, population and species level losses might be expected.

Since the mid-1960s rapid regional summer warming has occurred on the east coast of the northern Antarctic Peninsula, with near-surface temperatures increasing by more than 2°C. This warming has contributed significantly to the collapse of the northern sections of the Larsen Ice Shelf. The explanation is that over the last few decades the Southern hemisphere Annular Mode (SAM) has shifted into its positive phase, with surface pressures dropping over the Antarctic and rising in mid-latitudes. This has caused the westerly winds to increase, especially in summer. Faced with these stronger westerlies the barrier effect of the Antarctic Peninsula has been reduced. As a result, the ice shelves on the eastern side of the peninsula have become less isolated from relatively warm, maritime air masses. Model experiments showed that the observed shift in the SAM to its positive phases in recent decades was larger than anything occurring in long simulations of the present climate. For that reason the shift is thought to be predominantly a response to anthropogenic forcing, and provides the first evidence that increasing levels of greenhouse gases contributed, at least in part, to the observed rapid warming on the Antarctic Peninsula.

2.1.1.2 Plans

AGCS will be holding a workshop in Cambridge, UK during April 2006 to consider the strength and weaknesses of the high latitude elements of the atmospheric re-analysis data sets, which are proving a very powerful tool for the investigation of recent climate change. Together with ACE and EBA, AGCS will be holding a one day workshop on "Atmospheric, Oceanic, Cryospheric and Biological Variability Over Decadal to Millennial Timescales" in Hobart just prior to the SCAR Open Science Conference in July 2006.

2.1.2 Antarctic Climate Evolution (ACE)

2.1.2.1 Progress

ACE is coordinating the integration of enhanced geological data and improved Antarctic palaeoclimate models for a series of time periods from the onset of glaciation around the Eocene-Oligocene boundary 34 Ma ago, to the last glacial maximum (LGM) 20,000 years ago, in order to establish the origin of the present configuration of the ice sheet. ACE results will be of use to governments in developing national inputs to the Intergovernmental Panel on Climate Change and the UN Framework Convention on Climate Change, and national responses to climate change.

In 2005 ACE finalised and published its implementation plan and formally started work on the programme. A Steering Committee was appointed, with cross membership to the SALE Steering Committee (Appendix 4). The ACE website is at *http://www.ace.scar.org/*.

The ACE community has been active for a couple of years now, organising meetings and publishing the results of its workshops in the international literature. In 2005 ACE contributed to advances in pan-Antarctic science by publishing two special issues of international journals:

- Florindo, F., Harwood, D.M., Wilson, G.S. (Editors), 2005. Long-term changes in southern high-latitude ice sheets and climate: the Cenozoic history. *Global and Planetary Change*, vol. 45, 1-264.
- Barrett, P., Florindo, F. and Cooper, A. (Editors) (2006). "Antarctic Climate Evolution - view from the margin". *Palaeogeography, Palaeoclimatology, Palaeoecology*, vol 231, 1-252.

This last special issue is the third in three years on the theme of Antarctic Climate Evolution. It covers a wide range of techniques and timeframes concerning the evolution of the Antarctic continental margin, ranging from detailed sedimentary analyses of the Cape Roberts Project core to numerical modelling investigations of ice sheet growth and decay.

ACE has continued to influence progress by organising four international meetings during the year:

(i) August 2005, Aberystwyth, Wales: "Glacial Sedimentary Processes and Products". This international symposium was co-sponsored by ACE, the International Association of Sedimentologists, the International Commission of Snow and Ice, the International Glaciological Society, the International Quaternary Association, the Quaternary Research Association and the British Geological Survey. It promoted dialogue between researchers in the fields of contemporary glacial processes, glacial sedimentology and ice sheet modellers in order to advance these fields in an integrated way. Contributions were given from researchers working on all aspects of glacial sedimentary processes and products in glaciomarine, glaciolacustrine and terrestrial settings, from Archaean times to the present day. A special volume will appear in 2006 as a consequence of this meeting.

(ii) August 2005, Calgary, Canada: "The Last Great Global Warming: Proxy Reconstructions and Modelling the Pliocene Climate". This was a full session of an Earth Systems Science symposium. The Pliocene was the most recent period in Earth history in which temperatures were as warm as they are likely to be within the next century. The session addressed fundamental questions concerning our knowledge of the Pliocene world, including what the biota, climate and environments of the Pliocene were really like, why the climate was warmer than today, how variable Pliocene climate was, and the relevance of the period to the ongoing climate change debate.

(iii) September 2005, Spoleto, Italy: "Cenozoic onshore and offshore stratigraphic record from the East Antarctic margin: recent results and future directions". This international workshop, co-sponsored by ACE with Italian and Spanish organisations, aimed to discuss the state of knowledge of Cenozoic East Antarctic ice sheet evolution, and to define future research activities in the east

Antarctic margin, including activities related to proposed Wilkes Land drilling by the Integrated Ocean Drilling Program (IODP).

(iv) December 2005, Fall AGU, San Francisco: "Antarctic Ice Sheet Evolution from the Last Glacial Maximum to the Holocene: Recent Advances From Modeling and Field Investigations". This special session brought together modellers and field-based researchers to discuss new results that advance our understanding of the development of the ice sheet during this period and the implications for regional and global climate change and ice retreat. The session attracted contributions from: terrestrial glacial geology and geomorphology; marine geology and geophysics; high-resolution ice core and sediment core records; glaciological modelling; climate modelling; and modelling of glacial isostatic adjustment.

An ACE proposal has been selected as a core proposal of the International Polar Year.

ACE is committed to supporting the next generation of Antarctic researchers. It supplies funds to allow students and young (post-doctoral) scientists to attend ACE-related workshops.

2.1.2.2 Plans

ACE has a comprehensive plan of activities for 2006. The plan can be seen in the Implementation Plan on the ACE website. In addition, ACE plans the following activities:

(i) a special session of the 2006 EGU entitled "Deep Time Perspectives on Climate Change: Marrying the Signal from Computer Models & Biological Proxies".

(ii) A field campaign in 2005/06, led by the British Antarctic Survey, to map, describe, sample and photograph glacial sedimentary sequences and associated fossils on James Ross Island. The rock and fossil samples will be analysed to create realistic environmental reconstructions and new data on environmental change, particularly Antarctic ice sheet history, over the past 7-10 million years, for input to climate models.

(iii) Fostering the IODP Wilkes Land drilling plan, now in the preliminary IODP drilling schedule for Austral summer 2008-2009.

(iv) Developing the IODP Ancillary Program for obtaining a Holocene ultra-high resolution record of climate variability from the Adélie Drift (Wilkes Land).

(v) Supporting and encouraging involvement with the ANDRILL programme.

(vi) Developing an international plan for the collection of airborne and ground-based geophysical data relating to the Antarctic ice sheet (i.e. ice thickness and bed elevation data) in current 'data free' zones and in regions of glaciological change.

2.1.3 Evolution and Biodiversity in the Antarctic (EBA)

2.1.3.1 Progress

EBA's goals are to examine the evolution history of Antarctic organisms, the evolutionary adaptation of organisms to the Antarctic environment, the patterns of gene flow and consequences for population dynamics, the diversity of organisms, ecosystems and habitats in the Antarctic, and the impact of past, current and predicted future environments. Among other things EBA will lead to the production of scientific advice to the Antarctic Treaty parties and CCAMLR.

During 2005, considerable effort went into developing the EBA Implementation Plan, which was accepted at the end of the year. An EBA workshop was held at the 9th International SCAR Biology Symposium (July 2005, Curitiba, Brazil) to discuss the draft implementation plan, and to decide on how to establish a Scientific Programme Group to manage EBA. This year saw the formal completion of EBA's two major predecessors, RiSCC (Regional Sensitivity to Climate Change in Antarctic

Terrestrial and Limnetic Ecosystems) and EVOLANTA (Evolutionary Biology of Antarctic Organisms), whose activities now continue in modified form within EBA. The Symposium also saw a workshop on the Census of Antarctic Marine Life (CAML), which is a key field component of EBA. The EBA plan has five different work packages, each coordinated by two people who will form part of the Steering Committee (Appendix 4).

The Executive Committee approved an EBA Steering Committee (Appendix 4). The EBA website is at: *http://www.nioo.knaw.nl/projects/scarlsssg/eba/.*

Elements of EBA, including the Census of Antarctic Marine Life, have been adopted as core proposals for the IPY.

The Census of Antarctic Marine Life **(**CAML) is a five-year international project to investigate the distribution and abundance of Antarctica's marine biodiversity. The aim is to study how biodiversity is affected by environmental change, and how change will alter the nature of the ecosystem services provided to the planet by the Southern Ocean. All groups of organisms will be included, from microbes to whales. In addition to traditional taxonomy, the use of powerful new tools for genetic sequencing will determine the extent to which the Antarctic marine fauna and flora is responding to change. CAML is collaborating with oceanographers and geophysicists , recognising the integrated nature of marine ecosystems. Research will be conducted in the pelagic, sea-ice, and benthic realms in as many locations around Antarctica as the provision of research vessels will allow. To date, CAML has the prospect of coordinating research on over a dozen ships from a similar number of nations, with the potential to be the largest project yet undertaken in Antarctic marine biodiversity. The fieldwork will occur mainly in 2007-08, during the International Polar Year (IPY).

The CAML Office is hosted by the Australian Antarctic Division and funded by the Sloan Foundation, and has a website at *www.caml.aq*.

The Scientific Steering Committee for CAML held a planning workshop with about 20 invited experts in Brussels during May 2005 to prepare a comprehensive science plan that is available from the CAML website. Logistic and scientific coordination were discussed at the SSC meeting in Bremerhaven in June 2005. CAML also held meetings at the 9th SCAR Biology Symposium (July, Curitiba, Brazil) and the Dynamic Planet assembly (August, Cairns, Australia).

Two databases have already been developed that will help to accommodate the needs of EBA and CAML. One is the RiSCC terrestrial/freshwater database at the Australian Antarctic Division. The other is the Marine biodiversity portal (MarBIN) in Belgium. Both are linked to the Global Biodiversity Information Facility (GBIF) and MarBIN is linked to the Ocean Biogeographical Information System (OBIS).

2.1.3.2 Plans

EBA's plans for 2006 include workshops on:

(i) "Factors Driving Evolution in the Antarctic", as part of the SCAR Open Science Conference in Hobart in July 2006;

(ii) Elephant Seals in a Changing Environment;

The Census of Antarctic Marine Life **(**CAML) is gearing up for the main fieldwork season during the International Polar Year (IPY) in 2007/08. Cruises in 2006 are likely to start in December, with expeditions on *Polarstern*, *L'Astrolabe* and *OGS Explora*.

Sampling protocols for the pelagic and benthic realms have been drafted. Protocols for microbes, habitat mapping, top predators and barcoding are underway.

Planned meetings include:

(i) a contribution to the Cephalopod International Advisory Committee conference in Hobart, Australia, 6-10 February.

(ii) a meeting in conjunction with the Polar Microbes workshop in Innsbruck, Austria, in March, 2006, focusing on Antarctic microbes.

(iii) a steering committee meeting in Bremerhaven in June 2006 to discuss logistic and scientific coordination for IPY, in conjunction with the SCAR-MarBIN workshop to develop the Antarctic node of OBIS.

(iv) a workshop on "Processes of Colonisation and Dispersal—how they shape the Biodiversity of Antarctic Marine Ecosystems", as part of the XXIX SCAR meeting in Hobart in July.

2.1.4 Subglacial Antarctic Lake Environments (SALE)

2.1.4.1 Progress

SALE's main objective is to promote, facilitate, and champion cooperation and collaboration in the exploration and study of sub-glacial environments in Antarctica. It aims to understand the formation and evolution of sub-glacial lake processes and environments; to determine the origins, evolution and maintenance of life in sub-glacial lake environments; and to understand the limnology and paleoclimate history recorded in sub-glacial lake sediments. SALE will also provide scientific advice for use by governments on scientific and technology issues including addressing environmental concerns and proposing safeguards. And it will encourage adherence to the agreed guiding principles for sub-glacial environmental stewardship, exploration, research, and data management.

The SALE Implementation Plan was completed and approved during the year, along with the membership of its Steering Committee (Appendix 4). The SALE Program Office was officially established at Texas A&M University (*http://salepo.tamu.edu/*). The SALE Program Office provides a central point of access for the US SALE (*http://salepo.tamu.edu/us_sale*), SALE-UNITED (*http://salepo.tamu.edu/sale_united*), and SCAR SALE (*http://salepo.tamu.edu/scar_sale*) programs.

As part of the planning process, the first SCAR SALE meeting was held in Vienna, Austria in April 2005. Details are provided on the SCAR SALE Website (*http://salepo.tamu.edu/scar_sale/meetingreports/salemtg1*).

The US National Science Foundation funded the National Academies to convene the "Committee on Principles of Environmental and Scientific Stewardship for the Exploration and Study of Subglacial Lake Environments". The committee consists of a distinguished group of scientists (including international participation) and is expected to provide guidance on the standards needed to responsibly explore SALE.

The SALE - Unified International Team for Exploration and Discovery (UNITED) proposal was approved as a core program by the International Polar Year 2007-2008 Joint Committee.

Two oral scientific sessions and a poster session were held on "Icy Lakes" at the 2005 Fall AGU meeting in San Francisco.

Major scientific advances in the last year include:

1. The inventory of subglacial lake features increased to over 140, demonstrating that subglacial lake environments are widespread beneath Antarctica's ice sheets.
2. Geophysical surveys identified additional large subglacial lakes that suggest an important role for these features in controlling ice movement and flow.

3. Evidence is mounting that subglacial accumulations of water were an important agent of geomorphological change of the earth's surface over geological history.
4. Biogeochemical studies of Lake Vostok accretion ice demonstrated that the lake environment have varied over time frames of thousands of years suggesting these systems are dynamic and not stagnant.
5. The age of Lake Vostok suggests that water has been cycled over 30 times yielding total dissolved gas concentrations high enough to have important implications for drilling into the lake. The high oxygen concentration (50 times more than air-equilibrated water) may pose a severe biological stress.

2.1.4.2 Plans

During 2006 a number of important SALE events are planned. There will one or more subglacial environment sessions at the EGU Annual Meeting in Vienna, Austria in April 2006. This will be followed by a major international SALE Science and Technology Advanced Planning workshop in Grenoble, France, also in April, 2006. The workshop is expected to attract 80 to 100 participants and will produce a comprehensive workshop report. SCAR SALE will hold its second meeting immediately following the SALE workshop. There will be a SALE Keynote presentation at the SCAR Open Science Conference in Hobart, Tasmania and more than likely parallel oral and poster sessions highlighting SALE research results. It is expected that the work of the US National Research Council SALE committee's work will be close to completion in early 2007.

2.1.5 Inter-hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR)

2.1.5.1 Progress

ICESTAR will create an integrated, quantitative description of the upper atmosphere over Antarctica, and of its coupling to the global atmosphere and the geospace environment. ICESTAR is coordinating its bipolar activities with the IAGA Polar Research working group. ICESTAR's output will be of use to governments in the management of advanced communications and electronic systems, including satellites.

ICESTAR's Implementation Plan was completed close to the end of the year, and an ICESTAR Steering Committee was appointed (Appendix 4). A website has been established at *www.siena.edu/physics/ICESTAR*.

Several invited talks have been given by steering committee members. ICESTAR Co-Chair Allan Weatherwax helped organize the "Coupled Geospace" workshop at the 2005 Santa Fe CEDAR/GEM meeting.

ICESTAR held a "Data Portal and Virtual Observatory" Workshop on 23 July 2005 in Toulouse, France, in conjunction with the IAGA 2005 Scientific Assembly.

Prototype virtual observatories and data portals have been released:

(i) for optical data (browser for quicklook data): see *http://gaia-vxo.org*.

(ii) for magnetometer data, VGMO.NET: see *http://mist.engin.umich.edu/mist/vgmo/vgmo.html*; and

(iii) for the multi-instrument data sets at South Pole Station: see *http://siena.isti.com/*

An ICESTAR proposal has been accepted for the IPY.

2.1.5.2 Plans

Links are being made with the organisers of the International Heliophysical Year (IHY). At the EGU General Assembly in Vienna in April there will be a Special Session on

"Interhemispheric similarities and asymmetries in geospace phenomena", which will be coordinated with the CAWSES programme.

ICESTAR will convene a Special Session on "Coupling from the Sun to the Ground" for the Spring AGU.

There will be several ICESTAR sessions as part of the SCAR Open Science Conference in Hobart in July.

TAG Team Leader Nikolai Østgaard will give an invited talk at the International Conference on Substorms-8 on conjugate imaging of substorms.

ICESTAR will hold a Second Technical Workshop to refine specifications for technical solutions, and to evaluate programming languages, data catalogue structures, visualization tools and input and output data formats. The second updated version of the Optical VxO will be released. ICESTAR will also build a prototype of federated distributed archives and metadata collection routines.

Preparatory work will begin for the IPY-IHY activities, especially to submit proposals for Coordinated Investigation Programmes to facilitate the arrangement of coordinated multi-instrumental measurement campaigns and as the basis for collaboration in modeling and outreach activities.

2.2 SPECIFIC RESEARCH AREAS

2.2.1 LIFE SCIENCES GROUP

The Standing Scientific Group for the Life Sciences (SSG-LS) held the 9th SCAR International Biology Symposium in Curitiba, Brazil, 25 - 29 July 2005, with the theme of "Evolution and Biodiversity in Antarctica". There were 246 oral and poster presentations from 29 countries with 70 from Brazil. A selection of the presentations will be published in a special issue of *Antarctic Science*.

Many members of the RiSCC programme contributed to the production of the book *Trends in Antarctic Terrestrial and Limnetic Ecosystems*, which will be published by Springer in the course of 2006.

The Expert Group on Birds plans to produce a book on the 119 sites designated as Important Bird Areas of Antarctica and the islands of the Southern Ocean. The group played an important role in the implementation of the Agreement on the Conservation of Albatrosses and Petrels (see details in section 5, below).

The Expert Group on Seals developed its website, revised its membership, held a workshop in Curitiba in July, and is working on the final APIS report.

The Expert Group on Human Biology and Medicine met in Bulgaria in July 2005. It has proposed a merger with COMNAP's medical group, MEDINET; the proposal is under consideration by the SCAR and COMNAP Executive Committees. In the meantime the group has started having annual meetings with MEDINET. The group has developed an IPY proposal entitled "Taking the Polar Pulse".

The Action Group on Biological Monitoring hosted a workshop in Texas, USA in March 2005, with 44 participants from 14 countries. Its purpose is to develop a biological protocol updating and combining existing biological, physical and chemical monitoring protocols for the Antarctic.

A workshop on Antarctic Conservation in the 21st Century was held in South Africa in May 2005, with the purpose of updating conservation protocols in the Antarctic Treaty.

The SCAR-sponsored Southern Ocean programme of GLOBEC, the Global Ecosystems Dynamics Programme of the International Geosphere-Biosphere Programme (IGBP), continued to study the year-round lifecycle of Antarctic zooplankton, particularly krill, as well as predators of krill, such

as marine mammals and seabirds. Southern Ocean GLOBEC (SO-GLOBEC) is now concerned with the development and testing of ecosystem models that can explain the data and be used as the basis for forecasting trends and patterns in the krill. Although SO-GLOBEC will likely end by 2007, efforts to understand the operation of the Southern Ocean ecosystem will continue through the Southern Ocean component of a newly emerging IGBP programme, IMBER (Integrated Marine Biogeochemistry and Ecosystem Research). That new component, co-sponsored by SCAR, is named ICED (Integrated Analyses of Circumpolar Climate Interactions and Ecosystem Dynamics in the Southern Ocean). The ICED Implementation Plan is now being developed.

These various groups plan to hold meetings during XXIX SCAR in Hobart, July 2006, or to hold special sessions as part of the SCAR Open Science Conference in Hobart. They will put their plans to the business meeting of the SSG-LS in Hobart for approval.

2.2.2 GEOSCIENCES GROUP

Within the Standing Scientific Group for the Geosciences (SSG-GS) are six Expert Groups and four Action Groups, whose reports follow:

2.2.2.1 Expert Group on International Bathymetric Chart of the Southern Ocean (IBCSO) (Leader: H. W. Schenke; Ger.)

High quality bathymetric maps are needed for safe navigation, as a first order control for modellers trying to understand the role of ocean currents, as an indicator of depth-related ecosystems, and as a first clue to geological processes. This Group exists to act as the steering group for production of a revised chart of the bathymetry of the Southern Ocean, in conjunction with the International Hydrographic Office (IHO) and the General Bathymetric Chart of the Oceans (GEBCO). The project was discussed in detail at the GEBCO meeting in Aguascalientes in July 2005, where it was recognized that the largest data gaps are in the South Pacific. The project was also discussed at meetings of the IHO Committee in Kystnos, Greece and in Christchurch, NZ. The IHO Committee formulated an explicit request to Member States for bathymetric data needed for the completion of the Nautical Charts in Antarctica (INT Chart Scheme). The project is also supported by COMNAP, which contributes to the compilation of Nautical Charts within the INT chart scheme, for safe navigation, and which needs bathymetric data to assist in protecting the marine environment within the Antarctic Treaty area. The good cooperation between COMNAP and the IHO Hydrographic Committee on Antarctica (HCA) is an asset for developing the IBCSO.

The interest of ocean modellers in bathymetry has led to the IBCSO Project being represented by its leader within the new SCAR/SCOR Oceanography Expert Group, which met in Venice in October 2005. In turn, that led to the Chair of the Oceanography Group persuading the organising Committee for the International Polar Year (IPY) to stress the importance of collating all bathymetric data collected during the IPY.

A post-doctoral researcher will be employed during 2006 at the Alfred Wegener Institute in Bremerhaven (AWI) to be the scientific editor for the IBCSO. The next GEBCO-Meeting will be held at AWI from 14 to 23 June 2006. A major topic for this meeting is a discussion of the possible aggregation of bathymetric data from different international databases. There are plans to combine (i) the existing bathymetry from the AWI Bathymetric Chart of the Weddell Sea with (ii) the Indian Ocean Bathymetry from the GEBCO Digital Atlas Centenary Edition and (iii) the new bathymetric charts from the Ross Sea produced by V. Stagpoole and F. Davey, NZ.

2.2.2.2 Expert Group on Geodetic Infrastructure of Antarctica (GIANT) (Leader: Reinhard Dietrich; Ger.)

This Group exists to provide a common geodetic reference system for all Antarctic scientists and operators; to contribute to global geodesy for studying the physical processes of the earth and the maintenance of the precise terrestrial reference frame; and to provide information for monitoring the horizontal and vertical motion of the Antarctic. Its efforts take place through twelve projects, whose progress is listed below. For more information see the GIANT web site: *http://www.geoscience.scar.org/geodesy/giant.htm*.

1. Permanent Geoscientific Observatories

The Group carried out a programme of repeat measurements from existing Global Positioning System (GPS) observatories, and made new measurements from new GPS observatories. It provided access to data through international services, and collaborated with other SCAR scientists to identify requirements for space geodetic sites.

2. Epoch Crustal Movement Campaigns

The Group coordinated continental-wide and regional epoch campaigns; archived and provided access to data from these campaigns; identified and coordinated the integration of regional campaigns; delivered results to ITRF along with results from permanent observatories; and collaborated with the International Association for Geodesy's Sub-Commission on Antarctica.

3. Physical Geodesy

The Group collaborated with the IAG Antarctic Gravity project; promoted an Antarctic airborne gravity project; coordinated with others on new satellite gravity data missions such as GRACE and GOCE; and developed gravity ties between stations, airfields and Absolute gravity sites.

4. Geodetic Control Database

The Group maintained the database and added newly acquired data; developed draft guidelines for photo identification; and defined appropriate metadata for geodetic control.

5. Tide Gauge Data

The Group listed all permanent and significant tide gauges established for hydrographic information and scientific studies; put key data into the geodetic database and posted metadata on the Internet; and arranged a supply of tide gauge data to the TIGA project.

6. Atmospheric Impact on Global Navigational Satellite System (GNSS) Observations in Antarctica (in relation to Geophysical research)

The Group monitored the impact of atmosphere variability (troposphere and ionosphere) on Antarctic GPS observations; collected and enhanced accessibility to all available GPS-relevant atmospheric parameters and observations made near GPS sites; facilitated access to GPS observations from permanent GPS sites and the SCAR GPS epoch campaign, for computation of atmospheric delay to GPS signals; and evaluated tropospheric models, the accuracy of those models and the relationship of outputs to the height of the observing stations.

7. Ground Truthing for Satellite Missions

The Group identified new satellite missions that will provide geodetic data or require geodetic support (eg. ICESAT, CryoSat, Envisat) and facilitated the transfer of satellite mission data to the Antarctic scientific community.

8. Geodetic Advice on positioning limits of special areas in Antarctica

The Group carried out research how limits are described for protected areas and the accuracy of the coordinates, and identified difficulties / problems related to coordinates.

9. Remote Observing Technologies

This ongoing activity provides key input to the plans to implement the IPY proposal for a Polar Earth Observing Network (POLENET). A POLENET workshop will take place in Dresden, Germany, from October 4-6, 2006, co-sponsored by SCAR and the International Association of Geodesy.

10. In situ GNSS Antenna Tests and Validation of Phase Centre Calibration Data

The Group established in situ test sites in Antarctica. Test data obtained at non-Antarctica test network sites may be used in analysis.

11. High Accuracy Surface Change and DEM's from Satellite and Airborne Imagery

The Group carried out research on the generation of high accuracy Digital Elevation Models (DEMs) over limited areas, and on using high accuracy DEM's in the monitoring of aircraft landing sites.

12. High Accuracy Kinematic GPS Positioning

The Group studied ice-shelf dynamics as a means of investigating the behaviour and effect of tides, and developed a technique for surface profile surveys.

2.2.2.3 Expert Group on Geographic Information (EGGI) (Leader: S. Vogt; Ger.)

Geographic location is a fundamental requirement for integrating and communicating Antarctic scientific information. This Group exists to create an Antarctic Spatial Data Infrastructure (AntSDI) by: providing fundamental geographic information products and policies in support of Antarctic science programmes, operations managers and the wider public; integrating and coordinating Antarctic mapping and GIS programmes; promoting an open standards approach to support free and unrestricted data access; promoting capacity building towards sound Antarctic geographic data management within all SCAR nations; and promoting to COMNAP the data and products that the GI Group produces. Its work will help to provide geographic limits to Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs), or locations of Historic Sites and Monuments, and geospatial web services that might be needed for scientific, logistic, or tourism-related applications. A website has been created for communications about implementation of the Antarctic Spatial Data Infrastructure, including specifications and GI products: *http://www.antsdi.scar.org*

The EGGI has delivered a range of up to date Geographic Information products through its nine projects. The products are accessible on-line and used widely in scientific research, education and government. The 9 projects are:

- Spatial Data Model
- Geospatial Information - Enabling Technologies
- Antarctic Data Linkages
- Place Names (SCAR Composite Gazetteer)
- Map Catalogue (SCAR MapCat)
- Topographic Database (SCAR ADD)
- King George Island GIS (SCAR KGIS)
- Cybercartographic Atlas of Antarctica
- GIS Collaboration in East Antarctica

The first three projects aim to produce standards and specifications such as geospatial web service specifications, or the SCAR Feature Catalogue - which is a major building block to enable database interoperability in the Antarctic community. Through EGGI member Paul Cooper (BAS) EGGI participates in the work of the International Organisation for Standardisation (ISO), particularly the ISO Technical Committee on Geographic Information standards (TC211), where SCAR has Class A Liaison status.

Place Names: The SCAR Composite Gazetteer of Antarctica provides an authoritative database of all Antarctic place names approved by recognised bodies, for reference by national Antarctic naming authorities, scientists and operators. At present the database includes 35,551 records from 22 countries and from the GEBCO (IHO) gazetteer. The database has been updated with new entries and corrections: *http://www3.pnra.it/SCAR_GAZE*.

Map Catalogue: The SCAR Map Catalogue is a public-access on-line catalogue of all Antarctic mapping products. It allows searches for published maps of Antarctica using spatial coverage, keywords, place-names, etc. The catalogue has been set up as a framework that allows each SCAR member country to update the relevant information online:
http://aadc-maps.aad.gov.au/aadc/mapcat/.

Topographic Database: The Antarctic Digital Database (ADD) is the primary source of continent-wide topographic data for Antarctica. A Web Map Server and a Web Feature Server have been created, allowing direct access to the ADD from both web sites and computer software:
http://www.add.scar.org/.

The SCAR King George Island Geographical Information System (KGIS): This project provides an integrated geographic database of King George Island for use by all countries and for multi-disciplinary applications including scientific research and environmental management. The database provides integrated and consistent topographic data for King George Island. It has been and still is used extensively in the preparatory studies for the emerging discussions on a coordinated environmental management for the Fildes Peninsula Region (see e.g. ATCM XXVIII, IP 16). SCAR KGIS data has also contributed to the Admiralty Bay ASMA management plan. The database has been updated with new topographic and hydrographical data for the more important ice-free areas. An interactive map viewer, a Web Map Service and a Web Feature Service have been established, allowing direct access to the KGIS database from both web-sites and computer software. The interactive KGIS Map viewer was awarded third place in the Uni Freiburg Medienpreis 2004 (Media Award) including a 5,000 Euro donation to support the project.
http://www.kgis.scar.org/.

The Cybercartographic Atlas of Antarctica: With its 'open' framework this Atlas has the potential for a wide range of use by scientists, the public, governments, the Antarctic Treaty Secretariat, and COMNAP. It can be an important aid in education, outreach and information exchange. The Atlas continues to develop with assistance from the Social Science and Humanities Research Council of Canada. A series of baseline content modules have been created including treatments of Antarctic topics such as: Exploration, Politics, Environmental Protection, Sea Ice, Glacial Morphology, Biodiversity, Ecology, and Territorial Claims. The modules use an Atlas development framework, which supports integration of multimedia content and connection to geographic information services. Four publications and three Masters theses by the project team were published or accepted during 2005 and early 2006: *http://www.carleton.ca/gcrc/caap/*.

The EGGI has been involved in three meetings since SCAR XXVIII. These included:

a) SCAR Feature Catalogue Implementation Workshop at BAS in Cambridge, November 29th to December 3rd 2004. Feature catalogues provide a detailed description of the nature and the structure

of spatial data, and promote the dissemination, sharing, and use of geographic data by providing a better understanding of the content and meaning of the data.

The SCAR Feature Catalogue is being developed as part of the SCAR Spatial Data Standards project. Spatial databases that already implement the SCAR Feature Catalogue include those of the Australian Antarctic Data Centre and the SCAR King George Island GIS Project. The aim of the workshop was to transform the Antarctic Digital Database (ADD) to a SCAR Feature Catalogue compliant structure and to assess requirements on the further development of the Feature Catalogue.

b) The Geographic Information Web Data Developments Workshop, in Baltimore, March 5, 2005 brought together people actively involved in the development of geospatial web services for Antarctic research applications to discuss the current status and future requirements for geospatial web service implementations.

c) The EGGI met informally in the margins of a meeting of the Cybercartographic Atlas project, in Ottawa, from 18-20 September 2005, to discuss progress on Geographic Information projects. Most EGGI project leaders were included in the discussions by means of a teleconference hook-up.

EGGI will continue developing these projects according to the Geographic Information Programme 2004-2006 (*http://geoscience.scar.org/geog/geog.htm*). Progress will be reviewed at the EGGI meeting in Hobart at SCAR XXIX. There may be an EGGI workshop in Hobart prior to SCAR XXIX.

2.2.2.4 Antarctic Digital Magnetic Anomaly Project (ADMAP) (Leader: Marta E. Ghidella, Arg.)

ADMAP was created in 1995 under the auspices of SCAR and IAGA (International Association of Geomagnetism and Aeronomy) to compile national near-surface and satellite magnetic anomaly data into a digital map and database for the Antarctic continent and surrounding oceans. The unified data set will be a powerful tool for determining the structure, processes and tectonic evolution of the continent, together with providing information valuable in the reconstruction of the Gondwanaland and Rodinia supercontinents. The resulting merged potential field anomaly maps enable the geological mapping studies of the various national programmes to be better connected, providing a regional framework for the interpretation of smaller scale areas and enabling a more effective selection of areas for further investigation. ADMAP also coordinates protocols for data distribution; serves as a reference for future survey planning; and archives and maintains the magnetic anomaly data base of Antarctica. Recent achievements include:

- Development of a DVD of the compilation of data up to 1999 for release to the World Data Centers.
- Update of the near-surface anomaly predictions from Magsat in the ADMAP database with the significantly more accurate observations from the Ørsted and CHAMP satellite missions.
- Development of improved modeling of the Antarctic core field and its secular variations, and external fields for better definition of crustal anomalies in magnetic survey data.
- Compilation of rock magnetic and other physical properties into a database to support geological applications of the ADMAP data.
- Development and promotion of regional and continental scale interpretation efforts of ADMAP data to provide new insight into global tectonic and geologic processes in the Antarctic context.
- Support for the World Magnetic Anomaly Map initiative of the International Association of Geomagnetism and Aeronomy (IAGA).
- Production of 4 Ph.D. dissertations and over 40 in-review, in-press, or published scientific papers.
- Updates on the ADMAP website: *http://www.geology.ohio-state.edu/geophys/admap.*

The ADMAP grids were released to the public in November 2003. They include:

- The 5-km grid of airborne and ship-borne survey data only with large coverage gaps.
- The 5-km grid of airborne and ship-borne survey data with the coverage gaps filled in using a crustal magnetization model that satisfies both the near-surface and 400-km altitude magnetic observations from the Magsat satellite mission. This map merges over 400 thousand line-kilometers of airborne and ship-borne survey data with more than 5.6 million line-kilometers of Magsat satellite observations. Reference: Golynsky, A., M. Chiappini, D. Damaske, F. Ferraccioli, J. Ferris, C. Finn, M. Ghidella, T. Isihara, A. Johnson, H.R. Kim, L. Kovacs, J. LaBrecque, V. Masolov, Y. Nogi, M. Purucker, P. Taylor, and M. Torta, 2001, ADMAP – Magnetic Anomaly Map of the Antarctic, 1:10 000 000 scale map, in Morris, P., and R. von Frese, eds., BAS (Misc.) 10, Cambridge, British Antarctic Survey.
- A 10-km grid of airborne and ship-borne survey data with the coverage gaps filled in using a crustal magnetization model that satisfies both the near-surface and 650-km altitude magnetic observations from the Ørsted satellite mission.

The ADMAP magnetic compilation is part of the World Magnetic Anomaly Map.

In the short to medium term the group will complete implementation of ADMAP's protocols to maintain and update the database with new airborne and ship-borne magnetic survey data and related metadata as they become available. It will continue compiling all available terrestrial, marine, and satellite magnetic survey data collected by the international community since the IGY 1957-58 for the region south of 60°S. And it will continue the development and promotion of regional and continental scale interpretation efforts of the ADMAP data. New data and interpretations will also enhance studies addressing interplays between geological boundary conditions, Antarctic ice sheets and climate change. These efforts will also greatly assist in identifying high-priority areas for new collaborative magnetic surveys.

In the longer run, the Group will consider incorporating magnetic gradient measurements that will become available towards the end of the current decade from ESA's recently authorized multi-satellite SWARM mission. These observations will greatly improve crustal anomaly detail at satellite altitudes since one of the mission's main objectives is to model the polar external fields. The Group will also expand collaborative efforts with Arctic working groups for more bi-polar magnetic exploration and research. And it will provide a broad collaborative framework for new frontiers in the magnetic exploration of the Polar Regions, such as by long-range aircraft and unmanned autonomous vehicles.

2.2.2.5 Expert Group on Permafrost and Periglacial Environments (EGPPE) (Leader: Jan Boelhouwers; Swe.)

This Group exists to provide coordination, communication and exchange of data amongst Antarctic permafrost researchers within SCAR and the International Permafrost Association (IPA) and promote interaction and collaboration with SCAR and IPA working groups; to collect and collate spatial data on permafrost and cryosols and contribute to databases for Antarctic soils, permafrost and ground ice conditions including the active layer; to develop and promote monitoring/observation protocols and networks; to promote international cooperation and facilitate collaborative field research; and to address key science questions pertaining to permafrost. During the year EGPPE prepared a white paper on the State of Antarctic Permafrost Science; prepared a map showing permafrost and ground ice features in the southern circumpolar region; and prepared maps showing soils of the southern circumpolar region. It was involved in the meetings of CliC-IASC (Beijing – April 2005); EUCOP II (Potsdam - June 2005); IAG (Zaragoza – 2005); and ICARP II (Copenhagen - November 2005).

2.2.2.6 ANTEC: Antarctic Neotectonics Expert Group (Leader: Terry Wilson, USA)

ANTEC's goals are to promote and coordinate multidisciplinary, multinational research relevant to Antarctic neotectonics; to identify 'target sites' where there is a need for deployment of geodetic and seismic stations and arrays, and airborne, marine and field campaigns; to encourage and coordinate the installation of instruments at permanent sites and in regional networks (GPS, gravity, seismic) for focused studies in target areas; and to promote and coordinate sharing of instrumentation, logistics, and data.

The Airborne Mapping Task Group encouraged development of coordinated international airborne campaigns over Antarctic regions that are promising targets for neotectonic research. A web-based resource of information on technological components required for autonomous remote observatories has been started as the Technological Information Resources project, jointly with GIANT (see above). A start has been made on compiling data for the integration of data sets to study neotectonics of selected regions. And an Antarctic Seismology Web Resource (AnSWeR) has been developed: *http://wwwrses.anu.edu.au/seismology/answer/*. Information about ANTEC is available from the website: *http://www.antec.scar.org/*.

In conjunction with a joint IRIS-UNAVCO meeting, Washington State, in June 2005, ANTEC held a workshop on Autonomous Remote Observatories for IPY, to finalize a science and implementation plan for deployment of a network of remote autonomous observatories for the International Polar Year. ANTEC was also involved in the GSA-sponsored Earth System Processes II meeting on Geodynamics, Ice Sheets & Climate, in Calgary, from August 8-11, 2005.

2.2.2.7 Communication and Outreach Action Group (COG) (Leader: G. Johnstone, Aus.)

This Group exists to provide information on Antarctic geoscientific research to the scientific community and the wider public. Relevant geospatial and geoscientific information was disseminated through electronic communication methods. The Geosciences web site was maintained. Newsletters on geoscience activities were produced and distributed. Links were maintained with other SCAR groups and external bodies as appropriate. Assistance was provided for the organisation of the Antarctic Geodesy Symposium 2005 (Cairns, Australia, August 2005), and the 4th International Antarctic GIS Workshop (Chile, October 2005).

2.2.2.8 Action Group on Acoustics in the Marine Environment (Leader: P. O'Brien, Aus.)

This Group exists to consider the effects on marine mammals of noise created by marine scientific activities such as echo-sounding and airgun surveys. The Group met in Cadiz, Spain from the 23rd to 26th January 2006 for its third workshop. At that meeting, the Group reviewed progress in understanding the effects of anthropogenic noise on marine species, and a COMNAP survey of shipping activity in the Antarctic. The Group revised the risk analysis conducted in 2004 by simplifying some categories and including shipping noise as a separate matrix. And it concluded that ship noise levels in the Antarctic Peninsula needed consideration because of the increase in tourist vessel traffic.

This Group has provided input to CEP discussions at two previous Antarctic Treaty Consultative Meetings (ATCMs) and provides scientific background information for national regulators responsible for issuing permits for marine surveys. The report of the first workshop has been used widely by groups involved in the issues beyond the Antarctic. The risk analysis developed at the second workshop has also been considered widely (e.g. by the US Marine Mammal Commission). The results of the third workshop will be incorporated into a Working Paper for the May 2006 ATCM.

2.2.2.9 Action Group on Marine Survey Coordination

This new Group aims to develop mechanisms to improve communication about planned marine geophysical surveys within the Antarctic scientific community. It is in the process of developing web-based forms to use to notify the wider community about upcoming surveys, and of developing a list of national contacts to provide the information needed.

2.2.3 PHYSICAL SCIENCES GROUP

Reports are provided for a selection of the expert and action groups of the Standing Scientific Group for the Physical Sciences. Several of those not reported on below now form part of the AGCS Scientific Research Programme (see 2.1.1, above).

Ice Drilling Technology Expert Group

This new Expert Group has been spinning up during the year, and is currently planning for the 6th International Ice Drilling Technology Workshop that will be held September 17-23, 2006 in Shepherdstown, West Virginia. There is a strong potential linkage to the International Partnership in Ice Core Science (IPICS), which SCAR proposed to co-sponsor.

Astronomy from Antarctica

SCAR has two astronomy groups: the Antarctic Astronomy and Astrophysics Expert Group (AAA), and the Plateau Astronomy Site Testing in Antarctica Action Group (PASTA). Although neither group met during 2005, there were several important international astronomy meetings at which members of these SCAR groups were present, giving the opportunity for informal interactions. Perhaps the most significant of these was the "Wide Field Survey Telescope at Dome C/A conference" in Beijing, China, in June. This was the first conference on Antarctic astronomy to be held in China, and included a report from the Chinese traverse team on their successful expedition to Dome A.

Another astronomical highlight of 2005 was the first winter-long operation of the French-Italian "Concordia" Station at Dome C. Both Dome C and Dome A show promise of offering exceptionally good conditions to astronomers.

Modelling and Observational Studies of Antarctic Katabatic winds (MOSAK)

This Action Group has been planning a workshop for March 2006, which will be concerned with determining our current understanding of the Antarctic wind field and our ability to represent it in climate models.

Reference Antarctic Data for Environmental Research (READER) Expert Group

SCAR is developing a database of physical oceanographic data from the Southern Ocean (OCEAN-READER) to assist in understanding how the ocean works, and the influence of the physical system on the chemistry and biology of the region.

Oceanography

The joint SCAR/SCOR Oceanography Expert Group held its first formal meeting, in Venice, in October 2005. The Group's aims are: to encourage an inter-disciplinary approach to Southern Ocean observations, modelling and research, recognizing the inter- dependence of physical, chemical and biological processes in the ocean at present and in the past; to facilitate coordination between the physical oceanographic research groups currently active and those planning research in the Southern Ocean; to identify historical and reference data set of value to researchers, focusing initially on

physical oceanography data; and to encourage the exchange of information with operational agencies. The Group is now working to the action plan developed at that meeting. The development of databases of physical oceanographic data from the Southern Ocean will assist in understanding how the ocean works, and the influence of the physical system on the chemistry and biology of the region.

SCAR also co-sponsors with SCOR the international Antarctic Zone (iAnZONE) Project, which undertakes physical oceanographic investigations around the Antarctic margins. And SCAR co-sponsors with CLIVAR and CliC the Southern Ocean Implementation Panel, which is devoted to establishing a Southern Ocean observing system. Both iAnZONE and the Southern Ocean Implementation Panel developed successful proposal for projects to be carried out during the IPY.

The Southern Ocean Implementation Panel organised a meeting hosted by SCAR at the Scott Polar Research Institute in Cambridge in June, to investigate modes of Variability in the Southern Ocean and to develop their IPY proposal.

Cryosphere

SCAR continued with the World Climate Research Programme (WCRP) to co-sponsor the development of a Cryosphere Theme for the Integrated Global Observing System Partnership (IGOS-P). A draft is available from the IGOS Cryosphere Theme web site *http://stratus.ssec.wisc.edu/igos-cryo/*. The final version will be produced for review by the Committee on Earth Observing Satellites (CEOS) and the IGOS partners in May/June 2006. It is then expected to be implemented as part of the Global Earth Observing System of Systems (GEOSS).

3. DATA AND INFORMATION MANAGEMENT

One of SCAR's secondary objectives is to facilitate free and unrestricted access to Antarctic scientific data and information in accordance with article III-1c of the Antarctic Treaty. This is the task of the Joint SCAR-COMNAP Committee on Antarctic Data Management (JCADM).

In early April, JCADM was reviewed favourably by an international Review Team chaired by Dr. Lesley Rickards, Deputy Director of the British Oceanographic Data Centre (BODC) and chair of the International Oceanographic Data and Information Exchange Committee (IODE). The full report from the Review Team may be downloaded from the SCAR *(http://www.scar.org/researchgroups/jcadm/)* or JCADM *(http://www.jcadm.scar.org)* web sites. One of the outcomes of the JCADM review was a series of recommendations to further improve JCADM. All these recommendations were discussed at the annual JCADM meeting and turned into JCADM action items for the coming year. The 9th annual JCADM meeting was held in Buenos Aires, September 12-16, 2005. It included a two day capacity building workshop.

JCADM's members are the managers of National Antarctic Data Centres (NADCs). Over the past year JCADM continued to recruit new members from SCAR Member nations, and there are now 30 countries involved in JCADM, with new NADCs in Malaysia, South Africa and Bulgaria. The total number of dataset descriptions (DIFs) in the Antarctic Master Directory (AMD) increased by 18% from 2966 (June 2004) to 3503 (July 2005). The growth can be attributed to the continued work by existing NADCs and the implementation of new NADCs. Each NADC can now have its own 'portal' into the AMD, through the Global Change Master Directory (GCMD), which is the host for the AMD. These portals enable each NADC to provide its own DIF entries to the AMD, and provide a national view of the metadata in the AMD. The data management capacity of existing NADCs has been strengthened by the capacity building workshop in Buenos Aires, and by valuable nation-to-nation support from the Australian Antarctic Data Centre.

NADCs vary greatly in the resources available for storing and disseminating Antarctic science data. NADCs submit data to relevant World Data Centres. In addition, NADCs have also made data freely available on the Internet as data files, as databases and using Web Services to international science portals such as the Global Biodiversity Information Facility and the Ocean Biogeographic Information System. Currently, over 30 million data records have been placed online by NADCs. Initiatives have been taken to promote the use of the JCADM/AMD infrastructure for data management during the upcoming International Polar Year.

JCADM plans to develop closer links with the SCAR SSGs and Research Programmes, with SCAR's marine biodiversity database (MarBIN), and with international data programmes like the Global Biodiversity Information Facility (GBIF), the Ocean Biogeographic Information System (OBIS), the International Oceanographic Data and Information Exchange Committee (IODE), and the Climate and Cryosphere Project (CliC). To strengthen links with SCAR's 5 Scientific Research programmes (SPRs), JCADM has nominated JCADM personnel to each SRP. These arrangements were formalized at the SCAR Cross-Linkages workshop in Amsterdam in November. One direct result is that JCADM is actively involved in setting up an infrastrucuture to build the Southern Ocean database (or OceanREADER), as requested by AGCS.

4. INTERNATIONAL POLAR YEAR

SCAR is making a significant contribution to the proposed International Polar Year (IPY) (1 March 2007 – 1 March 2009). The SCAR Executive Director is a member (ex-officio) of the Joint ICSU/WMO Committee for the IPY, which also contains several scientists eminent in SCAR science programmes, for example: one current SCAR Vice President (Jerónimo López); one past SCAR Vice President (Chris Rapley); a member of the Steering Group for EBA (Edith Fanta); the chairman of the SCAR/SCOR Oceanography Group (Eberhard Fahrbach), and the chairman of the Local Organising Committee for the SCAR Open Science Conference (Ian Allison). During 2005, the Joint Committee formally approved 139 proposals covering the Arctic or Antarctic or both. Several of the Antarctic or Bipolar ones are based on SCAR activities, including some based on the 5 SCAR Scientific Research Programmes; other SCAR-led proposals are expected to be approved by the IPY early in 2006. The SCAR Secretariat has worked closely with SCAR groups to encourage the submission of proposals, and it is gratifying to note that the SCAR-led proposals have been very well-received, to the point that they have been asked to lead regional clusters of activities in their thematic area of interest. It is good to see SCAR science in this leading position in the IPY. A SCAR scientist, Taco de Bruin (Neth), the chairman of JCADM, co-chairs the IPY Subcommittee on Data Policy and Management.

5. SCIENTIFIC ADVICE TO ATCM, CEP, CCAMLR AND ACAP

SCAR continues to be the primary source of independent scientific advice to the Antarctic Treaty Consultative Meeting (ATCM) and the Committee on Environmental Protection (CEP), through its status as Observer. During 2006 there will be a significant change in the working of SCAR's Standing Committee on the Antarctic Treaty System (SC-ATS), where the current Chief Officer, David Walton (UK) will retire following the Edinburgh ATCM meeting and be replaced by Prof Steve Chown (RSA). During the year, the SC-ATS has gained Sergio Marenssi (Arg) and Graham Hosie (Aus.), while Michael Stoddart (Aus) rotated off the committee after several years of service.

SCAR participated in the XXVIIIth ATCM in Stockholm (6-17 June 2005). The SCAR Lecture, on Biodiversity, by Prof Chown, was very well received. SCAR presented 2 Working Papers and 3

Information Papers. The Working Paper on how to go about listing endangered species was well received, but the Working Paper on the listing of Fur Seals was returned for further work. SCAR is proposing to provide up to 8 Working Papers and 5 Information Papers for the XXIXth ATCM in Edinburgh in June 2006. SCAR is also proposing to undertake a review on Antarctic Climate Change along the lines of the Arctic Climate Impact Assessment, for presentation to a future ATCM.

SCAR continues to be an Observer to the Committee on the Conservation of Antarctic Marine Living Resources (CCAMLR). During 2005, SCAR's representation at CCAMLR changed, with Dr. Graham Hosie (AUS) replacing Dr Edith Fanta (BRA), who had become Chairperson of CCAMLR's Scientific Committee. SCAR participated in the 24th CCAMLR meeting in Hobart (24 Oct to 4 Nov 2005). SCAR's Census of Antarctic Marine Life (CAML) programme provides perhaps the strongest current link to CCAMLR's interests. SCAR and CCAMLR also both have significant interests in IPY proposals where there is the potential for synergy between the two organisations during 2007-2008. SCAR's Marine Bioversity database (MarBIN) should also prove useful to CCAMLR, as should links to SCAR's EBA programme (Evolution and Biodiversity in the Antarctic). CCAMLR has routinely requested SCAR in the past for data on birds and seals. CCAMLR will be holding a workshop to decide on its specific requirements for such data in future. SCAR stands ready to provide what is required. The Executive Director of SCAR plans to attend the 25th CCAMLR meeting in 2006.

In recognition of the expertise of the SCAR Bird Group, SCAR continues to be invited to attend meetings of the Advisory Committee on Albatrosses and Petrels (ACAP) as an Observer, providing advice and data on the distribution, abundance, population trends and regional conservation status of Southern Giant Petrels. In addition, SCAR is a member of two ACAP Working Groups (Status and Trends, and Breeding Site Inventory). In 2006, SCAR will be providing ACAP with an Information Paper on the potential contribution of at-sea data to the selection of high seas Marine Protected Areas (MPAs). Such data may help to identify possible Marine Protected Areas, because seabirds can be used as proxies for related biological activity (i.e. prey species).

6. NEW DEVELOPMENTS

SCAR is planning its second Open Science Conference on 12–14 July 2006, in Hobart. Around 750 abstracts have been submitted, so some 700 attendees are expected at the meeting, which will provide important opportunities to develop cross-disciplinary links.

SCAR is already beginning to plan its XXXth meeting, which will take place in Russia in 2008. It is expected that the SCAR Science Week will take place in St. Petersburg, in July, and the SCAR Delegates Meeting will take place in Moscow in October. The theme for the Open Science Conference will be along the lines of Bipolar Science in the International Polar Year, and will be organised jointly with the International Arctic Science Committee (IASC). During these meetings we will take the opportunity of celebrating SCAR's 50th Anniversary.

SCAR has implemented a Communications Plan to improve communications to the wider world about the Antarctic region (*http://www.scar.org/communications/*).

SCAR is developing plans for a Capacity Building and Education programme, especially for the benefit of those SCAR Members and others with limited experience of working in the Antarctic region. As part of this programme, SCAR continues to operate a Fellowship programme (4 Fellows funded in 2005-2006).

In the Secretariat, Dr. Peter Clarkson (UK) retired as Executive Secretary in June, and was replaced, as Executive Officer by Dr Marzena Kaczmarska (POL). Administrative Assistant Mandy Dalton left SCAR in August. A long-term secretarial appointment to replace her will be made in January 2006.

Appendix 1

Membership of Scar

Full Member (28):

Argentina, Australia, Belgium, Brazil, Canada, Chile, China, Ecuador, Finland, France, Germany, India, Italy, Japan, Korea (Republic of), Netherlands, New Zealand, Norway, Peru, Poland, Russia, South Africa, Spain, Sweden, Switzerland, United Kingdom, United States of America, Uruguay.

Associate Members (4):

Pakistan, Ukraine, Bulgaria, Malaysia.

ICSU Union Members (7):

IGU	International Geographical Union
IUBS	International Union of Biological Sciences
IUGG	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
IUPAC	International Union of Pure and Applied Chemistry
IUPS	International Union of Physiological Sciences
URSI	Union Radio Scientifique Internationale

Appendix 2

SCAR Executive Committee (to July 2006)

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SCAR Chief Officers

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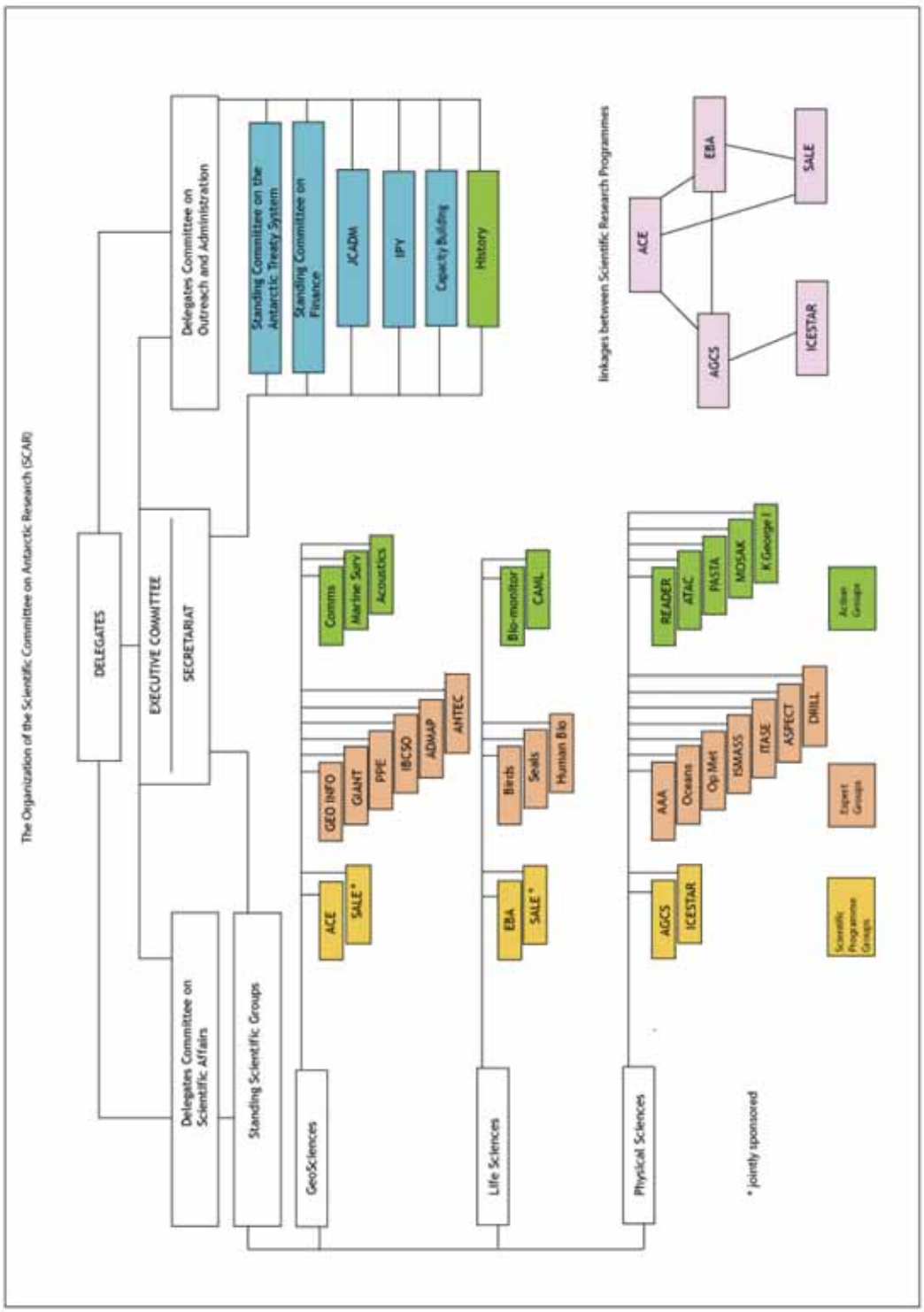
Appendix 3

SCAR Structure



List of Constituent sub-groups in the SCAR Organization

Delegates Committee on Scientific Affairs

Standing Scientific Group on Geosciences

Expert Groups on:

- Geographic Information
- Geodetic Infrastructure for Antarctica
- Permafrost and Periglacial Environments
- International Bathymetric Chart for the Southern Ocean
- Antarctic Digital Magnetic Anomaly Project
- Antarctic Neotectonics

Action Groups on:

- Communications and Outreach
- Marine Geophysical Surveying
- Marine Acoustics

Standing Scientific Group on Life Sciences

Expert Groups on:

- Birds
- Seals
- Human Biology and Medicine

Action Groups on:

- Bio-monitoring of Human Impacts
- Census of Antarctic Marine Life

Standing Scientific Group on Physical Sciences

Expert Groups on:

- Antarctic and Astronomy and Astrophysics
- Oceanography
- Operational Meteorology
- Ice Sheet Mass Balance and Sea Level
- International Trans-Antarctic Scientific Expedition
- Antarctic Sea-Ice Processes and Climate
- Ice drilling technology

Action Groups on:

Reference Antarctic Data for Environmental Research

Antarctic Tropospheric Aerosols and their role in climate

Plateau Astronomy Site Testing in Antarctica

Modelling and Observational Studies of Antarctic

Katabatics

Scientific Co-ordination on King George Island

Scientific Research Programmes

Antarctic Climate Evolution

Antarctica and the Global Climate System

Evolution and Biodiversity in the Antarctic

Inter-hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research

Subglacial Antarctic Lake Environments

Delegates Committee on Outreach and Administration

Standing Committee on the Antarctic Treaty System

Standing Committee on Finance

Joint Committee on Antarctic Data Management

International Polar Year 2007-09

Capacity Building

History of Scientific Research in Antarctica

Appendix 4

Memberships of Steering Committees of SCAR's Scientific Research Programmes

1. Antarctica in the Global Climate System (AGCS)

Implementation takes place through four themes:

(1) Decadal time scale variability in the Antarctic climate system,
(2) Global and regional climate signals in ice cores,
(3) Natural and anthropogenic forcing on the Antarctic climate system,
(4) The export of Antarctic climate signals.

The Scientific Steering Committee comprises:

John Turner: (Chair and Leader Theme 3; UK)

David Bromwich (Leader Theme 1; USA)

Paul Mayewski: (Leader Theme 2; USA)

Mike Meredith: (Leader Theme 4: UK)

Xiaou Cunde: (China)

Tony Worby: (Australia)

Ilana Wainer: (Brazil)

Shigeru Aoki: (Japan)

Nancy Bertler: (New Zealand)

Gino Casassa: (Chile)

Alberto Naveira-Garabato: (UK)

2. Antarctic Climate Evolution (ACE)

The Scientific Steering Committee comprises:

Martin Siegert (co-chair; UK)

Rob Dunbar (co-chair; USA)

Carlota Escutia (Spain)

Damian Gore (Australia)

Rob DeConto (USA)

Fabio Florindo (Italy)

Jane Francis (UK)

Sandra Passchier (Neth)

Ross Powell (USA)

Rob Larter (UK)

Gary Wilson (NZ)

Eric Wolff (UK)

Six subcommittees were created to coordinate the research on different geological timeframes, and on technology:

LGM-Holocene	Chair: Tony Payne (UK)
Pleistocene	Chair: Tim Naish (NZ)
Middle Miocene-Pliocene	Chair: Alan Haywood (UK)
Oligocene-Miocene	Chair: Rob DeConto (USA)
Eocene/Oligocene	Chair: Jane Francis (UK)
Radio-Echo Sounding	Chair: Detlef Damaske (Germany)

3. Evolution and Biodiversity in the Antarctic (EBA)

Implementation takes place through four themes (work-packages):

1. Evolutionary history of Antarctic organisms
2. Evolutionary adaptation to the Antarctic environment
3. Patterns of gene flow within, into and out of the Antarctic, and consequences for population dynamics
4. Patterns and diversity of organisms, ecosystems and habitats in the Antarctic, and controlling processes.
5. Impact of past, current and predicted future environmental change on biodiversity, and the consequences for Antarctic marine, terrestrial and limnetic ecosystem function

The Scientific Steering Committee comprises:

Co-chair: Guido di Prisco (Italy, marine, also representing ICEFISH)

Co-chair: Peter Convey (UK, terrestrial)

Secretary: Dana Bergstrom (AUS, terrestrial)

Member: Angelika Brandt (D, marine)

Member: Marc Lebouvier (F, conservation matters)

Ex officio: Ad Huiskes (NL, terrestrial, Chief Officer Life Sciences Standing Scientific Group of SCAR)

Census of Antarctic Marine Life (CAML): Michael Stoddart (AUS, marine)

Work Package 1: Brigitte Hilbig (D, marine, also representing ANDEEP-SYSTCO), Dominic Hodgson (UK, terrestrial)

Work Package 2: Dan Costa (US, marine), Takeshi Naganuma (Jap, terrestrial)

Work Package 3: Antonio Mateo Sole-Cava (Brazil, marine), Ian Hogg (NZ, terrestrial)

Work Package 4: Julian Gutt (D, marine), Satoshi Imura (Jap, freshwater)

Work Package 5: Edith Fanta (Brazil, marine), Tad Day (US, terrestrial)

4. Subglacial Antarctic Lake Environments (SALE)

The Scientific Steering Committee comprises:

John Priscu (Chief Officer; USA)

Chuck Kennicutt (Secretary; USA)

Valery Lukin (Rus)

Martin Siegert (UK)

Jean Robert Petit (France)

Christophe Mayer (Germany)

Robin Bell (USA)

Sergey Bulat (Rus)

Cynan Ellis-Evans (UK)

Frank Pattyn (Bel).

Ross Powell (USA)

5. Inter-hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR)

Four Thematic Action Groups (TAGs) were established to coordinate the main scientific activities and objectives proposed:

TAG-A: Quantifying and understanding the similarities and differences between the Northern and Southern polar upper atmospheres;

TAG-B: Quantifying the effects on the polar ionosphere and atmosphere of the magnetospheric electromagnetic fields and plasma populations;

TAG-C: Quantifying the atmospheric consequences of the global electric circuit and further understanding the electric circuit in the middle atmosphere;

TAG-D: Creating a data portal to integrate all of the polar data sets and modeling results.

The Scientific Steering Committee comprises:

Allan Weatherwax (Co-Chair; USA)

Kirsti Kauristie (Co-Chair; Finland)

Brian Fraser (Australia)

Scott Palo (TAG-C Co-Leader; USA)

Martin Fullekrug (TAG-A Leader; UK)

Ruiyuan Liu (China)

Nikolai Østgaard (TAG-C Co-Leader; Norway)

Aaron Ridley (TAG-D Leader; USA)

Natsuo Sato (Japan)

Eftyhia Zesta (TAG-B Leader; USA)

Maurizio Candidi (Italy)

Appendix 5

List of Acronyms

AAA	Antarctic and Astronomy and Astrophysics
ACAP	Advisory Committee on Albatrosses and Petrels
ACE	Antarctic Climate Evolution
ADD	Antarctic Digital Database
ADMAP	Antarctic Digital Magnetic Anomaly Project
AGCS	Antarctica in the Global Climate System
AGU	American Geophysical Union
AMD	Antarctic Master Directory
ANDRILL	Antarctic Geological Drilling Project
ANTEC	Antarctic Neotectonics
ANTSDI	Antarctic Spatial Data Infrastructure
APIS	Antarctic Pack-Ice Seals
AWI	Alfred Wegener Institute
BAS	British Antarctic Survey
BODC	British Oceanographic Data Centre
CAML	Census of Antarctic Marine Life
CAWSES	Climate and Weather of the Sun-Earth System
CEOS	Committee on Earth Observing Satellites
CEDAR	Coupling, Energetics and Dynamics of Atmospheric Regions
CliC	Climate and Cryosphere Programme
CLIVAR	Climate Variability programme of WCRP
COG	Communication and Outreach
DEM	Digital Elevation Model
DIF	Dataset description
EBA	Evolution and Biodiversity in the Antarctic
EGGI	Expert Group on Geographical Information
EGPPE	Expert Group on Permafrost and Periglacial Environments
EGU	European Geophysical Union
ENSO	El Niño –Southern Oscillation
ESA	European Space Agency
EUCOP	European Conference on Permafrost
EVOLANTA	Evolutionary Biology of Antarctic Organisms
GEBCO	General Bathymetric Chart of the Oceans
GEM	Geospace Environment Modeling
GEOSS	Global Earth Observing System of Systems
GBIF	Global Biodiversity Information Facility
GCMD	Global Change Master Directory
GI	Geographical Information
GIANT	Geodetic Infrastructure for Antarctica
GIS	Geographic Information Systems
GLOBEC	Global Ocean Ecosystems Dynamics
GOCE	Gravity Field and Steady State Ocean Circulation Explorer
GPS	Global Positioning System
GRACE	Gravity Recovery and Climate Science Experiment
GSA	Geological Society of America
IABO	International Association of Biological Oceanography
IAG	International Association of Geodesy
IAGA	International Association of Geomagnetism and Aeronomy
IAnZone	International (Coordination of Oceanographic Research within the) Antarctic Zone
IASC	International Arctic Science Committee
IBCSO	International Bathymetric Chart of the Southern Ocean

ICARP	International Conference on Arctic Research Planning
ICED	Integrated Analysis of Circumpolar Climate Interactions and Ecosystem Dynamics in the Southern Ocean
ICESTAR	Inter-hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research
IGBP	International Geosphere-Biosphere Programme
IGOS	Integrated Global Observing Strategy
IGOS-P	Integrated Global Observing Strategy Partnership
IGU	International Geographical Union
IGY	International Geophysical Year
IHY	International Heliophysical Year
INT	International Charts of IHO
IODE	International Ocean Data and Information Exchange Programme
IPA	International Permafrost Association
IPICA	International Partnership in Ice Core Science
IODP	Integrated Ocean Drilling Program
IMBER	Integrated Marine Biogeochemical and Ecosystem Research
IRIS	Incorporated Research Institutes for Seismology
ISO	International Organisation for Standardisation
ITRF	International Terrestrial reference System
IUBS	International Union of Biological Sciences
IUGG	International Union of Geodesy and Geophysics
IUGS	International Union of Geological Sciences
IUPAC	International Union of Pure and Applied Chemistry
IUPS	International Union of Physiological Sciences
JCADM	Joint Committee on Antarctic Data Management
KGIS	King George Island Geographical Information System
LGM	Last Glacial Maximum
MarBIN	Marine Biodiversity Information Network
MEDINET	Medical Network
MOSAK	Modelling and Observational Studies of Antarctic Katabatic Winds
MPA	Marine Protected Area
NADC	National Antarctic Data Centre
OBIS	Ocean Biodiversity Information System
OGS	Oceanografia e Geofisica Sperimentale
PASTA	Plateau Astronomy Site Testing in Antarctica
PPE	Permafrost and Periglacial Environments
READER	Reference Antarctic Data for Environmental Research
RiSCC	Regional Sensitivity to Climate Change in Antarctic Terrestrial and Limnetic Ecosystems
SALE	Subglacial Antarctic Lake Environments
SAM	Southern hemisphere Annular Mode
SC-ATS	Standing Committee on the Antarctic Treaty System
SCOR	Scientific Committee on Oceanic Research
SO	Southern Ocean
SRP	Scientific Research Programme
SSG	Standing Scientific Group
SSG-G	SSG on Geosciences
SSG-LS	SSG on Life Sciences
SSG-PS	SSG on Physical Sciences
TAG	Thematic Action Group
TIGA	Tide Gauge Benchmark Monitoring Project
UN	United Nations
URSI	Union Radio Scientifique Internationale
VGMO	Virtual Global Magnetic Observatory
WAP	Western Antarctic Peninsula
WCRP	World Climate Research Programme

COMNAP Report to ATCM XXIX

Executive Summary

The Council of Managers of National Antarctic Programs (COMNAP) brings together the Managers of National Antarctic Programs, that is the national officials responsible for planning and conducting their nations' presence in the Antarctic. It serves as a forum in which the directors, logistics managers and other members of the National Programs develop practices that improve the effectiveness and safety of their activities pursuant to the Antarctic Treaty and its Protocol on Environmental Protection.

COMNAP does contribute actively to the work of the Antarctic Treaty meetings and its intersessional contact groups, providing a range of technical advice developed using members' pool of expertise in COMNAP's realm of competence: operational implementation, safety, technology and information sharing. While COMNAP's input can be in direct response to specific requests from the Antarctic Treaty, it does usually remain closely linked to, and derived from, ongoing technical work carried out by or within COMNAP as a matter of course.

This is particularly highlighted this year by two ship operations related information papers presented to CEP IX in response to concerns raised at recent CEP meetings and ATCMs: ATCM XXIX-IP082 *The Use of Anti-fouling Biocide paints by National Antarctic Program Vessels* and IP083 *The Use of Ballast Water in Antarctica*. The information collected shows that National Programs had already moved to implement new antifouling and ballast water practices well ahead of relevant international conventions coming into force. This does reflect Antarctic operators' continual efforts in developing and introducing new equipment and practices in support of more efficient and safer operations – safer for personnel and safer for the environment.

This COMNAP Annual Report to the ATCM provides an overview of COMNAP's current activities, with an added focus on their relevance to issues currently addressed by the Antarctic Treaty System. It covers a range of topics with a predominance on environmental monitoring, environmental protection, safety, cooperation and exchange of information. It also reports on COMNAP's current efforts on ramping up its capacity to support its core mission, bringing National Programs together, with all the immediate benefits it brings in support of the International Polar Year (IPY) 2007-2009. It also provides an update on COMNAP's general organisation and support, an overview of the various COMNAP groups and information on the main facilities operated by National Antarctic Programs in 2006 in the Antarctic Treaty Area.

COMNAP is committed to serve its role in the Antarctic Treaty System by providing practical, technical and non-political advice. It does remain committed to continue focusing on its core mission and work on increasing National Antarctic Programs' ability to manage and carry-out their operations, together or individually, for the benefit of all in the Antarctic Treaty System, and for the success of the forthcoming International Polar Year.

Topics of current COMNAP activities described in this report, and relevant agenda items

		Agenda Items	
Topic	*Section Number*	*ATCM XXIX*	*CEP IX*
Biological monitoring of human impacts in the Antarctic	3.1		9
Operational indicators for environmental monitoring and reporting	3.2	17	9
Use of ballast water in Antarctica	3.3	9,15	8
Use of anti-fouling biocide paints by National Antarctic Program Vessels	3.4	15	8
Marine acoustic systems used by National Antarctic Program vessels	3.5	9,15	8
Workshop on waste management and waste clean-ups	3.6	15	12
Review of fuel handling and storage guidelines	3.7	9	11
Supporting the Hydrographic Committee on Antarctica (HCA)	3.8	9,15	11,13
Accident, Incident and Near-Miss Reporting (AINMR)	3.9	9,17	11
SCALOP symposium on Antarctic Logistics and Operations	3.10	9,15	11,13
Use of inspection checklists as a management tool	3.11	13	10
Joint operations and stations and exchange of personnel between National Programs	3.12	15,17	10,15
Workshop on National Antarctic Programs joint training initiatives	3.13	9,15	11,13
Exchange of information under Resolution 6 (2001)	3.14	17	15
Collaboration with the Antarctic Treaty Secretariat	3.15	17	
Operational publications	3.16	9,15	11
General information publications	3.17	11,16,17	9
Facilitating and promoting the distribution and use of publications	3.18	11,16,17	5
Support of the International Polar Year (IPY) 2007-2008	3.19	11,16	5

1. Introduction

The Council of Managers of National Antarctic Programs (COMNAP) was formally created on 15 September 1988 to bring together the Managers of National Antarctic Programs, that is the national officials responsible for planning and conducting their nations' presence in the Antarctic.

It serves as a forum in which the directors, logistics managers and other members of the National Programs develop practices that improve the effectiveness and safety of their activities pursuant to the Antarctic Treaty and the associated Madrid Protocol.

COMNAP immediately started contributing positively to the Antarctic Treaty System (ATS) and was very quickly formally recognised as a valuable member of the Treaty System. The Antarctic Treaty Consultative Parties invited the Chairman of COMNAP to present a report on the activities of COMNAP to ATCM XVI in Bonn, Germany, in October 1991. ATCM XVI then agreed that COMNAP should be invited in future to participate to Antarctic Treaty Meetings as an observer on the same basis than the already well established Scientific Committee on Antarctic Research (SCAR) and Commission for the Conservation of Antarctic Marine Living resources (CCAMLR).

COMNAP has now, in 2006, grown into an international organisation bringing together the National Antarctic Programs from 29 countries from Europe, Africa, Asia, the Americas and Australasia, with two more in the process of joining.

COMNAP has taken very seriously the privilege and responsibility of being a formally recognised member of the Antarctic Treaty System. It does, and will continue to contribute actively to the work of the Antarctic Treaty Meetings and its intersessional contact groups, providing a range of technical advice developed using members' pool of expertise in COMNAP's realm of competence: operational implementation, safety, technology and information sharing. COMNAP is committed to serve its role in the ATS by providing practical, technical and non-political advice.

This COMNAP Annual Report to the ATCM provides an overview of COMNAP's current activities, with an added focus on their relevance to current work of, and concerns raised within, the ATS. The majority of activities carried out by and within COMNAP correspond to ongoing, operational work and while updates on progress can be of interest to the ATCM and the CEP, these do not neccesarilly require regular, detailed reporting through a plethora of individual information papers. For simplicity and efficiency, these updates are provided together through this single annual report. While it is formally submitted under two agenda items only, ATCM XXIX Agenda Item 4 (Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts) and CEP IX Agenda Item 14 (Cooperation with other Organisations), the paper includes for easy reference a table of content that maps each section of the report to relevant agenda items.

2. COMNAP in Brief

COMNAP brings together the National Antarctic Programs from 29 countries from Europe, Africa, Asia, the Americas and Australasia, with two more in the process of joining. The functional basis for COMNAP, within the Antarctic Treaty System is that, as a council of managers and operators, it is competent in the realm of operational implementation, safety, technology and information sharing. It provides the Antarctic Treaty, on request, with technical advice developed using members' pool of expertise.

The National Antarctic Programs are those agencies tasked by their government to implement and manage their national activities in Antarctica, including organising expeditions. While most of these

activities focus on the support of scientific research, they do also contribute to the governance and environmental protection of the Antarctic region under the auspices of the Antarctic Treaty.

The National Antarctic Programs have their foundation in the early expeditions sent to explore, map and study Antarctica in the 19th and 20th centuries and COMNAP has its roots in the long-standing, ongoing tradition of international collaboration in the conduct of Antarctic expeditions.

COMNAP's primary function and activities are related to the exchange of practical, operational information with a view to improving the way all National Programs can fulfill their various missions, together or independently. That includes mutual support in the design, ongoing improvement and operation of Antarctic facilities and transport infrastructure.

In addition to supporting its members, COMNAP works with the other Antarctic bodies to support effective, sustainable Antarctic expeditions and the success of the Antarctic Treaty System. In particular, it works closely where appropriate with:

- the Antarctic Treaty Secretariat - *www.ats.aq*
- the Antarctic Treaty's Committee for Environmental Protection (CEP) - *www.cep.aq*
- the Scientific Committee on Antarctic Research (SCAR) - *www.scar.org*
- the Hydrographic Committee on Antarctica (HCA), a Registered Hydrographic Commission of the International Hydrographic Organisation (IHO) - *www.iho.shom.fr*
- the International Association of Antarctica Tour Operators (IAATO) which represents the bulk of the non-governmental operators active in the Antarctic Treaty area - *www.iaato.org*

3. Selection of Current COMNAP Activities, and their Relevance to Current ATS Work and Concerns

This section regroups outline reports of COMNAP recent and current activities that are relevant to current work of and concerns raised by the latest Antarctic Treaty Consultative Meetings, meetings of the Antarctic Treaty Committee for Environmental Protection (CEP) and related Intersessional Contact Groups. Whenever possible, references have been included to relevant documents, agenda items or Antarctic Treaty Resolutions, Decisions or Measures.

As part of its responsibilities to the Antarctic Treaty System (ATS), COMNAP provides input to ATS discussions derived from its operational experience and its continual work towards improved operations and practices. As and when appropriate this includes contribution to ATCM-mandated intersessional work and collaboration with the Antarctic Treaty Secretariat on practical matters such as the exchange of information.

While COMNAP's input can be in response to direct, specific requests from an Antarctic Treaty Consultative Meeting (ATCM) or a meeting of the Committee for Environmental Protection (CEP), it does usually remain closely linked to and derived from ongoing technical work carried out by or within COMNAP as a matter of course.

This is particularly highlighted this year by two ship operations related information papers presented to CEP IX in response to concerns raised at recent CEP meetings and ATCMs: ATCM XXIX-IP082 *The Use of Anti-fouling Biocide paints by National Antarctic Program Vessels* and IP083 *The Use of Ballast Water in Antarctica*. The information collected shows that National Programs had already moved to implement new antifouling and ballast water practices well ahead of relevant international conventions coming into force. This does reflect Antarctic operators' continual efforts in developing and introducing new equipment and practices in support of more efficient and safer operations – safer for personnel and safer for the environment.

COMNAP is committed to serving its role in the ATS by providing practical, technical and non-political advice in its domain of competence.

3.1 Biological Monitoring of Human Impacts in the Antarctic

At the time the July 1996 report on the *Monitoring of Environmental Impacts from Science and Operations in Antarctica* and the May 2000 *Antarctic Environmental Monitoring Handbook* were prepared, it was estimated that there was not a sufficient scientific basis to propose indicators or methods for biological monitoring. The handbook was restricted to physical and chemical monitoring. The issue of biological monitoring was to be revisited once more data were available.

SCAR and COMNAP decided in 2004 to organise a joint workshop to revisit the issue of biological monitoring. Funded by the US National Science Foundation, SCAR and COMNAP the workshop was held on 16-18 March 2005 in Bryan-College Station, Texas, with 44 participants from 14 countries.

The key findings and recommendations of this very successful workshop are presented by SCAR and COMNAP to CEP IX in Information Paper ATCMXXIX-IP088 *Practical Biological Indicators of Human Impacts in Antarctica*.

These key findings and recommendations were reviewed and discussed by relevant COMNAP groups during the 2005 annual meeting COMNAP XVII in July 2005. Key issues for COMNAP resulting from the worshop include:

1. Promoting the need for monitoring programs and facilitating their development (simplicity being the key)
2. Facilitating further information exchange and coordination between the relevant members of the science and National Program communities, for example through a 4-yearly joint SCAR-COMNAP workshop on environmental monitoring
3. Development by the COMNAP Antarctic Environmental Officers Network (AEON) of a long-term action plan based on the workshop recommendations
4. Coordination with key aspects of the Treaty System, in particular the CEP and the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
5. Participation in the ATCM-mandated Intersessional Contact Group (ICG) on Environmental Monitoring

Progress on these issues has started intersessionally and is ongoing. COMNAP was an active participant in the Environmental Monitoring ICG. The COMNAP Antarctic Environmental Officers Network (AEON) will be meeting in July 2006 and will continue progress on these issues, in particular with respect to (1) promoting the need for monitoring programs and facilitating their development and (3) development of a long-term action plan. Progress towards these objectives will be presented to CEP X.

3.2 Operational indicators for environmental monitoring and reporting

COMNAP has actively contributed to the 2005/2006 environmental monitoring ICG with a particular focus on practical aspects of collecting and providing operational information of interest to environmental monitoring and reporting. Report of the ICG work has been provided to CEP IX in Working Paper ATCM XXIX-WP016.

COMNAP prepared a poster titled *Antarctic Operational Indicators – Select from our exciting menu!* for presentation and discussion at both the CEP strategic workshop to be held in June 2006 just prior to CEP IX and the COMNAP annual meeting COMNAP XVIII a few weeks later. Copy of this poster is annexed to this report.

The poster is designed to generate thoughts and facilitate discussions around operational monitoring and reporting and their ability to benefit both environmental and operational management decisions.

The key message is:

- *A number of operational indicators are needed for effective environmental monitoring and input into environmental management decisions;*
- *Any operational indicator can also be useful for operational reporting and analysing and input into operational management decisions;*
- *Joint selection of operational indicators would provide the opportunity to begin developing a simple, flexible system for monitoring and reporting, that will benefit us all;*

Let's do it together!

It is hoped that feedback from all stakeholders, in particular the CEP, will allow formulation of a clear, simple path towards protocols and systems able to support useful operational input into environmental management decisions while assisting the providers of the information themselves to use it for input into their operational management decisions.

Progress also continued on a number of separate activities with potential, tangible applications and benefits for environmental monitoring, and in particular State of the Antarctic Environment Reporting (SAER), including:

- ongoing development of information exchange capabilities;
- incident reporting and follow-up processes;
- standard metadata sets including geographic tagging of information;
- mapping products; and
- protocols to input environmental, operational and other information into mapping products.

This work, described further in other sections of this report, is done with Environmental Monitoring and ATS Exchange of Information requirements in mind.

COMNAP remains committed to contributing to environmental monitoring and reporting as required by the CEP and the ATCM and to finding ways to provide the required operational information in an efficient, timely and reliable manner.

3.3 Use of ballast water in Antarctica

"Ballast Water" is water taken on board a ship and discharged as needed to control its trim, list, draught, stability or stresses. Its use is essential to the safe and efficient operation of ships, providing balance stability to ships that are not fully loaded. In the Antarctic, it is also needed for effective ice-breaking operation. However, the water taken on board may contain organisms that can then be transferred to other areas where the water may need to be discharged. The practice can therefore be responsible for the introduction of invasive species and cause environmental damage.

This is an issue of global importance that is being addressed globally through the International Maritime Organization (IMO). The IMO *International Convention for the Control and Management of Ships Ballast Water and Sediments* was adopted in 2004 and will enter into force 12 months after ratification by 30 States, representing 35% of world merchant shipping tonnage. At 31 March 2006, the Convention had been ratified by 6 States representing 0.62% of world tonnage and it is still unclear when it will come into force.

In the meantime, specific concerns about the possible environmental impacts of ballast water practices in the Antarctic Treaty Area have been raised. In response, COMNAP and the International

Association of Antarctica Tour Operators (IAATO) presented to ATCM XXVIII in 2005 Information Paper IP-121 on *The use of Ballast Water in Antarctica*. This presented technical information about ballast water practices and provided the results of a survey that captured 40 of the 72 ships of the combined COMNAP-IAATO member fleet, the bulk of the fleet operating in the Treaty Area: at that time 87.5% did not discharge any ballast water in the Area; 7.5% did not discharge in the Area water brought from outside the Area, and the remaining 5% only discharged in the open ocean.

COMNAP conducted a further, more detailed survey in 2005-2006 which captured 25 National Antarctic Program vessels. None of these discharged ballast water in the Area: 16% had isolated (sealed) ballast water tanks so never take on or discharge ballast water, 60% did not take on or discharge ballast water at all while in the Treaty Area, and the remaining 24% took on but did not discharge ballast water in the Treaty Area.

Both surveys indicate that the potential for environmental damage from ballast water discharge is already low as few, if not none, of the ships operating in the Antarctic Treaty Area have an operational requirement for discharging ballast water in the Area under normal circumstances. This reflects the work done over the years by Antarctic operators to introduce new equipment and procedures as they become available in support of safer operations. Compliance with the IMO Convention should not pose any significant problem and COMNAP supports the current efforts to put the principles of the Convention into practice within the Antarctic Treaty area, whenever practicable, before the Convention comes into force.

The results of this work are presented in more details to CEP IX in Information Paper ATCM XXIX-IP083 *The Use of Ballast Water in Antarctica.*

3.4 Use of anti-fouling biocide paints by National Antarctic Program Vessels

"Anti-fouling" refers to material or systems used to prevent "fouling", the accumulation of biological material on submerged surfaces. In shipping this chiefly concerns the prevention of such accumulation on hulls. Effective anti-fouling of ship hulls prevents or minimises:

- the progressive increase of hull resistance to movement (drag) which results in slower navigation and higher fuel consumption; and
- the potential for species to gain a free ride around the world ocean and be introduced in areas where it could cause environmental damage.

From the late 1960s effective anti-fouling started to rely widely on the use on hulls of anti-fouling paints containing organotins, such as tributyltin (TBT), effective biocides but highly toxic chemicals. High concentrations of TBT were detected around ports and shipping routes and the use of TBT paints was found to be harmful to a range of aquatic organisms including molluscs, crustaceans and fish. Alternative methods started to be investigated, developed and implemented.

The International maritime Organization (IMO) developed the *International Convention on the Control of Harmful Anti-fouling Systems on Ships* which will prohibit the use of harmful organotins in anti-fouling paints and establish a mechanism to prevent the potential future use of other harmful susbstances in anti-fouling systems. The Convention was adopted in October 2001 and will enter into force 12 months after ratification by 25 States representing 25% of the world merchant shipping tonnage. At 31 March 2006, the Convention had been ratified by 16 States representing 17.27% of world tonnage. It is still unclear when it will come into force. In the meantime, specific concerns about the possible environmental impacts of TBT in the Antarctic Treaty Area have been raised.

COMNAP conducted in 2005-2006 a survey on current anti-fouling practices of National Antarctic Program vessels which captured 25 vessels. None of these vessels used TBT-based paint and all already complied with the Convention. This reflects the work done over the years by National

Antarctic Programs to introduce new equipment and procedures as they become available in support of safer operations.

COMNAP supports the current efforts made to put the principles of the convention into practice within the Antarctic Treaty Area, whenever practicable, before the Convention comes into force.

The results of this work are presented in more details to CEP IX in Information Paper ATCM XXIX-IP082 *The Use of Anti-fouling Biocide paints by National Antarctic Program Vessels.*

3.5 Marine acoustic systems used by National Antarctic Program vessels

Marine vessels use a number of marine acoustic systems such as sonars, current profilers, echo-sounders or seismic arrays. These systems produce pulses of sound underwater and then record any returned reflections. The pulses are reflected by objects such as the sea bottom, reefs or moorings, by animals, or also by interfaces between bodies of different physical properties, such as between air and water, between water and rock, or between two different layers of water or rocks. Analysis of the returned reflections provides information about the nature, location and distribution of these reflectors.

Obvious, vital applications include:

- monitoring water depth to avoid running aground;
- surveying Antarctic waters to produce accurate hydrographic charts for safer navigation; or
- monitoring the position of potentially dangerous submerged parts of icebergs.

It has also a wide range of important, very valuable applications in various research areas, from oceanography to geology, to geodesy to biology.

These systems rely on the generation of sound waves in the water, hence of "marine noise". And noise can, depending on its frequency or power, be harmful to marine life and in particular to marine mammals. This is an issue that has received increasing attention worldwide. A number of specific concerns have been raised about the possible dangers to Antarctic marine life and the Antarctic Treaty's Committee for Environmental Protection (CEP) decided that it should be a topic for substantive discussion at its 2006 meeting CEP IX. The Scientific Committee on Antarctic Research (SCAR) would in particular prepare a Working Paper on the issue.

There are a very wide range of types and sizes of systems available, which generate noise in a wide range of frequencies and power, and it would not be possible to make any meaningful evaluation of risks without relating it to types of systems used. COMNAP therefore decided at its 2005 COMNAP XVII meeting in Sofia, Bulgaria, to collect detailed up-to-date information on the marine acoustic systems used on National Antarctic Program vessels. Results would be provided to SCAR for input into its working paper and into discussions at the 2006 CEP IX. Interim results of the survey were provided to SCAR in time for its workshop to review the risks associated with marine acoustics in the Southern Ocean held in Cadiz, Spain, in January 2006.

The COMNAP survey captured 22 National Program Vessels and is deemed representative of the fleet currently operated by National Programs. Results of the survey, in the form of a series of tables listing technical details of the marine acoustic systems installed on these vessels, are presented to CEP IX in Information Paper ATCM XXIX-IP084 *Marine Acoustic Systems Used by National Antarctic Program Vessels*.

These results provide a reference and a set of practical, matter-of-fact information for input into any further analysis and evaluation of risks associated with marine acoustics in Antarctic waters.

3.6 Workshop on waste management and waste clean-ups

The COMNAP Antarctic Environmental Officers Network (AEON) will convene in July 2006 in Hobart, Tasmania a two-day information exchange workshop with:

- Day 1 to focus on current waste management practices; and
- Day 2 to focus on efforts to clean up old waste from previous landfill practices.

In line with COMNAP's objectives and the practical, operational nature of AEON the workshop is intended simply as an information sharing exercise between people who are practically required to manage waste for their nations in Antarctica, and has no policy intent.

It is hoped through effective sharing of information on waste management, individual participants can learn information to improve their own waste management efforts.

Presentations to, and conclusions from, the workshop will be published both in hard copy and in electronic form, available publicly on the COMNAP web site. Outcomes of the workshop will be presented to CEP X.

3.7 Review of fuel handling and storage guidelines

CEP VIII noted and discussed concerns about fuel storage and handling raised by some recent Treaty inspections, which in particular reported a lack of secondary containment and contingency planning at some stations (Refer CEP VIII report, paragraphs 44-59). COMNAP recognised that fuel storage and handling was a major concern, noted that the issue was on its agenda for future work and indicated that it would undertake an analysis of fuel storage and handling practices and report findings to the next meeting. On the CEP recommendation, the ATCM XXVIII subsequently adopted Resolution 3 (2005) *Fuel Storage and Handling,* which included the recommendation that *COMNAP consider undertaking a further assessment of fuel handling and storage facilities and procedures in Antarctica with a view to issuing a set of clear recommendations to operators*.

COMNAP convened a workshop on 07 November 2005 in Christchurch, New Zealand. It was attended by 12 participants representing five National Programs, the COMNAP Standing Committee on Antarctic Logistics and Operations (SCALOP), the COMNAP Working Group on Ship Operations (SHIPOPS), the COMNAP Antarctic Environmental Officers Network (AEON), the COMNAP Secretariat and IAATO.

The specific purpose of the workshop was to review the set of four separate COMNAP fuel handling and storage guidelines:

- Oil Spill Contingency Planning (CGN 01/1992)
- Procedures for Fuel Oil Transfer at Stations and Bases (CGN 02/1992)
- Spill Prevention and Containment of Fuel at Stations and Bases (CGN 03/1992)
- Reporting of Oil Spill Incidents which occur in Antarctica (CGN 04/1992)

Key questions to discuss were whether the guidelines were still adequate, what the obstacles to their implementation may be and how these can be overcome. Key objectives were to ensure guidelines represented best practice and to help National Programs, and any other operator, to comply with these guidelines.

The text of the guidelines and the practices it described were found to be essentially still adequate although some wording needed adjusting to align with specific wording from the Protocol on Environmental Protection and its annexes, in particular the recent Annex VI on *Liability Arising from Environmental Emergencies*.

Perceived obstacles to implementation of the guidelines included:

(obstacles that may be overcome by improving and promoting the guidelines themselves)

- lack of awareness of the guidelines;
- lack of awareness of the environmental consequences of fuel spills and the importance of preparedness;
- relative lack of clarity of objectives;
- lack of integration with national requirements; and
- difficulties in readily and easily understanding guidelines that remained exclusively text-based and relatively wordy - difficulties exarcerbated for those not fluent in English or another of the few languages the guidelines have been made available into (it is worth noting here that it is not uncommon for a ship to shore fuel transfer operation to involve two sides that do not share the same native language, a situation which should become more common with increased international cooperation).

(obstacles that could only be overcome by other means)

- lack of funding for proper storage and response systems;
- lack of standardisation of fuel systems, e.g. couplings for fuel to shore transfers;
- difficulties of coordination for multi-operator plans; and
- inadequate sharing of examples and experience.

The workshop agreed that while the text of the guidelines required only relatively minor amendments there was a need to rejuvenate the guidelines with graphics, actual examples, associated brochures and posters and give them a higher profile. This would address and contribute to overcoming most of the obstacles identified.

The following way forward was proposed:

- Review in details the structure and wording of the set of existing guidelines in view of the perceived obstacles and suggest adjustments to update the text of the guidelines – this would include
    - highlighting the existence and relevant implications of Annex VI (on Liability Arising from Environmental Emergencies) to the Protocol on Environmental Protection, to make senior personnel more aware of their new responsibilities, which could be covered in a generic introduction to all four guidelines;
    - simplifying the language and avoiding very dry wording; and
    - clarifying the audience and re-targeting the message accordingly.
- Bring graphics into the guidelines wherever possible including diagrams, photos, cartoons, etc...
- Insert, link to or attach actual examples (e.g. images or documents) of good practice from operators.
- Bring all four guidelines and associated documents together into in a fuel "Manual" provided in a binder, with all copies managed and updated as is currently the case with the COMNAP Antarctic Telecommunications Operators Manual (ATOM). Latest versions of all components would be made available online in a central location. Sections should include introduction, definitions, design, prevention and reporting.

- Consider future development of the manual through development of additional sections addressing topics such as:
    - field fuel management;
    - guides for internal auditing of fuel-related installations and procedures, with pro-forma reports;
    - short (anonymous) case studies on past fuel spills; and
    - characteristics (e.g. material safety data sheets) for commonly used fuels.

The workshop participants proceeded to review in details the structure and wording of the set of existing guidelines in view of the perceived obstacles and suggested adjustments to update the text of the guidelines. These were later used to produce a working draft of a revised text of the guidelines, to which an initial but limited number of graphics were added.

The way forward identified and proposed by the workshop and the working draft of a revised text will be reviewed, discussed and moved forward in July 2006 in a special session of the COMNAP annual meeting COMNAP XVIII. The ATS will be kept informed on progress.

3.8 Supporting the Hydrographic Committee on Antarctica (HCA)

The Hydrographic Committee on Antarctica (HCA) is a special hydrographic commission of the International Hydrographic Organization (IHO) responsible for hydrographic surveying and nautical charting matters in "International Region M" which corresponds to the Antarctic Treaty area. Membership of the HCA is open to any IHO Member State whose government has acceded to the Antarctic Treaty and which contributes resources and/or data to IHO Chart coverage of the area. Membership is usually through the National Hydrographic Office. Observer status is open to any other IHO member state and to national or international organisations and individual experts that have professional involvement in hydrographic surveying or nautical charting in the area, either by contributing to these or by using derived products.

15 countries are currently members of HCA - of which 14 are COMNAP member countries, and nine more countries are eligible for membership - all COMNAP member countries. Current members of the HCA are Argentina, Australia, Chile, China, France, Germany, Greece, India, Italy, New Zealand, Norway, Russia, South Africa, Spain and the United Kingdom.

Observers include COMNAP, the Antarctic Treaty Secretariat, SCAR, IAATO, the International Maritime Organization (IMO) and the Intergovernmental Oceanographic Commission (IOC).

The work of the HCA is endorsed and commended by the ATCM, which welcomes every year in plenary from the IHO a report on HCA activities. ATCM Resolution 3 (2003) encouraged Parties to contribute to the work of the HCA.

Put very simply, the aim of the HCA is to provide for safe navigation in Antarctic waters through improved charts and navigational aids.

The results of a successful, productive HCA will mean for Antarctic operators:

- increased safety margins;
- safe access to more areas; and
- fewer grounding or sinking incidents - that is better protection of life, financial savings, fewer risks of marine pollution, reduced environmental impacts and reduced exposure to liabilities under Annex VI (on Liability Arising from Environmental Emergencies) of the Madrid Protocol.

The objectives and activities of the HCA are very much in line with all three terms of reference of the COMNAP Working Group on Ship Operations (SHIPOPS) which has engaged in developing a

constructive, productive relationship with the HCA and in contributing to its work – the potential for mutual benefits is significant. Contributions would include:

- collaborating to the definition of HCA priorities in accordance with, and support of, the operational needs of the Antarctic Programs;
- identifying ways in which National Programs could further support and contribute to hydrographic survey work, in particular through ships of opportunity; and
- collaborating on the development of a document on hydrography in Antarctica, "why and how", which could be used both to educate the general public and continue gaining widespread support for hydrography in support of safer navigation in the Antarctic region.

The July 2006 COMNAP annual meeting COMNAP XVIII will include a special session on hydrography to review the status of, and need for, involvement in the work of the HCA and develop terms of reference and a work plan for a productive relationship between COMNAP and the HCA for the benefit of safer navigation in Antarctic waters.

3.9 Accident, Incident and Near-Miss Reporting (AINMR)

COMNAP developed and maintains an Environmental Incident Reporting System (EIRS) based on reasonably simple, structured forms filled online through the COMNAP web site. The form includes a field for description of the response to the event and follow-up. The system can generate simple anonymised reports.

The COMNAP Standing Committee on Antarctic Logistics and Operations (SCALOP) has had for many years an effective Accident Incident and Near-Miss Reporting (AINMR) process whereas relevant information is circulated to, and discussed by, the SCALOP community. This concerns all operational events of significance, whether or not they involve an enviromental impact. While the current, simple system seems sufficient for most purposes, the value of a more structured AINMR reporting system had been discussed and SCALOP confirmed at its 2004 meeting its intention to move towards an electronic reporting format similar to that used for environmental incident reporting. This would retain the original intention to reduce the amount of detail to limit reporting requirements to that information that assists with the avoidance of future accidents and should provide a simple means of entering the required fields of information for AINMR.

It is clear that there is logic in, and significant potential for, considering designing an AINMR system that could also incorporate and act as an EIRS system. Both systems have obvious overlap and possible duplications. A number of recent discussions have all converged on the logic and benefit of integrating the two systems into a proposed AINMR system. This does not seem to have any disadvantage and presents a number of advantages, including:

- significant reduction in the duplication of information and reporting requirements;
- provision of a single, 'familiar' reporting interface and a need for only one single system to design, maintain and upgrade;
- capability of generating unified reports on incidents and near-misses, whatever their consequences, and on lessons learned and actions taken;
- reinforcement of the message, both within and outside COMNAP, that environmental protection is not a separate issue or discipline but is integral to operations just like safety of life is – and that while it is and will remain a priority for operators it is essentially ongoing, routine work;
- capability of generating automated reports integrated into a reworked SCALOP report format and into reports as required under Resolution 6 (2001); and
- possibility of taking near-misses into account rather than only accidents that did occur.

A number of National Programs do already have their internal, structured reporting system and there would evidently be value in being able to interface with such systems. Intersessional work was initiated in 2004/2005 on that issue.

An electronic system to support the Antarctic Treaty requirements for Exchange of Information as well as a State of the Antarctic Environment Reporting (SAER) system were under consideration at the same time and there would be value in being able to interface with, and automatically feed relevant information to, these systems. Development of an AINMR/EIRS format and workflow could be done effectively and productively in parallel and coordination with these other ongoing projects. Intersessional work was initiated there too in 2004/2005, in particular through COMNAP's participation in the relevant ATCM-mandated Intersessional Contact Groups.

CEP VIII raised and discusssed the issue of responses to reports of environmental incidents and COMNAP offered *to liaise with the CEP about developing a mechanism to respond to reports of environmental incidents*, reports that would come through an AINMR/EIRS system.

Work continued intersessionally in 2005/2006, including through participation in the work on Environmental Monitoring and through the COMNAP workshop on the review of fuel guidelines. A detailed review and assesment of the existing EIRS system was conducted . A draft design for a simple, integrated electronic Accident Incident and Near-Miss Reporting (AINMR) system is in preparation. Guiding principles and priorities include:

- Recognise the value of, and logic in, merging Environmental Incident Reporting into an integrated Accidents, Incidents and Near-Miss Reporting (AINMR) system;
- Keep the base system as simple as possible to encourage use - allow early submission of incomplete reports and make it easy to update and expand on reports at a later date as required;
- Provide the option to automatically trigger notification messages when reports are submitted and/or updated, with the submitter of the report able to select if and where notifications messages should go – this could include automated notification to the Antarctic Treaty secretariat in formats compliant with current reporting requirements;
- Use for the categorisation of types of incidents or impacts of a simple yet meaningful list of options - establish a process for adjusting these options if needed, keeping in mind the importance of preserving the integrity and value of past reports;
- Include simple yet unequivocal means of including in reports the geographic position and extent of events and any associated impacts:
- Provide a facility for adding to the base information optional elements such as digital images and reports;
- Provide a facility to add information on success of follow-on actions;
- Allow automatic generation of reports and statistics for input into both operational and environmental management decisions;
- Ensure provision of value added services (eg automated National Program reports) of benefit to those entering the data to further encourage and reward reporting;
- Make members aware of the potential of the system in helping them with designing prevention measures;
- Promote and facilitate the use of the system; and
- Ensure that anonymised statistics on AINMR reports are regularly circulated at all levels within National Programs.

A draft design of the new, integrated AINMR system will be reviewed, discussed and moved forward in July 2006 in a special session of the COMNAP annual meeting COMNAP XVIII. The ATS will be kept informed on progress.

3.10 SCALOP symposium on Antarctic Logistics and Operations

In conjunction with COMNAP XVIII, the COMNAP Standing Committee on Antarctic Logistics and Operations (SCALOP) will hold its now traditional, biennial *SCALOP Symposium on Antarctic Logistics and Operations.*

The 12th SCALOP Symposium titled *Going Forward Together, Safely and Efficiently* will be held in Hobart, Tasmania, on Thursday 13 July 2006. Oral and poster presentations have been sought in the following topics:

- Safety
    - Field-based collaboration
    - SAR
    - Emergency Response
    - Contingency Planning
    - Management of Antarctic Air Operations
- New technologies
    - Fuel management and related technologies
    - New Research Stations
    - Automation and related IT/communication systems
    - Energy reduction
    - Unmanned vehicles

The symposium will start with two keynote addresses one in each of the two main themes followed by a series of oral presentations and will conclude by a poster session.

3.11 Use of inspection checklists as a management tool

It was reiterated at CEP VIII and ATCM XXVIII that the use of information in the format of the inspection checklists could be a very valuable management tool. Working Paper ATCM XXVIII-WP032 *Report of Joint Inspections under Article VII of the Antarctic Treaty and Article 14 of the Environmental Protocol* recommended that parties should prepare, submit and regularly update detailed reports on their stations and other facilities in the format of the inspections checklists. COMNAP *noted that it had previously committed to make information available on its website to meet the requirements of the Antarctic Treaty inspection checklist and the requirements of Resolution 6(2001)*. COMNAP confirmed that this was a work in progress.

Progress has continued as part of the development of new, expanded electronic systems for the collection, distribution and management of Antarctic operational information. The core structure and workflows of the new system have been designed and are being initially tested and refined through a pilot project using information on (1) medical facilities and (2) telecommunications facilities. Structure of the information does allow identification and extraction of those fields of information that are relevant to Inspections Treaty Checklists and to reporting requirements under Resolution 6 (2001). The system will include the facility to generate appropriate reports and merge all relevant information as required.

Very importantly, the COMNAP system will include the capacity to send appropriate subsets of information to, or receive them from, the systems put in place by the Antarctic Treaty Secretariat, so that any information has to be entered only once.

The pilot project including medical and telecommunications facilities information should be demonstrated and reviewed in July 2006 during the COMNAP annual meeting COMNAP XVIII. Once the concept is finalised, other types of information will be added progressively, in particular station, ship and airfield information and incident reports.

The system will include specific functionality to support the use of inspection checklists as a management tool. It will facilitate the process of conducting audits, building audit reports and analysing these reports. The system will allow generation of actual checklist forms with tick-boxes and with boxes for text comment against individual portions of the information. Initially this may be restricted to static forms that one can print and take away on an audit or formal inspection. Later this will include forms that can be filled online, with the capability to attach external information such as images or documents. It will be possible to aggregate into one report a number of separate audits of the same facility that one has access to. The user filling the form will have the prerogative to decide who can later view the audit report – clear understanding and control of who can view reports being essential to supporting use of the system as an effective management tool at different levels, from internal audits to joint National Programs audits to formal Treaty inspections.

The ATS will be kept informed on progress, and close collaboration will be maintained with the Antarctic Treaty Secretariat to avoid duplication and ensure that the same information does not have to be entered twice in two different systems.

3.12 Joint operations and stations; exchange of personnel between National Programs

The desire for more joint operations in the Antarctic is expressed regularly within the ATS. Specific questions have been raised over the years about whether new stations were needed and on how we could encourage and facilitate the use/reuse of stations and the creation of joint stations. In 2005 ATCM XXVIII-WP032 *Report of Joint Inspections under Article VII of the Antarctic Treaty and Article 14 of the Environmental Protocol* included the recommendations:

- That construction of stations at previously unoccupied sites in Antarctica should be minimised and any such new sites should be located with a view to optimising science, whilst minimising environmental impacts; and
- That Parties, particularly those that have recently acquired status within the Antarctic Treaty System, should consider joint operations in Antarctica, thereby minimising the environmental impact of constructing new facilities.

COMNAP is evidently committed to facilitating and promoting collaboration between National Programs and joint activities when possible. This is one of COMNAP's main missions.

The National Antarctic Programs have their foundation in the early expeditions sent to explore, map and study Antarctica in the 19th and 20th centuries. These early expeditions already relied on international cooperation, as illustrated by the first two winter expeditions: on board the Belgica (1897-1899) under Belgian Adrien de Gerlache and at Cape Adare (1898-1900) under Norwegian Carsten Borchgrevink. These first two wintering parties involved 29 men from 9 different nations, all part of today's 31 COMNAP nations.

COMNAP has its roots in this long-standing, ongoing tradition of international collaboration in the conduct of Antarctic expeditions. Its primary function is to exchange practical, operational information to help all National Programs fulfill their various missions, together or independently, and it includes a strong focus on facilitating and promoting partnerships. COMNAP's current ramping

up of its capabilities to support this function does effectively contribute to increasing its capacity to facilitate and promote joint operations.

It is evident that a number of structural obstacles exist, and COMNAP is addressing one obstacle relevant to its work by working towards providing operational information in a way that can support due identification and recognition of participations in, and contributions to, joint operations and facilities.

Past and current information and reporting mechanisms were essentially designed in a 'national' logic, usually using a physical tree structure where every activity, station or annual report was (and had to) come under the branch of one nation. Such a structure does complicate and hinder a transparent and meaningful reporting of joint activities or facilities and due recognition of the participation and contribution of all participants.

A first example is that the only station currently operated jointly as an integrated single facility, Concordia, had to be separated on the last COMNAP web site into two stations with the same name, each operated by a distinct National Program. On the reporting level, reporting on the station and associated logistics for the purposes of Antarctic Treaty requirements can be done by either or both countries.

A second example is that there is currently no real way of recognising the operation by a National Program of an individual facility such as a laboratory within, and leveraging on existing logistics for, a station operated by another National Program.

The design of COMNAP's new, expanded electronic systems for the collection, distribution and management of Antarctic operational information is addressing those issues and will attempt to facilitate and promote the recognition of participations in, and contributions to, joint operations and facilities. It will be possible to link stations as well as individual 'facility' components of a station to any number of operators, with any operator linked to any number of nations. Ideally it will also include the ability to allocate and define a different level of contribution for each operator, as well as indicating portions of station or expedition population (person-days) for different operators – although to keep things simple and workable this should be kept as a 'more details' extension for use only by those engaged in joint activities.

Ultimately this could allow automated 'national' reports that do include all 'national' contributions to, and participations in, operations led by other nations and usually attributed to those nations only. This could also provide special reports on joint operations and facilities which could be used to identify and recognise both those that contribute to other nations' operations and facilities, and those that do provide others access to their operations and facilities.

This is work in progress about which the ATS will be kept informed.

Two other 'routine' projects wich support the development of joint operations can be noted:

- the ongoing work by the COMNAP Medical Officers Network (MEDINET) on common standards for medical screening for the interchange of personnel between National Antarctic Programs; and
- the current work by the COMNAP Training Officers Network (TRAINET) on Joint Training Initiatives, the objectives of which include increasing the potential for, and facilitating, the exchange of personnel between National Programs and the development of joint or coordinated operations.

3.13 Workshop on National Antarctic Programs joint training initiatives

The COMNAP Training Officers Network (TRAINET) will convene in July 2006 in Hobart, Tasmania for a one-day workshop to focus on

- National Antarctic Programs Joint Training Initiatives

TRAINET is bringing together National Antarctic Program officers tasked to develop and implement training programmes to prepare personnel for deployment in Antarctica by their Program. This typically includes training on operational procedures, use of equipment and infrastructure with strong focus on health and safety and environmentally-sensitive behaviour.

The workshop will focus on the long term objectives of promoting and facilitating the development of Joint Training Initiatives with a view to:

- further reducing duplication of work and effort to increase overall efficiency;
- facilitating the development of more effective training to provide better support to Program operations; and
- increasing the potential for, and facilitating, the exchange of personnel between National Programs and the development of joint or coordinated operations, e.g. through establishment of common training standards.

This will cover training initiatives in a range of domains, and in particular oil spill prevention and response; ship operations; air operations and safety management.

3.14 Exchange of information under Resolution 6 (2001)

COMNAP participated actively in 2004/2005 to the ATCM-mandated intersessional work on Review of the Process for Exchange of Information and welcomed ATCM XXVIII's decision through DECISION 10 (2005) *Establishment of an Electronic Information Exchange System*

that *the Secretariat of the Antarctic Treaty shall, in consultation with other relevant organizations of the Antarctic Treaty System, begin development of an electronic information exchange system and report to ATCM XXIX on its progress*.

COMNAP remains committed

- to liaising with the Antarctic Treaty Secretariat to assist in such development as appropriate; and
- to designing its own systems so that they can interface with the new ATS electronic information exchange system in a way that will benefit both COMNAP members and the ATS.

COMNAP worked with the Antarctic Treaty Secretariat on the analysis of the structure of the information as required through Resolution 6 (2001), in particular through a focused, informal workshop in July 2005.

In parallel with the Antarctic Treaty Secretariat's development of its electronic information exchange system, detailed in ATCM XXIX-SP 9 *Electronic Information Exchange System*, COMNAP continued re-development of its own systems so that both can interface with each other and work complementarily as appropriate. Development of the COMNAP systems is mentioned in more details in other sections of this report.

3.15 Collaboration with the Antarctic Treaty Secretariat

COMNAP has established through its secretariat a good working relationship with the Antarctic Treaty Secretariat and a number of ad-hoc meetings and informal workshops have been held between members of the two secretariats in the last two years.

COMNAP looks forward to its secretariat maintaining a long-standing, productive relationship with the Treaty Secretariat, when and as appropriate, to better support their respective memberships and the Antarctic Treaty System.

3.16 Operational publications

COMNAP publishes a number of operational publications in support of Antarctic operations, in particular in support of safety and best environmental practice. This includes a number of operational guidelines and workshop reports.

COMNAP publishes and regularly updates the *Antarctic Flight Information Manual (AFIM)* which contains exhaustive information on Antarctic airfields and on procedures to contact and access these airfields. It covers airfields operated by both National Programs and private operators affiliated with the International Association of Antarctica Tour Operators (IAATO). The manual is published as a tool towards safe air operations in Antarctica as per ATCM Recommendation XV-20 and as such is provided by the COMNAP Secretariat to all organisations or individuals requesting a copy, for a nominal fee destined to assist with printing costs and with the significant cost of the manual's ongoing maintenance.

Development of a fuel handling and storage manual has been proposed as a result of the recent review of the COMNAP fuel guidelines, and the COMNAP Ship Operations Working Group (SHIPOPS) is currently assessing if there is a need for a shipping information manual.

3.17 General information publications

COMNAP is also publishing some general interest information about COMNAP's activities and National Programs' installations and logistics.

It currently includes:

- a map showing the main facilities operated by National Antarctic Programs in the Treaty area and including detailed tabular information about these facilities as well as about national membership of the main Antarctic bodies – the map is declined in 2 versions:
    - an A0 wall map, available electronically as a high resolution PDF file suitable for A0 printing
    - an A2 folding into A4 printed map that doubles as a brochure presenting COMNAP and its work
- a range of online information accessible on the COMNAP web site, currently undergoing a significant re-development, with a focus on practical information about the operational activities of the National Antarctic Programs
- a 'COMNAP Book' on National Programs Initially published in 2003 with the support of the French National Program, this book provided information on a large number of National Programs and the locations they were operating from. It is intended to decline the book into a 'living book' available online and a more refined printed book updated occasionally.

Protocols have been put in place for input of other layers of information into the existing mapping products.

Essentially, the wall map showing National Program facilities is the master map, with the folding map being constructed from image snapshots of the wall map. The current wall map shows facilities on one layer, with details provided in a table on the side of the map. A new set of information, for example a list of protected areas with their size, year of creation, number of annual visits, flora and fauna species present, can be provided to the makers of the map in the form of a spreadsheet. This

information can then be turned into a new layer on the map, either replacing of superimposing the existing facilities layer, with the details also shown in tabular form on the side of the map.

This would allow with a minimum of cost and effort to produce thematic maps as required, for example maps to illustrate and support environmental monitoring, including State of the Antarctic Environment Reporting (SAER).

3.18 Facilitating and promoting the distribution and use of publications

COMNAP publications are in general intended for as wide a distribution as possible to:

- contribute to operational safety and best practice in the Antarctic; and
- contribute to general Education, Outreach and Communication about Antarctic matters.

Whenever possible, publications are made available online free of charge through the COMNAP web site.

We are also testing additional ways of facilitating and promoting the distribution and use of these publications. This does include releasing publications under alternative licences such as the Creative Commons Attribution Share-Alike 2.5 licence (see *http://creativecommons.org/licences/by-sa/2.5*) which grants to anyone the rights:

- to copy, distribute, display, and perform the work
- to make derivative works
- to make commercial use of the work

Under the following conditions:

- "Attribution" - You must attribute the work in the manner specified by the author or licensor.
- "Share Alike" - If you alter, transform, or build upon this work, you may distribute the resulting work only under a license identical to this one.

The idea behind the use of such a licence is to promote and facilitate the use, distribution, publication and further development of the work published while making sure that the origin of the work is recognised and also that no one is going to build on it then prevent others to continue doing the same. It means that if anyone finds the information useful and continues building on it, the original authors (and indeed anyone else) have their right to use in turn that improved, expanded work formally protected.

It is worth noting that such a licence seems to be very much aligned with the values of the Antarctic Treaty System and there could be potential for both to effectively support each other. This is particularly topical as we are approaching the International Polar Year and its anticipated surge in public interest about polar matters.

3.19 Support of the International Polar Year (IPY) 2007-2008

One of COMNAP's core functions is to facilitate and promote liaison and discussions between National Programs, in particular with a view to facilitating ad-hoc partnerships and coordination between Programs when and as required.

Researchers typically seek and obtain support for Antarctic work through their own National Program. IPY projects involving researchers from different nations and requiring operational support from several National Antarctic Programs are only made possible by the establishment of ad-hoc liaison and partnerships between the relevant Programs.

COMNAP does effectively support the IPY by providing the venue for national operators to put together international programmes given national initiatives, where the whole becomes more than the sum of the parts.

The best and most effective way for COMNAP to support and facilitate the IPY is simply to concentrate on its main, core mission and find new ways to better support and fulfil that mission. COMNAP has engaged in ramping up its capacity to support this core mission ahead of the IPY. This effort is ongoing and involves a range of initiatives including new meeting procedures to facilitate wider participation, improved communication systems and increased secretariat support capacity.

Additional, more targeted actions have also been launched specifically for the IPY.

COMNAP created an IPY Coordinating Group (IPYCG) that coordinates COMNAP's involvement in IPY preparations and maintains contact with the main stakeholders, including the International Council of Scientific Unions (ICSU) and World Meteorological Organization (WMO)'s IPY Programme Office, the Scientific Committee on Antarctic Research (SCAR), the International Arctic Science Council (IASC) and the Forum of Arctic Research Operators (FARO).

IPYCG is also specifically organising for National Programs to compare notes on their national IPY planning efforts (and financial uncertainties). An example of a crucial task is the coordination and scheduling of ships activities bearing in mind that there are major circum antarctic research and monitoring programs on the table. Another example is coordination of the international glacial traverse program. IPYCG will be convening a specific IPY meeting in July 2006 at the COMNAP annual meeting COMNAP XVIII to continue progress.

Recognising the need for, and importance of, outreach in connection with, and at the time of, the IPY, COMNAP has put a significant effort in developing and supporting its Information Officers Network (INFONET). Two terms of reference of INFONET relevant to the IPY are:

- Promote mutual understanding among network members on Education, Outreach and Communication (EOC) activities and facilitate partnerships; and
- Work with ICSU, the Antarctic Treaty Secretariat, the IPY Project Office and SCAR in developing activities of mutual interest.

INFONET held a successful workshop on *Education, Outreach and Communication during the International Polar Year 2007–2009* in Washington D.C., USA, 10-11 April 2006.

A number of possible, promising initiatives were identified and a full report of the workshop is in preparation for submission to, and discussion at, the July 2006 COMNAP annual meeting COMNAP XVIII.

An effective and active INFONET will advance interests of National Programs in EOC and support EOC-related interests of the Antarctic Treaty System. With IPY on the near horizon, INFONET offers an opportunity to fulfil international aspirations for education and public engagement in Antarctic matters.

4. COMNAP General Organisation and Support

4.1 COMNAP meetings and events

'COMNAP XVII', the 2005 annual general meeting, was held in Sofia, Bulgaria, from 12 to 15 July 2005. It was hosted by the COMNAP member for Bulgaria, the Bulgarian Antarctic Institute and included:

- two days of plenary sessions;
- two days of parallel meetings of COMNAP's various committees, working groups and coordinating groups;
- a one-day workshop of the COMNAP Information Officers Network (INFONET); and
- a two-day workshop of the COMNAP Medical Officers Network (MEDINET).

A number of COMNAP group officers ended their term at the meeting. Karl Erb of the US National Program completed his one year term on the Executive Committee as Past Chair. Chair of the Standing Committee on Antarctic Logistics and Operations (SCALOP) Kim Pitt of the Australian Program was succeeded by John Pye of the UK Program. Chair of the Working Group on Tourism and Non-Government Operations (TANGO) Olav Orheim of the Norwegian Program was succeeded by José Retamales of the Chilean Program. Mariano Memolli of the Argentine Program took on the vacant chair of the Medical Coordinating Group (COMED) and Lou Sanson of the New Zealand Program took on the vacant chair of the Coordinating Group on Education and Training (CEDAT).

Later in the year, Coordinator of the Antarctic Environmental Officers Network (AEON) Rebecca Roper-Gee of the New Zealand Program was succeeded by Rodolfo Sánchez of the Argentine Program.

A number of intersessional meetings were held, including

- a meeting of those COMNAP members attending the 2005 ATCM in Stockholm, Sweden, in June 2005; and
- a two-day meeting of the COMNAP Executive Committee in Ansan, Korea, in October 2005 to finalise the conclusions and results of the 2005 annual general meeting and the work plan for 2005/2006.

The 2006 COMNAP annual general meeting, COMNAP XVIII, will be held from 09 to 14 July 2006 in Hobart, Tasmania, where COMNAP was formally founded 18 years ago and where its secretariat has been based for the last nine years. The meeting will be hosted by the COMNAP member for Australia, the Australian Antarctic Division. It will include:

In addition to the usual meetings of the COMNAP Council, Committees, Working Groups and Coordinating Groups, COMNAP XVIII will also include:

- two days of plenary sessions;
- two days of parallel meetings of COMNAP's various committees, working groups and coordinating groups;
- a two-day workshop of the COMNAP Antarctic Environmental Officers Network (AEON) focusing on information exchange on C*urrent Waste Management Practices* and C*lean-up of Abandoned Sites*;
- a one-day workshop of the COMNAP Training Officers Network (TRAINET) on *National Antarctic Programs Joint Training Initiatives;*
- a one-day workshop of the COMNAP Energy Management Network (ENMANET);
- special sessions on:
    - Incident reporting;
    - Safety;
    - Fuel Guidelines;
    - Hydrography.

4.2 COMNAP IT support infrastructure

COMNAP has continued to progress the re-development of its IT support infrastructure, the guiding principles being to:

- Simplify and reduce the amount of time and resources required from members to participate in COMNAP group activities and to report information required by COMNAP or the Antarctic Treaty System;
- Maximise the use and reuse of information provided through the COMNAP system, by COMNAP, individual National Programs and, when and as appropriate, other organisations, and more generally provide value adding that does promote and reward input of information into the system;
- Maintain a constant dialogue with the Antarctic Treaty Secretariat, and others as appropriate, to ensure that their system and the COMNAP system can exchange information exchange information with the Antarctic Treaty Secretariat systems, and other systems as appropriate, with a strong focus on avoiding duplication of data entry;
- Provide tools that are consistent with, and support, COMNAP organisational structure, terms of reference and practical needs;
- Support the creation of a comprehensive and useable 'corporate memory' archive repository, recognising that COMNAP's best and most fragile asset is constituted by individual members of the National Programs and their knowledge and experience;
- Allow collection, aggregation and presentation of information that are consistent with, and support, agreed priority objectives such as for example facilitating joint operations or providing operational indicators for State of the Environment Reporting; and
- Base the systems on open standards, open formats and robust open source software. It provides, in the long term, the best chance of successfully implementing, maintaining and further developing a useful system for COMNAP able to exchange data with the systems of other organisations. It will also make it possible for National Programs and other stakeholders to freely use parts or all of the tools developed without restrictions or ongoing licence fees, and modify them as needed. It is worth noting that the concept of 'open standards, open formats and open source software' is very much aligned with the values of the Antarctic Treaty System and there is probably great potential for both to effectively support each other.

As illustrated in a number of sections of the present report, this development of the IT support infrastructure does contribute to, and support, a number of COMNAP activities but also interactions with others on projects such as the ATS Exchange of Information, environmental monitoring including State of the Antarctic Environment Reporting (SAER), hydrography, mechanisms to respond to reports of environmental incidents or the support of the International Polar Year.

The first element of this new infrastructure is a group collaboration portal that does manage, structure and support the work of COMNAP's various groups while providing them with an archive repository of their resources, discussions and reports. This was brought on line in January 2006 and uptake of the new system is progressing well.

The second element is the new, expanded electronic system for the collection, distribution and management of Antarctic operational information such as station, ship and airfield details, incident reports or expedition details. A number of aspects of this system have been described in some details in other sections of this report, in particular in relation to State of the Antarctic Environment Reporting (SAER); Accident, Incident and Near-Miss Reporting (AINMR); Inspection Checklists as a Management Tool; Joint Operations; and Exchange of Information under Resolution 6 (2001).

This system will be designed so that it can exchange information with the Antarctic Treaty Secretariat systems, and other systems as appropriate, with a strong focus on avoiding duplication of data entry.

4.3 COMNAP Secretariat operation

The COMNAP Secretariat operates from an office located in Hobart, Tasmania, Australia provided at no charge by the secretariat's supporting organisation, the Tasmanian State Government through its office of Antarctic affairs 'Antarctic Tasmania'. This invaluable support has now been provided since 1997 and the current support agreement runs until September 2009. The free support provided by Antarctic Tasmania includes a range of office equipment and administrative support, notably through accounting and auditing services.

COMNAP resolved in July 2005 at its COMNAP XVII meeting in Sofia, Bulgaria, to move its secretariat from part time to full time operation for an initial duration of two years. This was in line with the desire to ramp up its capacity to support COMNAP's operation and core missions ahead of the IPY. It was also resolved, to simplify and better formalise employment arrangements to ask the Tasmanian State Government to organise, on a cost recovery basis, employment of the COMNAP Executive Secretary who would technically become an employee of the State of Tasmania, with all the additional protection and support it does entail, while still reporting directly to the COMNAP Chair.

The Tasmanian State Government responded very positively to these requests for additional support, reafirming its commitment to supporting the COMNAP Secretariat. A specialist position was created as required within the Tasmanian State Service for the COMNAP Executive Secretary. COMNAP is very thankful to the Tasmanian State Government for its continued and increased support which allow its secretariat to operate very efficiently and in a quality, supportive environment.

The COMNAP Secretariat is continuing to consolidate business systems and procedures with a view to increasing its capacity to support COMNAP effectively. This provides further operational efficiencies and systems that are more scaleable and responsive to change. It does involve better structuring and documentation of processes to provide increased transparency and to facilitate possible changes in staff or office location. This is part of a larger overhaul of COMNAP's organisation and work processes. Ultimately, the objective is to put COMNAP in a better position to serve its members and the Antarctic Treaty System by integrating into its operations the latest standards of corporate governance and management.

4.4 Member participation and capacity building

COMNAP started implementing in 2005/2006 a number of procedures to facilitate member participation in meetings and intersessional group work, especially for members that do not routinely use English as a working language. COMNAP cannot properly achieve its goals if a number of members cannot adequately participate to the debates and contribute their valuable skills, experience and views. A number of new meeting procedures were succesfully trialled at the July 2005 annual meeting COMNAP XVII in Sofia, Bulgaria. More printed material was provided, significant proposals were only discussed if provided in writing, on paper or on screen, and visual aids were used throughout the meeting . The new IT support infrastructure intends to, and will, provide more intuitive user interfaces relying more on clear, logical workflow and on graphics and less on detailed wording. A multilingual interface may be considered for a number of important tools when made possible and practical by the platforms used. The platform used for the new group collaboration portal already includes natively an extensive multi-lingual and multi-alphabet capability.

Capacity building between National Programs is already implicit within COMNAP objectives and terms of reference and is embedded in the structure and procedures of the organisation. Increased member participation as described above will also contribute to improve capacity building, as will

the new IT support infrastructure. This capacity building is naturally focused on increasing each program's ability to manage and carry-out their operations, ultimately to the benefit of all stakeholders that rely on these Antarctic operations for any of their activities.

Appendix 1

Poster *Antarctic Operational Indicators – Select from our exciting menu!*
(Poster presented for discussion at both the CEP strategic workshop 09-10 June 2006 and the COMNAP annual meeting COMNAP XVIII 09-14 July 2006.)

Appendix 2

Main Antarctic facilities operated by the National Antarctic Programs in 2006 in the Antarctic Treaty Area (South of 60 degrees latitude South)

This outlined information is extracted from maps produced by COMNAP. See http://www.comnap.aq/publications/maps for more information and for downloadable versions of these maps.

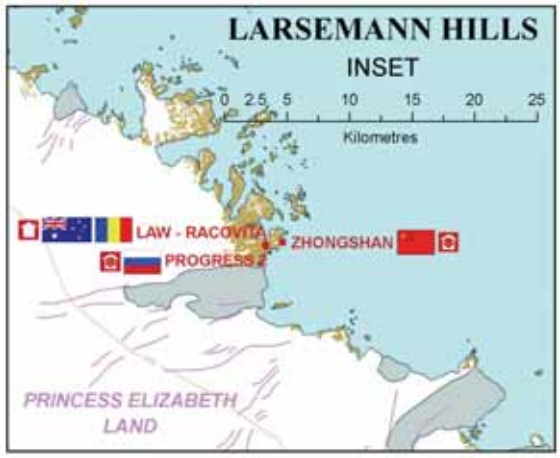
This contains:

- Details of Antarctic facilities, in tabular form (not included)
- General map showing facilities in the Antarctic, in relation to surrounding continents (not included)
- Maps showing location of facilities
  - zoom on Antarctic continent
  - zoom on Bransfield Strait
  - zoom on King George Island
  - zoom on Larseman Hills

The Council of Managers of National Antarctic Programs (COMNAP
www.comnap.aq – info@comnap.aq

Map showing location of facilities - zoom on Antarctic continent

Map showing location of facilities - zoom on Larseman Hills



Map showing location of facilities - zoom on Bransfield Strait

Map showing location of facilities - zoom on King George Island

Appendix 3

Terms of Reference (TORs), Tasks and Officers of COMNAP groups (Committees, Working Groups, Coordinating Groups and Networks) for 2005/2006

The Council of Managers of National Antarctic Programs (COMNAP)

COMNAP Groups 2005-2006
(Committees, Working Groups, Coordinating Groups and Networks)

1. Overview – Group names, acronyms and brief descriptions

Committees

COMNAP Executive Committee (EXCOM)	EXCOM has both a strategic role – developing policy and directions submitted to the COMNAP Council for discussion, adjustment and approval - and a tactical role - implementing decisions taken by the COMNAP Council, usually at its Annual General Meeting. It is responsible for COMNAP matters between meetings of the COMNAP Council. EXCOM has a membership comprising: - the COMNAP Chair - three COMNAP representatives - the Chair of COMNAP's Standing Committee on Antarctic Logistics and Operations (SCALOP) - the COMNAP Executive Secretary - the retiring COMNAP Chair, for one year after its mandate expires. The COMNAP Executive Secretary is secretary to both COMNAP and EXCOM and is a non-voting member of EXCOM.
COMNAP Standing Committee on Antarctic Logistics and Operations (SCALOP)	SCALOP brings together the director/manager of logistics and operations of each National Antarctic Program, also referred to as the national "SCALOP representative". The national SCALOP Representatives are members of the COMNAP Council alongside the directors/managers of the National Antarctic Programs, also referred to as the national "COMNAP Representatives" or "Managers of National Antarctic Programs (MNAPs)".

Working Groups

COMNAP Working Group on Air Operations (AIROPS)	AIROPS deals with all aspects of air operations in support of National Antarctic Program activities. It does also liaise, for safety reasons, with other air operators as appropriate, in particular in the publication of the Antarctic Flight Information Manual (AFIM).
COMNAP Working Group on Tourism and Non-Government Operations in Antarctica (TANGO)	TANGO deals with all aspects of interactions between National Antarctic Programs (NAPs) and all other (non-NAP) Antarctic Operations. While the working group name has historically referred only to Tourism (as in "organised, commercial tourism") and to Non-Government (as in "private") operations, the scope of its work extends to any operations organised outside the formal mission of National Antarctic Programs members of COMNAP.
COMNAP Working Group on Ship Operations (SHIPOPS)	SHIPOPS deals with all aspects of ship operations in support of National Antarctic Program activities. It does also liaise, for safety and environmental reasons, with other ship operators as appropriate. It does also contribute to the efforts of the International Hydrographic Organisation (IHO) Hydrographic Committee on Antarctica (HCA) to improve safety of navigation in Antarctic waters through improved charting.
COMNAP Antarctic Logistics and Operations Symposium Working Group (SYMP)	SYMP oversees and organises the biennial Symposium on Antarctic Logistics and Operations ("SCALOP Symposium"), organised in even years alongside the COMNAP annual general meeting and the SCAR Open Science Conference. The SCALOP Symposium usually includes a trade exhibition.

Coordinating Groups

A coordinating group is a small groups of COMNAP Council members that does oversee and guide the work of one or more networks and acts as the link between the COMNAP Council and the relevant network(s)

COMNAP Coordinating Group on Education and Training (CEDAT)	CEDAT oversees and guides the activities of the COMNAP Training Officers Network (TRAINET) and the COMNAP Information Officers Network (INFONET), and acts as the link between the COMNAP Council and the two networks.
COMNAP Coordinating Group on Energy Management (CENMAN)	CENMAN oversees and guides the activities of the COMNAP Energy Management Officers Network (ENMANET), and acts as the link between the COMNAP Council and the network.
COMNAP Medical Coordinating Group (COMED)	COMED oversees and guides the activities of the COMNAP Medical Officers Network (MEDINET), and acts as the link between the COMNAP Council and the network.
COMNAP Environmental Coordinating Group (ECG)	ECG oversees and guides the activities of the COMNAP Antarctic Environment Officers Network (AEON), and acts as the link between the COMNAP Council and the Network.
COMNAP International Polar Year (IPY) Coordinating Group (IPYCG)	IPYCG oversees and guides the IPY-related activities and concerns of the COMNAP IPY Network, and acts as a link between the COMNAP Council and the Network. The COMNAP IPY Network is a virtual network that includes all members of the COMNAP Council.

Networks

A network brings together officers of National Antarctic Programs that have to deal at a practical and technical level within their Program with similar matters

COMNAP Antarctic Environmental Officers Network (AEON)	AEON brings together those officers of the National Antarctic Programs that have to deal with practical and technical environmental aspects of National Antarctic Program operations. AEON's work does not interfere with, but rather complements, the work of other Antarctic environmental groups such as the Committee for Environmental Protection (CEP), whose mission and sphere and competence are very different. .
COMNAP Energy Management Officers Network (ENMANET)	ENMANET brings together those officers of the National Antarctic Programs that have to deal with practical and technical energy management aspects of National Antarctic Program operations.
COMNAP Training Officers Network (TRAINET)	TRAINET brings together those officers of the National Antarctic Programs that have to deal with practical and technical aspects of training personnel to participate in National Antarctic Program operations.
COMNAP Information Officers Network (INFONET)	INFONET brings together those officers of the National Antarctic Programs that have to deal with practical and technical aspects of communicating to the public the activities of their National Antarctic Program.
COMNAP Medical Officers Network (MEDINET)	MEDINET brings together those officers of the National Antarctic Programs that have to deal with practical and technical medical aspects of National Antarctic Program operations.

2. Group officers, terms of reference and tasks

Notes:

- Tasks indicated are tasks for the period July-2005 to June-2006, that is between the 2005 annual meeting COMNAP XVII (Sofia) and the 2006 annual meeting COMNAP XVIII (Hobart). These tasks exclude specific «COMNAP XVII Actions».
- The origin shown is the 2-letter ISO 3166-1-alpha-2 country code of the National Antarctic Program that person is affiliated with.

COMMITTEES

<table>
<tr><th colspan="3">Executive Committee (EXCOM)</th></tr>
<tr><td>Name (Function) Term</td><td>Origin</td><td>Group Role, Terms of Reference (TORs), Tasks</td></tr>
<tr><td>Gérard Jugie (Chair)
Chair 08-2004 to 07-2007</td><td>FR</td><td rowspan="6">EXCOM is responsible for COMNAP matters between Council meetings that are chaired by the Council Chairperson.

The Committee has a membership comprising
• the Council Chairperson (‘Chair’),
• three COMNAP representatives (‘Rep’),
• the SCALOP Chairperson (‘SCALOP Chair’) and
• the Executive Secretary (‘Exec Sec’).

In addition, the retiring council chairperson (‘Past Chair’) remains on the Committee for one year following his/her retirement. The term of COMNAP members on the Committee is three years.

The Executive Secretary is secretary to both COMNAP and EXCOM and is a non-voting member of EXCOM.</td></tr>
<tr><td>Jorge Berguño (Rep)
Rep 08-2003 to 07-2006</td><td>CL</td></tr>
<tr><td>Yeadong Kim (Rep)
Rep 08-2004 to 07-2007</td><td>KR</td></tr>
<tr><td>Henry Valentine(Rep)
Rep 08-2004 to 07-2007</td><td>ZA</td></tr>
<tr><td>John Pye (SCALOP Chair)
SCALOP Chair to 07-2008</td><td>UK</td></tr>
<tr><td>Non-voting member:</td><td></td></tr>
<tr><td>Antoine Guichard (Exec Sec)
Exec Sec 10-2003 to 09-2009</td><td>n/a</td><td></td></tr>
</table>

<table>
<tr><th colspan="3">Standing Committee on Antarctic Logistics and Operations (SCALOP)</th></tr>
<tr><td>John Pye (Chair)
Chair 08-2005 to 07-2008</td><td>UK</td><td rowspan="2">TORs
• Provide COMNAP with technical advice on Antarctic logistics and operations
• Investigate and, where necessary, arrange for research on operational problems identified by COMNAP and its working groups
• Address technical and operational matters of mutual interest to other national operators
• On behalf of COMNAP – monitor, review, report and advise on Accident, Incident and Near Misses Reporting (AINMR)
Tasks
• Establish an AINMR standard reporting format for the web site
• capitalise on the theme of the Bremen Symposium and identify opportunities to better assist COMNAP to participate in in IPY matters
• Contribute to the review of fuel handling and storage guidelines led by the COMNAP Environmental Coordinating Group (ECG)
• Explore the need to establish a COMNAP Working Group on Safety</td></tr>
<tr><td>Membership of SCALOP comprises the director/manager of logistics and operations of each National Antarctic Program.</td><td></td></tr>
</table>

WORKING GROUPS

Working Group on Air Operations (AIROPS)		
Valery Klokov (Chair) *Chair 08-2004 to 07-2007*	RU	**TORs** • Continue implementation of ATCM Recommendation XV-20 of 1989 on *Air Safety in Antarctica* • Maintain the Antarctic Flight Information Manual (AFIM) with timely distribution of amendments • Share and discuss operational experience and information on new technology related to Antarctic air operations and associated communication, navigation, the avoidance of mutual interference, and contingency response • Review the air transport aspects of international cooperation in Antarctic science and support • Continue to review developments in the use of existing or additional air links, and the use of blue ice or compacted snow landing sites **Tasks** • Investigate member policies on airfield access • Propose a draft preamble to the AFIM for consideration by the COMNAP Executive Committee (EXCOM) at its October 2005 meeting • Identify current National Search and Rescue (SAR) arrangements for aircraft operations and develop principles for SAR cooperation between operators • Assist the COMNAP Medical Officers Network (MEDINET) in its work on developing formats for medical information for use in medical evacuations

Working Group on Tourism and NGOs (TANGO)		
Jose Retamales (Chair) *Chair 08-2005 to 07-2008*	CL	**TORs** • Review non-NAP activities of common concern to National Antarctic Programs (NAPs), including non-IAATO operations and adventure tourism activities **Tasks** • Survey members to gather statistics and other information on the interaction between National Antarctic Program (NAP) operations and other (non-NAP) operations, looking at both negative and positive impacts of such interactions

Working Group on Ship Operations (SHIPOPS)		
Manuel Catalan (Chair) *Chair 08-2004 to 07-2007*		**TORs** • Give consideration to, and make recommendations on, further developments as well as promote the introduction of appropriate information on shipping in Antarctic waters • Assess and evaluate relevant recommendations and measures of maritime and other organizations as well as provide input and, if necessary, take part at relevant meetings, for example the meetings of the Hydrographic Committee on Antarctica (HCA) • Share and discuss operational experiences and information related to Antarctic ship operations and associated communication, navigation and contingency response **Tasks** • COMNAP/SHIPOPS to have an observer at the 5th meeting of the Hydrographic Committee on Antarctica (HCA) and report to EXCOM and COMNAP on the value of the relationship with the HCA • Conduct a survey on National Program ships to collect information on the kind of acoustic equipment present on board for research and for navigation; on the use of antifouling paint in antarctic waters and, as a complement to last year's survey, on ballast water practices. Pass the information to COMNAP • Update the 2005 paper on ballast water practices to contribute, in conjunction with SCALOP and ECG, on the guidelines for ballast water exchange in the Antarctic Treaty Area prepared by an ATCM-mandated Intesessional Contact Group • Write an information paper on antifouling paints for the next ATCM • Survey the membership to determine if there is a requirement for an Antarctic Shipping Information Manual

Symposium Working Group (SYMP)		
Kim Pitt (Chair) *Chair 08-2004 to 07-2006*		**TORs** • Review the previous Symposium on Antarctic Logistics and Operations and develop plans for the next event **Tasks** • Organise 2006 SCALOP Symposium in conjunction with COMNAP XVIII • Consider options for the publication of SCALOP Symposium papers in scientific and engineering journals

COORDINATING GROUPS

Coordinating Group on Education and Training (CEDAT)		
Lou Sanson (Chair) *Chair 08-2005 to 07-2008*	NZ	**TORs** • Guide and coordinate the progress of the Information and Training networks and report to COMNAP on the activities of the networks at its annual meeting, and inter-sessionally should the need arise • Guide and support, as needed, the development of the networks and review the terms of reference each year
Karl Erb	US	
Hosung Chung	KR	
Yves Frenot	FR	
Ex-officio guest(s) to parts of the Coordinating Group's meetings:		
Patricio Eberhard (TRAINET Coordinator - *to 07-2007*)	CL	
Jan Stel (INFONET Coordinator - *to 07-2007*)	NL	

Coordinating Group on Energy Management (CENMAN)		
David Blake (Chair) *Chair 08-2003 to 07-2006*	UK	**TORs** • Develop goals and provide guidance on the development of energy management practices with a view to reducing environmental impacts and reliance on fossil fuels • Monitor and identify emerging technologies that may have an impact on activity in Antarctica and report to COMNAP at the annual meeting • Monitor the progress of the Energy Management Network (ENMANET) and report to COMNAP on the activities of the network at its annual meeting, and inter-sessionally should the need arise • Review the terms of reference and tasks each year
Patrice Godon	FR	
Julian Tangaere	NZ	
Jan-Gunnar Winther	NO	
Ex-officio guest(s) to parts of the Coordinating Group's meetings:		
TBA (ENMANET Coordinator - *to 07-200X*)	XX	

Medical Coordinating Group (COMED)		
Mariano Memolli (Chair) *Chair to 07-2008*	AR	**TORs** • Task and oversee the work of Medical Network (MEDINET) • Report to COMNAP on the activities of the network at its annual meeting • Review the terms of reference and tasks each year
Kim Pitt	AU	
Erick Chiang	US	
Ex-officio guest(s) to parts of the Coordinating Group's meetings:		
Claude Bachelard (MEDINET Coordinator - *to 07-2006*)	FR	

Environmental Coordinating Group (ECG)		
Lou Sanson (Chair) *Chair 08-2003 to 07-2006*	NZ	**TORs** • Provide liaison between the COMNAP Council and the Antarctic Environmental Officers Network (AEON) • Direct the development and preparation of responses to COMNAP requests with copies of all charges to AEON to be sent electronically to the COMNAP Council • Report to COMNAP on the activities of the network at the COMNAP annual general meeting, and inter-sessionally, as issues arise • Develop methods for coordination of monitoring activities to avoid wasteful duplication and ensure effective use of resources **Tasks** • Coordinate the review of the fuel handling and storage guidelines and provide resulting recommendations to COMNAP • Report to COMNAP on the results of the Biological Monitoring Workshop and how these may be taken forward • Coordinate preparations of a an information paper reporting on the Biological Monitoring Workshop to ATCM XXIX
Maaike Vancauwenberghe	BE	
Heinz Miller	DE	
Henry Valentine	ZA	
Ex-officio guest(s) to parts of the Coordinating Group's meetings:		
Rebecca Roper-Gee (AEON Coordinator – *to 12-2005*)	NZ	
Rodolfo Sánchez (AEON Coordinator – *01-2006 to 07-2009)*	AR	

IPY Coordinating Group (IPYCG)		
Anders Karlqvist (Chair) *Chair to 07-2007*	SE	**TORs** • Encourage multi-national logistical partnerships and the integration of technological developments to advance the scientific goals established for IPY • Track progress by the virtual IPY Network (IPYNET), consisting of all members of the AMEN list, in developing new or strengthening existing partnerships or in advancing technological developments in furtherance of IPY goals • Review the IPYCG terms of reference at each annual meeting **Tasks** • Work with EXCOM to find ways to provide COMNAP members with up-to-date information on the IPY process as viewed from an operational/management perspective • Report to COMNAP at COMNAP XVIII in Hobart • co-organise and co-chair with SCAR a joint SCAR-COMNAP IPY session alongside COMNAP XVIII in Hobart • Maintain contact with external organisations as needed
Patricio Eberhard	CL	
Yaedong Kim	KR	
Valery Lukin	RU	
Henry Valentine	ZA	

NETWORKS

<table>
<tr><th colspan="3">Antarctic Environment Officers Network (AEON)</th></tr>
<tr><td>Rebecca Roper-Gee (Coordinator)
Coordinator to 12-2005</td><td>NZ</td><td rowspan="2">TORs
Exchange information and ideas about practical and technical environmental issues on Antarctica
Promote mutual understanding among Network members on the practical application of the Environmental Protocol to national programs
Respond to requests from COMNAP for advice on environmental issues
Tasks
Encourage uptake of best practices for monitoring
Initiate AEON discussion on biosecurity threats and management practices and advise ECG of conclusions
Improve information exchange through the COMNAP web site including:
1.Updating the list of ongoing monitoring activities
2.Copies of environmental assessments and authorisations (such as IEEs and CEEs) for the information only of other members
3.Waste management at Antarctic stations and sites
Initiate AEON discussion on
- practical application of State of the Environemnt indicators: in particular parametesr to measure the assessment of human impact at visited sites
- methodology for evaluating impacts as part of the environmental impact assessment process
and inform ECG of results of such discusions
Arrange an AEON Information Sharing Workshop as part of COMNAP XVIII in Hobart on clean-up and waste management</td></tr>
<tr><td>Rodolfo Sánchez (Coordinator)
Coordinator 01-2006 to 07-2009</td><td>AR</td></tr>
</table>

Energy Management Network (ENMANET)		
To Be Advised (Coordinator) *Coordinator to 07-200X*	XX	**TORs** • Determine the extent to which national Antarctic programs effectively utilise energy management and conservation processes. This includes the employment of both conventional and alternative energy technologies. Specifically the working group shall examine: ▪ the type of systems employed ▪ the maximum and average power output of the systems ▪ the capital and operating costs ▪ problems encountered in operation, if any • Facilitate the exchange of operating experience and encourage cooperative projects in alternative energy and emerging technologies **Tasks** • Update the energy usage survey

Training Network (TRAINET)		
Patricio Eberhard (Coordinator) *Coordinator to 07-2007*	CL	**TORs** • Exchange information and experience on training programs including manuals, techniques, procedures and training aids • Promote initiatives between national programs in order to develop and facilitate closer cooperation **Tasks** • Organise a workshop in conjunction with COMNAP XVIII in Hobart, focused on National Antarctic Programs joint training initiatives

Antarctic Information Officers Network (INFONET)		
Jan Stel (Coordinator) *Coordinator to 07-2007*	NL	**TORs** • Exchange information, views and ideas about education, outreach and communication (EOC) activities within comnap and on behalf of comnap members or parts of its membership • Promote mutual understanding among network members on EOC activities and facilitate partnerships • Respond to requests from comnap on EOC issues • Work with ICSU, the Antarctic Treaty secretariat, the IPY project office and SCAR in developing activities of mutual interest **Tasks** • Establish an active network • Survey members to obtain an overview of present EOC related national activities • Facilitate partnerships to implement EOC activities • Organise workshop in Washington DC (early December) on IPY-related EOC activities • Prepare an information paper on National Programs' EOC for ATCM XXIX

Medical Network (MEDINET)		
Claude Bachelard (Coordinator) *Coordinator to 07-2006*	FR	**TORs** • Exchange information and experience on medical support in national Antarctic programs • Promote initiatives between national Antarctic programs in order to develop and facilitate closer cooperation • Respond to requests from COMNAP for advice on medical issues **Tasks** 1. Prepare and disseminate a common format for the presentation of summer medical standards and medical information (This will include the categorisation of medical standards, for example by location, type of activity undertaken, duration, age of personnel) 2. Establish common standards for medical screening for the interchange of personnel between national programs 3. Establish a database of current national program medical capabilities, including: - facilities and equipment - staffing, level of skills and medical fitness requirements for medical personnel - formats for medical information for use in medivacs 4. Consider baseline and standardised procedures on above capabilities 5. Establish an anonymised database of medical events 6. Share medical aspects of "Major Incident Plans" 7. Develop guidelines for management of altitude sickness prevention and treatment in Antarctica

ANNEX G

REPORTS IN RELATION TO ARTICLE III-2 OF THE ANTARCTIC TREATY

Report of the Antarctic and Southern Ocean Coalition (ASOC) to ATCM XXIX

I. Introduction

ASOC extends its formal thanks to the Government of the United Kingdom for hosting this ATCM and looks forward to a fruitful and substantive meeting.

Edinburgh presents an opportunity to set a new course in Antarctic environmental protection and management – to address emerging pressures such as tourism and biological prospecting, to reaffirm a truly cooperative approach to the conduct of science in the area (and not allow a proliferation of infrastructure), to reject an exploitative and competitive ethic as unacceptable in Antarctica, to adopt best practice so that we avoid environmental impact rather than having to clear it up later, and to demonstrate that our common efforts in Antarctica are worthwhile and noble, leaving the Antarctic as a place of wonder and value for future generations.

II. ASOC Worldwide

- ASOC maintains a Secretariat in Washington DC, USA – and a global website *(http://www.asoc.org)* which contains all ASOC papers produced in recent years, a list of staff and member groups, and links to many other relevant sites, including national programs and SCAR. There are ASOC member groups located in most Antarctic Treaty Consultative Parties (ATCPs).
- ASOC campaigns are coordinated by a team of specialised representatives located in: Asia (Seoul, South Korea), Australia-New Zealand (Canberra, Australia), Europe (Amsterdam, The Netherlands and Barcelona, Spain), South America (Puerto Madryn, Argentina), and southern Africa (Cape Town, South Africa).
- ASOC is collaborating closely with The Pew Charitable Trusts (PCT-USA) in helping to manage the Antarctic Krill Campaign initiated by PCT in April 2006. The campaign has two core objectives: for CCAMLR to manage krill using the same monitoring, control and surveillance measures (MCS) as it mandates for all other fisheries, and to ensure the application of precautionary, ecosystem-based catch limits at sufficiently small scales to protect marine living resources in the Antarctic region that are dependent on krill.
- ASOC member group Greenpeace deployed its two ice-class vessels in the Southern Ocean for eight weeks during December 2005-January 2006, to track and document IUU and whaling activities.
- ASOC monitored the work of CEP Intersessional Contact Groups, participated on the workshop "Possibilities for Environmental Management of the Fildes Peninsula and Ardley Island" organised by Germany at Russia's Bellingshausen Station, during 30 January – 3 February 2006,[1] and participated and presented a poster paper at the CEP Workshop 9-10 June 2006.

[1] ASOC would like to extend its gratitude to the Russian Antarctic Expedition; the Base Commander and staff of Bellingshausen Station, Russia; the Federal Environmental Agency, Germany; the Federal Ministry of the Environment, Germany; Greenpeace International; and ASOC donors and supporters for facilitating its participation at the Fildes Peninsula workshop.

III. Information Papers for XXIX ATCM

In addition to this report, ASOC has tabled eight Information Papers:

1) An Update on Recent Noise Pollution Issues (IP 61)
2) The Antarctic and Climate Change (IP 62)
3) Beyond Direct Impacts of Multi-year Maintained Ice Routes Case Study: McMurdo-South Pole Surface Re-Supply Traverse (IP 63)
4) A Glimpse into the Environmental Legacy of the International Polar Year 2007-2008 (/IP 64)
5) Managing Antarctic Tourism: A Critical Review of Site-Specific Guidelines (IP 65)
6) Station Sharing in Antarctica (IP 94)
7) Strategic Issues Posed by Commercial Tourism in the Antarctic Treaty Area (IP120)
8) Management of Antarctic Krill (IP108)

IV. Key Issues for XXIX ATCM

We have identified a number of key issues related to the long-term protection of the Antarctic, the implementation of the Madrid Protocol, commercial activities, the IPY and related infrastructure development, and broader issues of Antarctic conservation, which are briefly described below.

A. An Ecologically Sustainable Antarctic Future

The Stockholm ATCM acknowledged the issue of emerging environmental pressures on the Antarctic, from both the growth of human activities within Antarctica and global processes such as climate change. It was also noted that the growth of human activities would increase the workload of the CEP. ASOC looks forward to a continuation of this discussion, and to the report of the pre-CEP XIX workshop. ASOC also urges Parties to consider these challenges in a strategic manner – that is to consider "how do we want Antarctica to look environmentally in ten years, and in twenty years". In our view the ATS needs to use strategic thinking and decision-making to assess **what** activities should take place in Antarctica, leaving the EIA process to resolve **how** these activities should be carried out. In this context, a reconsideration of the application of Strategic Environmental Assessment, raised by ASOC in earlier ATCMs,[2] would be useful.

ASOC reiterates its contention that in the future, Antarctica should be emphatically **better than now** – and certainly *no worse than now* – in terms of the preservation of Antarctica's intrinsic values, the integrity of its wilderness, and the upholding of the key principles of the Antarctic Treaty and its Protocol. This should be the guiding principle of the CEP, and will require a substantive shift in the thinking of Parties.

B. The Promise of the Protocol

ASOC continues to be alarmed by the "rolling back" of the more innovative and progressive environmental management initiatives. We call upon all Parties, Observers and Experts at this XXIX ATCM to rededicate themselves to ensuring comprehensive implementation of the Protocol, and concerted efforts to ensure the comprehensive protection of the entire Antarctic and Southern Ocean environment, as the common heritage of all humankind, by using all relevant structures and institutions of the ATS in a fully cooperative and synergistic way.

[2] See: ASOC (2000): *Antarctic Strategic Environmental Assessment.* The Hague: XII SATCM/IP 10; ASOC (2001): *Strategic needs and decision-making in Antarctica*. St. Petersburg: XXIV ATCM/IP 54; and ASOC (2002): *Strategic Environmental Assessment in Antarctica: A «stepping stone» to Madrid Protocol objectives.* Warsaw: XXV ATCM/IP 82.

C. Antarctic Tourism

Over the past few years there has been appreciable progress towards acknowledging the various issues posed by commercial tourism. ASOC welcomes progress towards acceptance of such useful measures as accreditation schemes and "site-specific guidelines", but notes that such mechanisms alone will have little substantive effect on the nature and scale of Antarctic tourism, and particular the rate of growth and increase in diversification of activities. In particular, the growing threat of unplanned and uncoordinated land-based tourism requires a more integrated and comprehensive approach.

However, significant elements of commercial tourism – elements that we believe must be considered in any regulatory structure to be agreed by Parties – still require substantive discussion. These elements include strategic consideration of the overall scale and trajectory of commercial tourism in Antarctica, the acceptability of particular types of activity, the risks posed to the environment, scientific value, access, and geopolitical stability of the Antarctic Treaty System. There is an urgent need to address core issues of Antarctic tourism: acceptable levels of tourism, rates of growth and land-based infrastructure, and the legal context in which tourism operates in this juridically complex environment. It is important that Parties take substantive steps towards a legally-based regulatory structure for this burgeoning industry.

D. Biological Prospecting

ASOC looks forward to further substantive discussion of Biological Prospecting in the Legal and Institutional Working Group. We urge Parties to utilise the Precautionary Principle on this issue, and establish a formal mechanism for dealing with potential commercial bio-prospecting issues before conflict arises, including appropriate regulatory procedures. This is particularly important given that the Antarctic Treaty does not lend itself readily to a simple application of other relevant systems such as the Convention on Biological Diversity. ASOC hopes that this ATCM's discussion can build on Resolution 7 adopted at ATCM XXVIII.

E. Environmental Impact Assessment

The boom in infrastructure development in Antarctica reveals the need for an urgent review of EIA procedures to take into account cumulative impacts and changes in environmental conditions. Our approaches to EIA need to be able to assimilate new scientific information – wherever that occurs in the sequence of EIA or preparation for an activity. There is no legitimacy to a "cut-off" point when the consequences of ignoring information risk damage to the Antarctic environment and values.

In this respect, we note significant new information[3] on the linkage of at least some of Antarctica's subglacial lakes, evidence of relatively rapid water exchange between these lakes, and concern about the increased risks of contamination across linked systems posed by penetration of any one lake. These findings have profound implications for the acceptability of the proposed penetration of Lake Vostok by Russia during the next season. Lake Vostok is the seventh largest freshwater lake on Earth. Any risk to it through premature penetration is unacceptable. Now that we have intimations that any damage need not even be confined to this lake, but could reach other linked subglacial lakes, there is a compelling need to reassess all drilling activity.

ASOC suggests that the CEP address the issue of a supplementary EIA in the case of the McMurdo – South Pole ice route. The CEE prepared by NSF in 2004 provides a wealth of information on the operations and likely direct impacts of this route. However, at the time of its preparation, the proof of concept exercise was still underway and it was unknown whether the route would be used for

[3] Wingham, D.J. *et al* "Rapid discharge connects Antarctic subglacial lakes". *Nature* 440: pp. 1033-1036 (20 April 2006).

routine re-supply operations. As a result, the CEE discussed the environmental impacts of traverse capabilities, without committing to what the full use of the ice route will be when operational.

ASOC looks forward to a substantive discussion to better address cumulative impacts of human activities under Annex 1 of the Protocol. Over-development of infrastructure in areas such as Fildes Peninsula, King George Island, can inform the planning and conducting of activities elsewhere in the Antarctic so that the same errors are not repeated again at the expense of diminishing Antarctica's intrinsic values. This is particularly relevant in view of the numerous infrastructure projects in Antarctica currently underway, including those that may arise as a result of the forthcoming, and important, International Polar Year.

F. Liability

ASOC looks forward to discussions of progress made to ratify Annex VI to the Protocol addressing *Liability Arising from Environmental Emergencies,* adopted by ATCM XXVIII. Annex VI is a good first step toward meeting the obligations of the Protocol, particularly those under Article 15 on Emergency Response Action. We would urge Treaty Parties to continue to review this issue until all obligations under Article 16 of the Protocol are met.

G. Conservation of Antarctic Fauna And Flora

ASOC hopes that the Edinburgh meeting is able to agree to the listing of southern giant petrel (*Macronectes giganteus*) as a Specially Protected Species under Annex II. We note that a similar case exists for macaroni penguins *(Eudyptes chrysolophus)*.

However, ASOC has severe reservations concerning proposals to de-list fur seals. While fur seal populations have recovered from past slaughters, marine mammals generally (and seals in particular) are not neutral taxa. They have been deliberately harvested rather than just inadvertently impacted by human activities. In view of current sealing occurring elsewhere in the world and a potential interest in their precedent value in Antarctic waters, many citizens in AT countries will view the proposed delisting with concern.

ASOC submits that before fur seals are de-listed, it is essential to have some understanding within the ATS that this is not to be taken as a green light for (a) recommencing harvesting of fur seals or (b) culling them under permits for supposed scientific purposes such as easing pressures on cryptogram or freshwater lakes systems. ASOC is concerned that otherwise we may find ourselves facing commercial exploitation – and presumably the bringing into force of the 35-year old *Convention for the Conservation of Antarctic Seals*, with its now rather underwhelming environmental ethic – and the introduction of so-called "rational-use" and "active management" approaches to the conservation of Antarctic living resources.

H. Noise Pollution

Noise pollution is recognised as a threat to marine wildlife in an increasing number of national and international fora. SCAR has been successful in maintaining an interest within the Antarctic community since 2002. There have been significant scientific and legal developments in the last year, and ongoing efforts in many parts of the world, to manage and mitigate the negative impacts of noise pollution.

At recent ATCM and CCAMLR meetings, ASOC has raised the issue of acoustic pollution in the Antarctic Treaty Area, and the potential impacts that the technologies producing the noise have on the marine environment throughout all levels of the ecosystem. We have submitted a further Information Paper this year to provide Delegates with information on recent scientific, legal and political developments, as well as a short commentary and recommendations (XXIX ATCM /IP 61).

We hope this could lead to agreement in CEP IX on concrete recommendations to the ATCM to address acoustic pollution in the Southern Ocean and to minimise its impacts on the marine environment. ASOC urges the ATCM to adopt a Resolution requesting all Parties to consider the acoustic impacts of all their activities as part of the IEE or CEE procedure, as appropriate, and the inclusion of acoustic impacts of activities, and the cumulative impacts of such activities within the definition of the term "minor and transitory", as it is used in Article 8 and Annex 1 of the Protocol. The conduct of monitoring from all scientific vessels that operate intense noise sources in the Southern Ocean would also be a significant precautionary measure. Waters within the Antarctic Treaty Area where biologically important activities occur should be entirely protected from the effects of high-intensity underwater sound.

I. Southern Ocean Fisheries

The issue of CCAMLR as part of the Antarctic Treaty System was discussed at the April 2005 CCAMLR Symposium. While CCAMLR is a separate international agreement it is also clearly part of the Antarctic Treaty System and has several obligations to the Treaty. These are explicitly stated in the Preamble to the Convention, and in Articles III, IV, V and VI, VII, XXIII and XV. Article V in particular requires the Contracting Parties "to acknowledge the special obligations and responsibilities of the Antarctic Treaty Consultative Parties for the protection and preservation of the environment of the Antarctic Treaty area" and to agree to observe (as and when appropriate) the Agreed Measures for the Conservation of Antarctic Fauna and Flora and "such other measures as have been recommended by the Antarctic Treaty Consultative Parties in fulfillment of their responsibility for the protection of the Antarctic environment from all forms of harmful human interference".

ASOC supports calls by some Parties to review this relationship to ensure that it is strengthened, particularly in view of the increasing focus on harvesting and away from Conservation within the Commission. Consultative Parties need to accept their responsibilities to provide advice and guidance to the CCAMLR Commission, particularly with respect to issues relating to the protection of the Antarctic environment and establishing marine specially protected areas.

ASOC has prepared an Information Paper about precautionary management of the krill fishery for the general information of delegates to this ATCM.

J. Climate Change

There is already strong and sufficient scientific evidence to indicate that most of the change in global climate in the past 50 years is attributable to human activities, predominantly due to the burning of fossil fuels and release of greenhouse gases into the atmosphere.

ASOC has submitted an Information paper (XXIX ATCM/IP 62) providing an overview of recent research in the Antarctic about various aspects of climate change in order to inform ATCM delegates, the public and decision-makers around the world about these research findings.

No Antarctic Treaty member state can continue to ignore the realities revealed by the research being carried in Antarctica. They should, as a matter of urgency, use this information to take tangible steps both domestically and through international treaties to address the threats posed by the rapidly growing levels of CO_2 and other greenhouse gases globally. It is especially appropriate for Antarctic Treaty member states to take the lead in making use of the unique information resulting from their own scientific programs in the region, to take appropriate actions at national and global levels.

Although emissions from Antarctica are very low compared to the rest of the world, there will be greatly enhanced media attention on the increased Antarctic activities that will begin during the International Polar Year, 2007-09, including live broadcasts of life at Antarctic stations. Antarctic scientific and logistics programs should, therefore, encourage conservation and energy efficiency,

including the installation and utilisation of renewable energy at stations and field camps, thereby serving as exemplars to the rest of the world.

K. International Polar Year 2007

ASOC looks forwards to participating in the International Polar Year 2007-08. The IPY period and the years following it provide an opportunity to emphasise globally significant science that can best be carried out in the Antarctic. In this context, priority should be given to research carried out on an international basis, using shared facilities and logistics to the maximum extent possible.

ASOC encourages all Antarctic Treaty states to ensure that the IPY 2007-2008 leaves a legacy of environmentally responsible scientific practice that is compatible with the designation, objectives and principles of the Antarctic Treaty and its Environmental Protocol, and to international sustainability principles.

L. Shared Stations

As of 2005, there were at least 45 permanent stations in the Antarctic being operated by 18 countries, of which 37 were used as year-round stations. Although there are a few examples of states sharing scientific facilities, generally the practice of individual states building and operating their own facilities, under their own flags, persists.

In this overall context, ASOC notes that neither the CEP nor SCAR have analysed how many scientific research stations might actually be needed in the Antarctic. Similarly, there is no evaluation of priorities for the scientific research that arguably should be carried out in the Antarctic, and relating these priorities to the existing scientific research being done. A step in this direction was recommended in the joint inspection report tabled last year by the UK, Australia and Peru, which suggested that SCAR undertake on-site audits of scientific research being done. ASOC recommends that the ATCM should ask SCAR to conduct such an audit, and that Parties help with the logistic aspects needed given SCAR's limited logistics capability.

The IPY offers an opportunity to open a new period of Antarctic operations with shared facilities and logistics focused on carrying out scientific research of the highest calibre. ASOC recommends that the CEP, in consultation with COMNAP, should play a more proactive role in facilitating how various facilities could be shared in order to maximise their value and lower environmental impacts on the Antarctic wilderness.

V. Concluding remarks

The Antarctic faces increasing pressures both from the unplanned and uncoordinated growth of human activities and from external factors. Edinburgh presents an opportunity to set a new course in Antarctic environmental protection and management and to demonstrate that our common efforts in Antarctica are worthwhile and noble, leaving the Antarctic as a place of wonder and value for future generations.

Report by IUCN Submitted to the XXIX ATCM

IUCN extends its formal thanks to the Government of the United Kingdom for hosting this Antarctic Treaty Consultative Meeting.

Created in 1948, the World Conservation Union (IUCN) brings together 81 States, 113 government agencies, 850 plus NGOs, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. The Union's mission is to "influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable". The World Conservation Union is the world's largest environmental knowledge network and has helped over 75 countries to prepare and implement national conservation and biodiversity strategies. The Union is a multicultural, multilingual organization with 1000 staff located in 62 countries. Its headquarters are in Gland, Switzerland.

IUCN has a long standing interest in Antarctic Conservation and welcomes the opportunity to assist Parties in their deliberations at the 29th ATCM.

(1) Antarctic and Southern Ocean Marine Protected Areas

In November 2004, the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR) agreed to convene a technical workshop to discuss approaches to establishing MPAs in the Southern Ocean, including high seas areas.

Also in November 2004, IUCN's World Conservation Congress in Bangkok, Thailand adopted a resolution urging all Parties to the Environmental Protocol and to CCAMLR to take steps to develop a comprehensive network of protected areas with special urgency being given to protecting marine habitats and biological diversity, and to provide comprehensive protection of the whole of the Ross Sea using a combination of Antarctic Specially Managed Areas and Antarctic Specially Protected Areas.

The establishment of representative MPAs in Antarctica would help to fulfill the obligation under Article 3(2)(b) of Annex V of the Protocol to seek to identify within a systematic environmental-geographic framework, and to include in the series of ASPAs representative examples of major marine ecosystems. MPAs would also contribute to the conservation objectives of CCAMLR. The commitment of both Antarctic Treaty Parties and CCAMLR Members to an ecosystem approach to management highlights the need for the two instruments to work together on the development of MPAs.

The bioregionalisation process identified by the CCAMLR MPAs Workshop will be one of the fundamental steps towards developing a systematic network of MPAs in the Southern Ocean. It will also have significance as a test case for similar approaches to be taken in other high seas areas. Bioregionalisation studies have been undertaken elsewhere at a national level, however such studies have not yet been undertaken for areas on the scale of the Southern Ocean, or for areas outside national jurisdiction. Studies undertaken for the Southern Ocean may provide valuable experience on approaches to MPA selection within a large, high seas region, and also on the best ways to facilitate international co-operation on such projects.

IUCN's Global Marine Programme, WCPA High Seas MPA Task Force, and Antarctic Advisory Committee would be pleased to continue to assist the CEP and CCAMLR.

(2) Introduction of Non-native Species, Parasites and Diseases

IUCN defines *Alien species* (non-native, non-indigenous, foreign, exotic) as "a species, subspecies, or lower taxon occurring outside of its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could not occupy without direct or indirect introduction or care by humans) and includes any part, gametes or propagule of such species that might survive and subsequently reproduce." IUCN defines *Alien invasive species* (invasive alien species, environmental pests) as "an alien species which becomes established in natural or semi-natural ecosystems or habitat, is an agent of change, and threatens native biological diversity".

Globally, harmful non-native species, including but not limited to pathogens, are a major threat to biological diversity. Antarctica, in spite of its remoteness and "inhospitable" environment is not immune from this threat, both in terrestrial and marine environments.

Subantarctic islands show many examples of the devastation that can be wrought by invasive alien species. They also, fortunately, show many examples of management approaches that can eradicate or control such invaders – for example – on remote, Campbell Island, off the southern coast of New Zealand, several rare bird populations have made a come-back, thanks to the success of the largest island species eradication project which cleared the 11,300 hectare island of the world's densest population of Norway rats. The rats were having a devastating effect on the island's bird population, including the Campbell Island teal (*Anas nesiotis*). The Campbell Island teal (classified as Critically Endangered on the IUCN Red List and the rarest duck in the world) is endemic to the island, which is the cornerstone of New Zealand's subantarctic World Heritage Site, a place internationally recognized by UNESCO as having outstanding natural ecosystem and species, including 40 seabirds, 5 of which breed nowhere else. Now that the island is rat free, birds have been returned from a captive breeding site and the Campbell Island teal should spread to occupy its entire former range on the island. Further benefits of the rat eradication project are demonstrated by the recent return of 30 individuals of the Campbell Island snipe (*Coenocorypha aucklandica. nov. sp*), also endemic to the region.

While the number of alien organisms found on the Antarctic continent has been limited so far, this is no reason for complacency. Plants, micro-organisms and invertebrates have been reported to survive their introduction into Antarctica, and grasses (*Poa sp*) has been reported naturalised on the Antarctic continent itself. The workshop on non-native species in the Antarctic in Christchurch (April 2006) identified an increase in transport and equipment transfer directly between the Arctic and the Antarctic, and the Subantarctic and the Antarctic continent. It is also likely that global change, particularly global warming, may increase the rate of successful establishment of alien species by reducing differences in environmental conditions between donor and recipient environments.

In the context of the Antarctic, it must be noted that in addition to biodiversity, other specific Antarctic values are at risk, notably wilderness or intrinsic values and include changes to "pristineness", affecting the "existence value", and, in a continent reserved for peace and science, will interfere with scientific values. Thus, the need for preventative and precautionary action against alien (that is, non native) species is great.

Several recent studies document species introductions into Antarctic and Southern Ocean waters. The likelihood of transport of invasive species into the Southern Ocean may increase in future as a consequence of the growth of tourism, fisheries and science activities in the region. Marine debris and shipping are the two major vectors for marine species introductions into the Southern Ocean. IUCN commends the Parties on having started to address this particular issue in the Antarctic context. IUCN strongly encourages further actions within the framework of the Treaty to prevent non-native

species introductions, including increased measures to prevent unintentional introductions onto the continent itself, and to prevent introductions of organisms from one area to another area within Antarctica where they are not native.

IUCN would warmly welcome the opportunity to contribute to the further development of practical and/or institutional solutions to this threat to Antarctic biological and other values, its Invasive Species Specialist Group (of the Species Survival Commission), its Antarctic Advisory Committee and its Global Marine Programme.

(3) Antarctic Conservation Strategy

As part of the World Conservation Strategy developed by the IUCN during the 1980s there was a need to develop a regional policy for Antarctica. The IUCN Commission on National Parks and Protected Areas (CNPPA), in 1987 produced a publication entitled *Conserving the Natural Heritage of the Antarctic Realm*. In 1989, the Director General established a working group to respond to the call for the preparation of a strategy for Antarctic conservation. The resulting document *Strategy for Antarctic Conservation* was published in 1991, after revision in the light of the discussions held at the IUCN General Assembly. This has provided an over-arching framework for Antarctic conservation for the last 15 years. But conservation and environmental management are dynamic and developing fields and a review of the Strategy has been initiated in a process involving SCAR, IUCN, and others.

Report of the International Association of Antarctica Tour Operators 2005-2006 under Article III (2) of the Antarctic Treaty

Introduction

The International Association of Antarctica Tour Operators (IAATO) is pleased to present a report of its activities to ATCM XXIX, Edinburgh, Scotland, June 12 - 23, 2006, in relation to Article III (2) of the Antarctic Treaty.

IAATO is a member organization founded by seven companies in 1991 to advocate, promote and practice safe and environmentally responsible private-sector travel to the Antarctic.

During the 2005-2006 season IAATO had 75 Members, and as of April 27, 2006, the Association grew to 80 Members during the Annual General Meeting. An updated Directory of Members is on line at *www.iaato.org*. Tourism numbers in all categories totaled at least 32,042 including seaborne, air over flights and land-based tourism. Despite the increase in tourists, numbers of vessels and aircraft operations, the season went very smoothly. IAATO Members continued to support established practices that have proved to be effective and offer a strong degree of protection to the areas visited. As a member organization, IAATO seeks to raise the operational standards of Members and the industry as a whole. To do so requires an infrastructure, a forum, time and an economic commitment by each company.

IAATO successfully manages nearly the entire tourism industry in Antarctica and prides itself in the cooperation amongst its business competitors, as well as Treaty Parties.

IAATO has continued to focus its activities in several key areas. The following is a brief synopsis of activities:

- Implemented IAATO-wide operational procedures that effectively manage Antarctic Tourism;
- Designed and implemented the IAATO Ship Scheduler program. This is a computerized program which enables all companies to input their day-to-day ship schedules, expedition leader names and departure dates into a single database. A master schedule is then issued. This program was very successful during the 2005-2006 season as a preplanning tool. Small adjustments will be made for the 2006-2007 season. Companies will input their schedules after July 1, 2006, for the upcoming season. Database access to the 2005-2006 season was granted to COMNAP and national programs that interact with IAATO regularly. This enables ease in scheduling, transport of scientists, logistics and contingency planning. The Ship Scheduler allowed for effective exchange of information, ship itineraries and allowed IAATO members to plan to reduce environmental impacts at each landing site. The tool works extremely well. Some non-members were included in the master schedule;
- Implemented the new Vessel Data Center. Each ship operator and IAATO member is now responsible for uploading all detailed vessel and company information. The primary reason for creating this on-line program is for effective management of the IAATO Emergency Contingency Plan and to maintain a database on vessel specifications;
- The computerized IAATO Database for loading Post Visit Site Reports into a single electronic database worked extremely well, providing a complete record since the database began in 2003. All tourism statistics dating back to 1989 can be found on the IAATO website at

www.iaato.org. Data analysis has shown that ship staff occasionally input minor errors on forms, so each form is closely inspected before it is downloaded. Efforts are being made to have the forms reject incorrect data. The occasional, relatively minor duplication that occurs is corrected in due course, including that from previous years. The database has the capability to compile all company, visitor, vessel and activity information as a means of tracking IAATO member's activities. IAATO posted over 60 different data reports on tourism statistics on *www.iaato.org* as a matter of interest to the general public. The 2005-2006 data is estimated to be available in July 2006;

- Improvements were made to the Standard Post Visit Site Report Form (approved at ATCM XXVIII). Duplication of a small number of sites required amendments to be made to the forms prior to the start of the 2005-2006 season. Analysis of the forms indicates that only IAATO members and associated companies use the forms, despite the adoption of ATCM XXVIII Resolution 6. The updated versions were sent to the Antarctic Treaty Secretariat in October 2006 as well as distributed amongst Parties who issue permits or authorization to tour operators that are outside IAATO. IAATO maintains all the latest versions of the Post Visit Site Reports available on open pages at *www.iaato.org*;
- A survey on site use was created and distributed to all Expedition Leaders, and then analyzed in order to develop a more formal assessment of site procedures, landing beaches and environmental impacts;
- Updated the "Seasonal Operational Procedures" found on the Members-Only page of the website to ensure greater protection of the Antarctic;
- IAATO continued to promote its Vessel and Aircraft Coordination by using an all inclusive ship schedule, vessel call data and emergency response list;
- Continued use was made of the IAATO Member Emergency Medical Evacuation Response (EMER) action plan. Four IAATO medivacs were required during the 2005-2006 season, and successfully performed by IAATO member DAP;
- Adherence was made to the IAATO Site Specific Guidelines (ATCM XXVIII IP90) established in 2003 and revised and submitted in 2005 to ATCM XXVIII. Thirty-two sites were identified and limits set accordingly. IAATO spent a significant amount of time and resources on working with the CEP ICG on the review of the ATCM XXVIII Site Guidelines;
- Continued to support all methods necessary to eliminate the potential spreading of Antarctic diseases and translocation of species;
- Participated in several Intersessional Contact Groups (ICG's);
- Closely coordinated with all Provisional Members in their start-up operations and offered support to companies who have employees new to the business;
- Furthered work on the proposed IAATO internal Accreditation Scheme as per ATCM XXVIII IP 96;
- Participated in international meetings and liaising with National Antarctic Programs, government agencies of the sub-Antarctic island groups, and scientific and environmental organizations as needed.

1 IAATO Membership and Activities

1.1 Founded by seven private tour operators in 1991, the International Association of Antarctica Tour Operators had 75 Members during the 2005-2006 season from Argentina, Australia, Belgium, Canada, Chile, France, Germany, Italy, Netherlands, New Zealand, Norway, United

Kingdom, and the United States. A Membership Directory can be found on the IAATO web site at *www.iaato.org*. IAATO's fiscal year runs from July 1 to June 30 of each year, which is also consistent with an Antarctic operating season.

1.2 Member List During the 2005-2006 Operational Year

31 Full Members: Abercrombie and Kent, Inc./Atholl Shipping Corporation; Adventure Associates; Adventure Network International/Antarctic Logistics & Expeditions; Antarctica XXI; Antarpply; Aurora Expeditions; Cheesemans' Ecology Safaris; Clipper Cruise Line/ New World Ship Management Company LLC; Compagnie Des Iles Du Ponant; Crystal Cruises, Inc.; Expeditions Inc (now Polar Cruises); Elegant Cruises; Fathom Expeditions; Golden Fleece Expeditions Ltd.; Hapag Lloyd Kreuzfahrten; Heritage Expeditions; Holland America Line; Lindblad Expeditions; Oceanwide Expeditions; Ofotens og Vesteraalens Dampskibsselskab ASA (now Hurtigruten ASA); Pelagic Expeditions; Peregrine Shipping; plantours and Partner GmbH; Polar Star Expeditions; Princess Cruises; Quark Expeditions; ResidenSea; Saga Shipping Company Ltd; Thika Travel; Travel Dynamics International; and Zegrahm Expeditions Inc.

Full Members include one land-based operator, ship operators, companies that charter ships and/or organize groups to Antarctica and companies that reserve space from other ship operators.

11 Provisional Members: Aerovias DAP; Antarctic Shipping; G.A.P Adventures; Kotick Charters Ltd.; Latitude Oceané; Le Sourire; Ocean Expeditions; Orion Expedition Cruises; Rederij Bark Europa; Sea & Ice & Mountain Expeditions; and Tooluka Ltd.;

Provisional Members include a land/sea-based operator, ship operators, small vessel/yacht operators, a company that charters vessels from existing Members and a land-based operator.

33 Associate Members: Adventure Life Journeys; Amazing Cruises and Travel, Inc.; Antarctic Horizons; Antarctica Tasmania, Inc.; Asteria Expeditions; Beluga Expeditions & Adventures BV; C&O Tours S.A.; Croydon Travel; Cruceros Australis; ExpeditionTrips.com; Falkland Conservation; the Falkland Islands Company Ltd Shipping Agency; Falkland Islands Tourism; Galapagos Travel; Grand Nord-Grand Large; Helicopters New Zealand Ltd; Journey Latin America; LAN Airlines; Mountain Travel-Sobek; Navalia s.r.l.; Patagonia World; Regent Seven Seas Cruises; Ship to Shore Inc./shopAntarctica.com; Sintec Tur; Students On Ice; Sulivan Shipping Services Limited; TAMIC S.A.; Tauck World Discovery; Tucan Travel Pty Ltd.; Victor Emanuel Nature Tours; West Point Island; WildWings; and World Expeditions.

Associate Members include travel companies, government offices, conservation groups and ship agencies that reserve space on Full and Provisional Member vessels and/or aircraft or offer support services to the tour operators, or are involved in conservation work. IAATO also had one private yacht as an Associate member. The owners found it useful to use IAATO's resources when planning their Antarctic trip, filing Advance Notification and their Initial Environmental Evaluation.

The following companies joined IAATO at the 17th Annual General Meeting, April 2006: Hansa Kreuzfahrten GmbH; Peter Deilmann Reederei GmbH; Sterna Corporation; Polar Quest; and Wouk Logistics.

1.3 Membership Categories

During the 2005-2006 season, IAATO Members were grouped in each of the following Membership categories:

1. Organizers of expedition ships that carry less than 200 passengers or small sailing vessels that carry less than 12 passengers. The limit of 100 passengers ashore at one site at one time applies. (29 Members)
2. Organizers of vessels carrying 200-500 passengers who are making passenger landings. Stringent restrictions on landing activities of time and place apply. The limit of 100 passengers on shore at one site at one time also applies. (4 Members)
3. Organizers of cruise ships making no landings (cruise only). Cruise ships carrying more than 500 passengers are not permitted to make any landings. (3 Members)
4. Organizers of land-based operations. (2 Members)
5. Organizers of air operations with overflights only. (2 Members)
6. Organizers of air/cruise operations. (1 Member)
7. Companies in support of Antarctic tourism. (34 Members)

*Note: Full, Provisional, and Probational status occurs within categories 1-7.

1.4 Bylaws Changes

There were minimal Bylaws Changes during 2005-2006. IAATO Bylaws and Objectives can be found on line at *www.iaato.org*. The latest update is May 9, 2006.

2 2005-2006 Statistics

2.1 Overview of Tourist Numbers

From October 2005 to March 2006, a total of 25,167 passengers/tourists landed in the Antarctic on 44 commercially organized expedition vessels, 211 passengers/tourists participated in a fly cruise program and 1,078 land-based tourists flew, skied, climbed, camped or simply participated in day or overnight trips to Antarctica. In addition, 4,632 tourists travelled on three (IAATO-Member) large cruise only vessels and 1,165 passengers/tourists participated in air overflights to Antarctica.

An all inclusive overview of the Antarctic tourism industry can be found in the IAATO Overview of Antarctic Tourism submitted to ATCM XXIX IP 86.

3 Participation in Organized Meetings during 2005-2006

3.1 IAATO held its 17th Annual General Meeting, April 24-27, 2006, in Washington, D.C. A total of 94 participants attended which included 69 people representing 38 Member companies and 3 new Provisional Member applicants, 1 non-IAATO operator plus representatives from governments, universities, conservation and private research organizations.

Several Members once again sponsored the attendance of their expedition team. Participating were 10 Captains and 14 Expedition Leaders and numerous field staff. It is essential that our field personnel are brought into the discussions as they add an element of 'ground-truth' into all discussions and final decisions.

IAATO appreciates the participation by respective governments and non-governmental organizations. The following governments sent representatives: Antarctic Institute of Uruguay, Foreign Ministry of France, Umweltbundesamt (Federal Environmental Agency-Germany), Australian Antarctic Division, United Kingdom Foreign and Commonwealth

Office, British Antarctic Survey, United States Office of Polar Programs, National Science Foundation, and Raytheon Polar Services, United States Environmental Protection Agency, United States Department of State and the Governor of Svalbards Office.

During the last decade approximately 65% of the nationalities of the tourists visiting Antarctica came from the United States, Germany, the United Kingdom and Australia. IAATO was pleased that the corresponding governments were present. IAATO encourages government interactions with tour operators and considers it very important that governments share their concerns with operators. Other individuals/organizations/universities in attendance included the United Kingdom Antarctic Heritage Trust, South Georgia, Oceanites, Bath University and various representatives from Universities and individuals interested in Antarctic tourism.

We were pleased that Mr. Jan Huber from the Antarctic Treaty Secretariat (ATS) was able to join us again and we appreciate the opportunity to work in cooperation with the ATS.

IAATO Members appreciated the participation of the Executive Secretary of the Arctic Expeditions Cruise Operator's Organization (AECO). AECO used this opportunity to hold a separate meeting.

The complete agenda is available on request. Included in the 2006 agenda were Site Guidelines, station visits and guidelines, web-based ship scheduler, post visit site reports, active management strategies, review of 100 passengers ashore policy, station visits and guidelines, Marine Committee and Marine Operations new vessel database, work of the Hydrographic Committee on Antarctica, emergency contingency planning (EMER), ballast water, communications safety and navigation, communications software and new technology, boot washing stations, Zodiac operations and safety, IPY, Membership updates and issues, accreditation, field staff reviews and report, information management, land-based tourism, liability annex, updates from British Antarctic Survey, South Georgia, Palmer Station and the United States Antarctic Program, U.S. Environmental Protection Agency and more.

IAATO will hold its 18th Annual General Meeting in Hobart, Tasmania, in June, 2007 (final dates to be decided). Interested parties that would like to attend or participate should contact IAATO at *iaato@iaato.org*.

3.2 IAATO had two representatives at the COMNAP meeting in Bulgaria in July 2005. IAATO appreciates the opportunity to work cooperatively with COMNAP where mutual interests lie.

3.3 IAATO held a 3-day meeting in New York City in September 2005 to discuss site guidelines and accreditation. Representatives from IAATO's committees attended as well as the United Kingdom, United States and Australia. IAATO appreciated the time and effort by all involved and felt the input was mutually valuable.

3.4 IAATO was very pleased to send one participant to the IHO/HCA Meeting in New Zealand in November 2005. IAATO supports and encourages the work of the HCA. Safety and navigation are extremely important concerns to vessel operators and the productive work by this group is invaluable for all ship operators.

3.5 While in the Southern Hemisphere in November 2005, IAATO also was grateful to New Zealand for the invitation to attend the fuel handling workshop. In addition, IAATO was asked to be a keynote speaker at the Australian Ecotourism Conference in Hobart.

3.6 Dr. Kim Crosbie, IAATO Environmental Operations Manager, participated on the site inspection trip on board HMS *Endurance*. In addition she spent a significant time in Ushuaia interviewing Expedition Leaders and talking to Captains and officers about all aspects of tourism management.

3.7 Denise Landau attended the Fildes Peninsula Workshop in late January and early February 2006. IAATO members provided transport for nearly all the participants that were not working at one of the research stations in the Maxwell Bay Area. IAATO is grateful to Germany for organizing this workshop and thought it to be extremely productive and hope that future work on this subject will occur.

3.8 Dr. Chris Curry attended the Non Native Species in the Antarctic Workshop organized by New Zealand on behalf of IAATO. Chris has been working with IAATO and or IAATO member companies for over 10 years developing the boot washing guidelines, conducting scientific studies on the translocation of organisms and providing IAATO with guidelines on preventative measures.

3.9 Numerous other meetings took place between IAATO Members, IAATO Committees and their representative governments throughout the year. IAATO values a cooperative working relationship with respective governments on tourism issues and encourages such meetings.

4 Field Coordination

4.1 IAATO compiles seasonal updated information, including vessel call data, a comprehensive ship schedule, emergency contact information, expedition leader schedules, and yearly seasonal operational procedures. In addition there are over 50 files hosted on the IAATO website per season providing members with appropriate guidelines and operating procedures

4.2 IAATO's comprehensive directory of Vessel Call Data and the Master Ship Schedules are shared with COMNAP and other government offices to encourage improved communication and operational coordination. COMNAP's MINIATOM is an extremely useful tool for tour operators trying to contact stations or government vessels. As IAATO vessels transport numerous scientists and support personnel to Antarctica each year, in addition to requesting tourist visits to stations, it is helpful when station contact information is up-to-date for communication, planning and emergency purposes.

4.3 Expedition leaders and ship's officers circulate advance day-to-day itineraries and maintain regular contact throughout the season to coordinate site visits and exchange general information such as ice conditions, weather, landing recommendations, and concern about potential environmental impacts, etc. A key factor in managing Antarctic tourism and mitigating potential environmental impact is to ensure that no two ships land passengers at the same place at the same time. An example of the annual instructions to ships' captains, radio officers and expedition leaders is included as Appendix A.

4.4 Details on IAATO's Emergency Medical Evacuation Response plan (EMER) have been presented at previous ATCMs. IAATO Member Aerovias DAP offered this service for Members during the 2005-2006 season. Aerovias DAP performed a total of four tourist medical evacuations for members from King George Island to Punta Arenas for IAATO members.

5 Environmental Impact Assessment

5.1 All IAATO members have submitted either Environmental Impact Assessments (EIA's) or Operational documents that substitute for EIA's to their national authority. Not all governments require EIA's. IAATO is aware of several non-IAATO vessels this year that

have either not submitted environmental impact assessments, filed Advance Notification or Post Visit Site Reports.

5.2 A comparison of the various EIA's and the level of EIA's that individual operators submit to their respective governments show a number of inconsistencies amongst documents. IAATO, however, has bridged gaps in documentation for ship-based operators in particular to assure there are mitigation measures and procedures in place to avoid environmental impacts.

5.3 IAATO remains deeply concerned about non-IAATO operator activities. The Association urges Contracting Parties to ensure that obligations of the Environmental Protocol are being met and that Environmental Impact Assessments are being submitted and that detailed mitigation measures are included. IAATO is concerned that once the paper work process is completed by non-members, there is no supervision of management or follow-up to ensure that non-members are following the requirements of activities.

5.4 IAATO requests that when non-IAATO operators submit EIA's that reference IAATO's operational procedures the respective governments should be encouraged to contact IAATO for verification. It is not possible for non-IAATO operators to have the breadth or understanding of the numerous operating strategies IAATO has developed over the years.

6 Procedures to Prevent the Introduction of Alien Organisms

6.1 For the past seven seasons, IAATO's Boot and Clothing Decontamination Recommended Guidelines and Translocation of Diseases Protocol have proven to be effective. These guidelines unofficially have been operative for the last twelve years by most Members. Past ATCM papers have included this important guideline. Both the above-mentioned guidelines have been tabled previously as attachments at SATCM XII, ATCM XXIV, ATCM XXV and XXVII (in IAATO's Annual Reports). A separate paper on the subject was tabled in Stockholm as ATCM XXVIII IP 97.

7 Reporting of Tourism and Non-governmental Activities and Data Base

7.1 Antarctic tour operators use the standard Post Visit Site Report form. IAATO modifies the reports each year as inconsistencies are discovered. All updated versions can be found on the open pages of the IAATO website. Previous versions of the form have been discontinued, and should not be used.

7.2 IAATO continues to support the use of this single form, which reduces the burden of paperwork and facilitates the study of the scope, frequency and intensity of tourist activities. IAATO would like to encourage Parties to send IAATO a copy of any forms received from non-IAATO operators in order for the data to be incorporated into IAATO's "Overview of Tourism" and the IAATO tourism data base. This will provide for greater transparency of all tourist activities and will further the ability to address cumulative impact issues. IAATO's data base will be able to access information from these forms and analyze, if necessary, statistics on site use and visitation.

8 Implementation of Recommendation XVIII-1 (Guidance for Those Organising and Conducting Tourism and non-Governmental Activities in the Antarctic and Guidance for Visitors to the Antarctic) and Other Guidelines

Recommendation XVIII-1, "Guidance for Those Organising and Conducting Tourism and non-Governmental Activities in the Antarctic", is provided to all Members in order to inform them of key obligations and procedures to be followed.

IAATO urges "Parties" to consider formally adopting Recommendation XVIII-1. It is our understanding that these guidelines have not yet been formally adopted.

8.1 IAATO is very concerned about tourists traveling on non-IAATO vessels visiting the Antarctic who may not be aware of the Environmental Protocol and its obligations. As tourism increases, especially in the Antarctic Peninsula region, every visitor and operator will need to be responsible for even greater care of the landing sites and the marine environment.

8.2 IAATO's standard operating procedures for implementing Recommendation XVIII-1 include the following:

- Mandatory briefings on each tour ship prior to arrival in the Antarctic. This presentation consists of the IAATO slide or PowerPoint presentation. This presentation can be viewed on line at *www.iaato.org* under "Guidance for Visitors" on the home page. Most expedition leaders will however enhance the presentation with additional slides and commentary.
- Passengers, ships' command, crew and expedition staff receive paper copies of Recommendation XVIII-1 "Guidance for Visitors to the Antarctic." Some companies distribute this document in pre-season materials in advance of departure, some on board the ship. In addition to receiving copies of the Recommendation, all passengers and ship's personnel are required to attend the briefing.
- Guidelines are available on the open pages on the IAATO website in English, Chinese (Mandarin), Dutch, French, German, Italian, Japanese, Russian and Spanish.

8.3 In addition, IAATO Members continue to use IAATO and/or company adopted guidelines which include: marine wildlife watching, site specific information, assessment checklist for visiting 'new' sites, kayak, mountain climbing, camping, scuba, helicopter, Zodiac, Remote Operated Vehicle (ROV), boot and clothing decontamination and disease protocols.

9 Emergency Response Action and Contingency Planning

9.1 At IAATO's 17th Annual General Meeting (2006) the IAATO Emergency Contingency Plan was reviewed and discussed for its efficiency. This updated plan is submitted as a separate paper to ATCM XXIX.

9.2 IAATO instituted a ships database noting vessel specifications.

9.3 Members have Shipboard Oil Pollution Emergency Plans (SOPEP) in place on their vessels that satisfy Regulation 26 of Annex I of MARPOL. A "Special Antarctic Addendum" to the SOPEP was developed by IAATO and distributed to Members for implementation and comment in 1998 (ATCM XXII/IP104). While the Addendum has no legal status, it includes notice to contact Antarctic stations in the vicinity of any marine pollution incident, along with appropriate national authorities.

9.4 The IAATO EMER plan has been in place for at least the past nine seasons in order to reduce the need to impact scientific stations in the Antarctic Peninsula with tourism-related medical problems. A standard medical information checklist is available for new Members in order to ensure adequate medical supplies are available on board vessels.

10 Scientific and Information Support

Members continue to provide logistic and scientific support to National Antarctic Programs and to the sub-Antarctic Islands, providing a cost-effective resource for the scientific community. During the 2005-2006 season, scientists, support personnel and gear from various National Antarctic and Sub Antarctic Programs were provided transport to and from stations, field sites and gateway ports. A partial list of scientific support is included as Appendix D. Further descriptions are noted below.

Specific requests for logistic or other support should be made to Members or the IAATO Secretariat. For a complete Membership directory, please refer to the IAATO web site at *www.iaato.org*.

11 Conservation Research, Academic and Scientific Support

Members and their passengers continued the tradition of direct financial contributions to many organizations active in Antarctica. Appendix C provides a partial list of donations.

12 Observers On Board Member Vessels

IAATO requires Provisional and Probational Members to carry an observer before they are eligible to apply for Full Membership. During the 2005-2006 season, IAATO appointed 3 observers to sail on Provisional Member vessels. There were no Probational Members. IAATO considers using a qualified National Program observer from the country in which the company is registered. When not available, IAATO will appoint an appropriate person with broad experience in Antarctic and or related matters. IAATO updated the "Checklist for Observers" form (version October 2005) for use this season. In addition, ATCM XIX Resolution 5 (1995), Antarctic Treaty Inspection Checklists, is also provided to the appointed observer. IAATO vessels have been carrying observers since 1991.

13 Discoveries and Adventure

The icebreaker vessel *Kapitan Khlebnikov* (Quark Expeditions), and their small boats, reached what is believed to be the farthest south navigation of any ship to date, on February 1 and 2, 2006. On February 1, the ship reached the point: 78°40.872'S and 164°43' W and then on February 2, the ship's small boats reached: 78° 41.030'S and 164°11.40' W.

14 With Thanks — Cooperation with National Programs

The following provided assistance and operational guidelines to IAATO during the 2005-2006 season, for which Members are grateful:

- Chile: For the use of the runway at Marsh/Frei for medical emergencies in conjunction with Member Aerovias DAP and to Bellingshausen Station for accommodating last minute requests during medivacs. There were 4 IAATO medivacs this season.
- United Kingdom: United Kingdom Foreign and Commonwealth Office, British Antarctic Survey, Port Lockroy, and U.K. Antarctic Heritage Trust, Sub Antarctic Islands' personnel and others for making visits an extremely educational and enjoyable experience and for providing Members with comprehensive guidelines for visits to BAS stations. IAATO is grateful for the U.K.'s support in limiting visits to stations to Members and to HMS *Endurance* for hosting the Site Guidelines team.
- ALL Antarctic and sub-Antarctic station and island personnel who have welcomed our groups and provided a friendly, educational and rewarding experiences for tourists.
- Palmer, McMurdo and South Pole Station personnel for hosting organized visits throughout the season.
- Bellingshausen Station in gratitude of hosting the Fildes Peninsula Workshop and to Artigas, Great Wall and the collective Station personnel from the various Chilean stations on King George Island.
- Arctowski and Vernadskiy stations for welcoming tourists regularly throughout the season.

Appendices

A. IAATO Pre-Season Antarctic Checklist 2005-2006 Season

B. 2005-2006 Expedition Leader and Ship's Officers Seasonal Instructions

C. Partial list of Donations for 2005-2006

D. Partial List of Science Support and Transport by IAATO Vessels in 2005-2006

Appendix A

IAATO Pre-Season Antarctic Checklist, 2005-2006 Season - October 25, 2005

(Revised from July 29)

Seasonal Documents

- Expedition Leader and Ship's Officers Season Instructions: Memorandum to Antarctic Captains, Expedition Leaders and Radio Officers and IAATO Office Personnel
- Antarctic Communications Directory (COMNAP MINI-ATOM- Distributed October 11, 2005)
- IAATO Vessel Call Data, 2005-2006 (available by October 26, 2005)
- IAATO Ship Schedules (available by October 26, 2005)
- Approved 2005-2006 Palmer Station Cruise Ship Visits (*Version #4/IAATO Website)
- Copy of Organizer's Environmental Impact Assessment (varies by organizer)
- Copy of all relevant permits (i.e. waste management permit, hut permit etc. if appropriate)
- Expedition Leader's/Staff Resource Notebook
- IAATO Emergency and Medical Response Contingency Plan (EMER) (Signed copy)
- Additional Documents can be found on the IAATO members only section of the website

Reporting Requirements

- Post-Visit Report, Part 1 (Expedition Record) and Part 2 (Site Visit Record) 2005-2006 version (available by October 2005)
- Incident Reporting Form (IAATO Website)
- Whale Collision Reporting Form (IAATO website)
- End of Trip/Season Report that includes Scientists transported, funds raised and any other relevant observations
- Expedition Leader Site Questionnaire, parts 1, 2 for vessel landings in the Antarctic Peninsula (emailed by October 26, 2005)

Standard Operating Documents

- ATCM Recommendation XVIII-1 for Visitors (in English, Spanish, French, Russian, German, Japanese, Italian, Chinese, Dutch)
- IAATO Slide Presentation, Safety and Conservation Briefing
- IAATO Boot and Clothing Decontamination Guidelines
- IAATO Introduction and Detection of Diseases in Antarctic Wildlife
- IAATO Marine Wildlife Watching Guidelines
- IAATO Emergency Contingency Planning
- IAATO Memo Explaining Vessel Call Data
- IAATO Site Selection Criteria
- Individual Company: Camping Guidelines, Kayak Guidelines, ROV Guidelines, Helicopter Guidelines for companies operating these activities

Site Specific Guidelines and Site Resources

- IAATO Site Specific Guidelines in the Antarctic Peninsula (ATCM XXVIII IP 90)
- ATCM XXVIII agreed Site Specific Guidelines for Penguin Island, Aitcho, Jougla Point, Cuverville Island. For reference see *http://www.ats.org.ar/documents.php*
- Additional Site Specific Guidelines for: Hannah Point, Turret Point, Yankee Harbour, Neko, Pleneau, Petermann, Paulet (produced by the United Kingdom to be referred to as additional information). (IAATO Website)
- Deception Island Management Plan: *http://www.ats.aq/28atcm/buscador.php?pagina=2* (Note this is Working Paper 20, download all the attachments)
- ATCM XXVIII Measure 3 Antarctic Specially Protected Managed Area and Antarctic Specially Protected Areas Designation and Management Plan which includes the following:
    - Deception Island, South Shetland Islands be designated as Antarctic Specially Managed Area No. 4;
    - Management Plan for Antarctic Specially Managed Area No. 4: Deception Island, South Shetland Islands, contained in Appendix 1;
    - Revised Management Plan for ASPA No. 140: Parts of Deception Island, contained in Appendix 1;
    - Revised Management Plan for ASPA No. 145: Port Foster, Deception Island, contained in Appendix 2 to the Annex to this Measure;
    - Management Plan for ASPA No. 140: Parts of Deception Island, annexed to Recommendation XIII-8 (1985), shall cease to be effective;
    - Management Plan for ASPA No. 145: Port Foster, Deception Island, annexed to Recommendation XIV-5 (1987), shall cease to be effective.
- Oceanites Compendium of Antarctic Peninsula Visitor Sites (July 2003 version)

Procedures for Visiting Stations (All found on IAATO Website)

- Procedures for Tourist or Non-Governmental Expeditions Requesting a Visit to BAS Research Stations or Historic Sites (IAATO website)
- Site Guidelines for Base A, Port Lockroy, Historic Site and Monument No 61 (IAATO website)
- Palmer Station Guidelines (3 parts)
- South Pole Guidelines

Activity Guidelines Associated with ATCM Resolutions

- ATCM XXVII Resolution 2 (2004) Guidelines for the Operation of Aircraft near Concentrations of Birds in the Antarctic
- Resolution 4 (2004) Guidelines On Contingency Planning, Insurance And Other Matters For Tourist And Other Non-Governmental Activities In The Antarctic Treaty Area
- ATCM XXVII Decision 4 Guidelines For Ships Operating in Arctic and Antarctic Ice Covered Waters

Inspection and Observer Checklist

- ATCM XIX 1995 Resolution 5 (B), Antarctic Treaty Inspection Checklist for Tourist Ships
- IAATO Observers Checklist for Provisional and Probational Members (October 2005)

Sub Antarctic Islands

- Copy of most recent South Georgia, Macquarie and New Zealand Sub Antarctic Management plans and other Sub Antarctic information.
- South Georgia Prion Island Code of Conduct (Note: Albatross is closed this season)
- South Georgia Prion Island Post Visit Report Forms
- South Georgia Post Visit Site Forms
- South Georgia Booklet (2005) Obtain from South Georgia website.
- Permits for Macquarie and the New Zealand Sub Antarctic Islands if appropriate

Domestic Legislation

- Appropriate and Relevant Domestic Legislation, per company, per country. For example, for US Companies, the US Antarctic Conservation Act 1978, public law 95-541 as Amended by the Antarctic Science, Tourism and Conservation Act of 1996 (Public Law 104-227) necessary for vessels carrying US Citizens. See ATCMXXV IP85 Regulatory Mechanisms That Address Antarctic Tourism for a complete list of domestic legislations. Other countries such as Argentina, Australia, Germany, Japan, New Zealand, United Kingdom etc. all have domestic legislation

Antarctic Treaty Related Documents

- Handbook of the Antarctic Treaty System 2002 *(http://www.state.gov/g/oes/rls/rpts/ant/)*
- Convention on the Conservation of Antarctic Marine Living Resources (1980)
- Convention on the Conservation of Antarctic Seals (1972)
- Protocol on Environmental Protection of the Antarctic Treaty (1991) (Annexes I-VI) *http://www.ats.aq/archive.php*
- Updated written List of Protected Areas (2003)-(Note from IAATO: will circulate updated version if published), CD was distributed by mail to members in 2004.

The Following ATCM Papers are Available for Reference

ATCM XXVIII, Stockholm, Sweden, 2005 *http://www.ats.aq/28atcm*

- IP 67 The Use of Heavy Fuel Oil in Antarctic Waters (joint paper with COMNAP)
- IP 81 Site Guidelines Analysis
- IP 82 IAATO Overview of Antarctic Tourism, 2004-2005 Antarctic Season
- IP 89 Proposed Amendments to the Standard Post Visit Site Report Form by the International Association of Antarctica Tour Operators
- IP 90 IAATO Site Specific Guidelines in the Antarctic Peninsula
- IP 95 Report of the International Association of Antarctica Tour Operators, 2004-2005
- IP 96 An Update on IAATO's Accreditation and Audit Scheme
- IP 97 Update on Boot and Clothing Decontamination Guidelines and the Introduction and Detection of Diseases in Antarctic Wildlife: IAATO's Perspective

ATCM XXVII, Cape Town, South Africa, 2004 *http://www.ats.aq/27atcm/e/index.htm*

- Measures 2-Additional agreed revised management plans agreed to at this meeting include: McMurdo Dry Valleys Antarctic Specially Managed Area Management Plans, Management

Plans for Cape Denison, Commonwealth Bay, George V Land, East Antarctica, Revised Management Plans for ASPA 113, Litchfield Island, Arthur Harbour, Anvers Island, ASPA 122 Arrival Heights, Hut Point Peninsula, ASPA 13, Biscoe Point, Anvers Island, ASPA 149, Cape Shirreff, Livingston Island, South Shetland Islands

ATCM XXVI, Madrid, 2003

- ATCM XXVI IP 69 IAATO Emergency Contingency Planning 2003-2004

ATCM XXV, Warsaw, 2002

- ATCM XXV IP 85 Regulatory Mechanisms That Address Antarctic Tourism
- ATCM XXV IP 72 Guidelines For Tourist Operations In Antarctica

Tourism Statistics and Information

Antarctic Tourism statistics, graphs and charts compiled by IAATO and NSF, can be found on the IAATO Website at *www.iaato.org* for 2004-2005.

Conservation Information and Fund Raising

- Albatross and Long Line Fisheries Lecture and Fund Raising information
- Virkon-Research findings have demonstrated the effectiveness of Virkon as a boot wash to reduce the risk of inadvertent transmission of pathological micro-organisms on boots in the Antarctic.
- CCAMLR Marine Debris in Antarctic Waters (placard)
- Help Stop Toothfish Poaching

Appendix B

IAATO Expedition Leader and Ship's Officers Seasonal instructions- Post Visit Site Report Instructions 2005-2006 Season

(July 29, 2005 version)

TO: All IAATO Office Representatives, Antarctic Captains, Expedition Leaders and Radio Officers

The following information is included in order to further guide the exchange of information among vessels, and to assist with co-ordination of itineraries and to facilitate the end of season reporting. Note this plan is subject to change. If a change is required an update will be sent.

Exchange of Itineraries

- IAATO members agree to exchange itineraries and coordinate schedules. This is a key factor in self-regulation, monitoring of activities and also in effective emergency response.
- Consult the IAATO schedule to determine which vessels will be in your cruising area. Specific landing sites noted on the schedule are given landing priority. Expedition companies were expected to input their schedules into on line the master ship scheduling system. The final IAATO schedule that will be issued in October 2005 will determine landing priorities. Any other changes or updates after this need to be done directly between the vessels.
- Itineraries must be communicated between vessels directly and not rely on corporate offices once the season begins.
- Be sure to also exchange environmental information and management recommendations for individual landing sites or other notices with your colleagues as the season progresses.

Itinerary Changes

- If your final itinerary changes, circulate by GMDSS, Telex by broadcast mode or radio or fax. Confirm during Radio Chat time at 1930. (Please note that few tour vessels have regular real-time exchange of e-mail.) Since all ships are supposed to be equipped with a GMDSS radio station, they should be able to scan a frequency in the 6310 KZ band (24 hrs). By using broadcast mode (one way) ships can send itineraries, ice information and other information as needed. These transmissions will be picked up by all vessels and should be able to print out the incoming message immediately.
- To avoid conflicts, notify vessels in the region of any changes in planned itinerary as soon as practicable.
- Notification should be by GMDSS radio telex first then INM-C, fax, telex, VHF or HF (see below).
- Notify any vessel of intention to cancel a landing. Due to itinerary changes, weather, ice etc. another vessel would appreciate having an additional landing option.

Landing Priority

- In general, priority is given to what is listed on the official IAATO schedule. Landing sites were pre-agreed prior to the season and resolved by all companies accordingly.
- In the event of conflict, expedition leaders should co-ordinate between themselves to determine priority, which is best accomplished through negotiation via HF or VHF.

- Please resolve any conflicts equitably. It is assumed that vessels visiting a site with some regularity will give way to a vessel that is not but any number of factors may come into play.
- Two vessels are not to land at the same place at the same time and, to avoid any potential environmental impacts, efforts should be made to spread out visits over time.
- If a company isn't specific about where in a particular place they plan to land (for example if Deception Island was listed but another company listed Whalers Bay), the company listing Whalers Bay is given priority.

Station Visits

- Expedition Leaders must provide 72-hours notice to station leaders of any planned station visit.
- Follow individual procedures determined by national programs/station leaders.
- Provide timely notice of cancellation, generally 48 hours in advance.
- Please include any additional station contact information, standard procedures or incidents involving stations, ships or government personnel in your voyage report to the home office.

Station Guidelines for Palmer, Rothera, Signy and Port Lockroy, Base A

- Visits to Palmer Station are not allowed on Sundays and preferably not on Saturdays. All Palmer visits have been prearranged. Any changes, please advise Palmer as soon as possible. There is an official Palmer Station schedule issued each season. Provide Palmer Station with 72 hours notice even though you have a prearranged visit. See Palmer Station Guidelines for further information.
- Visits to British Stations (Rothera, Signy, and Halley) have also been pre-arranged as per procedures by British Antarctic Survey.
- Port Lockroy: Base A has a specific visitation policy and site-specific guidelines provided by British Antarctic Survey. Please read these guidelines carefully.

Channel 16

- Channel 16 is used for hailing purposes only, NOT general communication.
- After making contact, immediately switch to another channel to continue conversation.
- Expedition Leaders should periodically review radio etiquette with staff. The airwaves during the height of the season in the Peninsula have been crowded, which is an issue with IAATO members and potentially with research stations. Take care to follow standard international procedures.

IAATO Radio Schedule

- IAATO members have agreed to implement a once daily radio schedule at 1930.
- Suggested HF hailing frequencies are: 4146 (1°), 6224 (2°)-SSB, 8294 (3°), to be finalized by radio officers during the season based on experience. Use 6224 whenever possible.
- Expedition leaders and or an appointed staff member should make use of this schedule whenever VHF communication is impossible for exchange information. This will reduce communication costs.
- Switch to another frequency for any extended conversation when talking on the above-mentioned HF (4146°, 6224°).
- Avoid long conversations over the radio if possible.

- Protocol for the 1930 chat time: All parties wanting to sort out schedules should make themselves known. Sort all itinerary business first and reschedule any other discussions for a later time. Anyone who simply wants to "chat" should find another time and frequency. ELs not available to talk at this time should appoint another individual to monitor in case a ship is trying to reach you.
- It is extremely important to not chatter on HF. In years past many EL's or staff simply did not listen to the chat channel because there were too many lengthy conversations. This channel must be open at 1930 for vessel scheduling and for communication of emergency situations. Again, if you need or want to chat longer, establish a different time and frequency.
- Vessels equipped with HF-Tlx should scan 6310.0 Khz TX/RX 24 hours.

GMDSS or Telex C or "other" Communication

- Each vessel is encouraged although not required to report the noon position (Ushuaia local time for the Peninsula Region) to each other via GMDSS radio telex or INM-C. Each radio officer should record this information.
- GMDSS (Global Maritime Distress Safety System) is the only reliable means of communication and it should be used daily by all ships.
- Since not all ships are equipped with GMDSS for all coverage, A1, A2, A3 and A4, ships without full coverage can only reliably communicate via INMARSAT-C. Therefore it is important for each ship to pre-establish by what means they will be communicating with each other. The INM-C and the pre-established GMDSS radio telex frequency will allow ships to share information daily. In an emergency, it is the only reliable means of communication.
- For additional information reference the agreed IAATO Emergency Contingency Planning Agreement, 14th General Meeting, 2003 and ATCM XXVI Information Paper 69 on Contingency Planning.

EMER (Emergency and Medical Evacuation Response)

- Review the IAATO EMER Plan — ask if there are any questions in order to have complete understanding.
- The reporting scheme indicated above is an integral part of emergency response. Please insure that it is followed and report any difficulties to your home office.
- Tourists cannot be disembarked at any station for medical reasons unless there is a medical evacuation response established.

Post-Visit Reporting

The Process

- Following Antarctic Treaty recommendations, complete Part 1 and Part 2 of the standard Post-Visit Site Report for every expedition. The 2005-2006 version of the form should be the ONLY form completed for Antarctica. At the end of each voyage return the form and a computer disc to the home office. It is preferable that the form is emailed to IAATO and US NSF after each trip; however some companies prefer to review the forms first. It is therefore the company's responsibility to forward the form as soon as possible to IAATO and NSF and not wait until the end of the season. Email to i*aato@iaato.org* and to *nkennedy@nsf.gov*.

- Always submit a computer version and hard copy of each form. Information gleaned from this form is tabulated and circulated internationally by the National Science Foundation, USA and by IAATO in the form of statistics and input into the tourism database. IAATO recommends that the Ship, individual EL's and each home office keep copies of each Post Visit Site Report. In.Fue.Tur in Ushuaia also requests a copy of this form in order for them to compile their tourism information.
- EL's, please note that this information is used for tourism statistics that are tabled worldwide. Please do not hastily fill this out. If you have questions, consult your home office.
- We cannot accept hand written forms. All forms must be typed and on the official EXCEL format. If the form is not compatible with the computers on board ship, notify your company representative immediately.
- Do not wait until the end of the season to send forms to IAATO and NSF and to your national authority. Due to the increased number of vessels during the season, we need the reports on a timely basis throughout the season.

The Standard Post Visit Site Report Form Instructions

This form is required in accordance with Antarctic Treaty Recommendation XVIII-1 and Resolution XIX-3 to be filled out by any person(s), companies or organizations visiting the Antarctic continent or any island or territory within the Antarctic Treaty region for the purposes of recreation or tourism.

The form consists of two parts; An Expedition record (part 1) and a Site Visit record (part 2) which must be completed by the Expedition leader or Captain and submitted to an appropriate national authority.

The Expedition record (Part 1) must be completed for every expedition to the Antarctic region regardless of whether any landings or visits to sites were made.

The Site Visit record (Part 2) should only be completed if visits or landings were made to sites in the Antarctic region. For cruise only vessels, you can include waterways.

Instructions for Filling Out This Form

This completed form will be processed electronically by a computer, to reduce errors and manual interaction. It is imperative this document be completed thoroughly and accurately. Please use the following instructions as guidelines while completing the data required in the two worksheets.

Throughout this form, please use ONLY the following date format: dd-Mm-yy (e.g. 12-Jan-02).

When selecting items from a drop-down menu, you may type a value in the menu for auto-search and fill feature.

PART 1 - Expedition Data

The Expedition Record is completed for each expedition.

1) Expeditions are categorized as either: Ship based, Yacht based, Aircraft or land- based.

2) Voyage/Flight Number should have the following format: 3-char ship code + Embarkation Date as 2-digit day + 3 char month + 4-digit year: USH28JAN2005.

3) Select Expedition Member Nationalities from the drop-down menu provided.

4) If you have a Nationality that is not listed in the drop-down menu, please use a line titled "Other (please specify)" and write in the full name of the member nationality's country of origin. Please do not use abbreviations. Use the official name of the country.

5) If you have used all of the available nationality lines and still have data to enter, please create a new spreadsheet and enter only the Expedition data (Section A) and the additional nationalities. On Part 1 - Section A - Cell B6, add the following text:

Continuation Sheet # where # represents the number of forms used so for to describe the expedition. Please do not duplicate any other data.

6) If the form is being submitted electronically, a typed name will be accepted for a signature.

PART 2 - Site Visit

Complete one line of the Site Visit record wherever Expedition members disembark or journey beyond base or camp.

1) Select Site Names from the drop-down menus provided.

2) If you have a Site that is not listed in the drop-down menu, please use a line titled "Other (please specify)" and write the full site name. If you enter Site data manually, you must include Latitude and Longitude co-ordinates; please use <u>one</u> of the recognized co-ordinate formats below:

Format		Example	
Latitude	Longitude	Latitude	Longitude
##°##'S	###°##'[W/E]	62°10'S	058°48'W
##*##'S	###*##'[W/E]	62*10'S	058*48'W
##d##'S	###d##'[W/E]	62d10'S	058d48'W
## ##'S	### ##'[W/E]	62 10'S	058 48'W

3) Times should be entered using GMT and a standard 24-hour format. (i.e. hh:mm - e.g. 14:35)

4) You may select up to three activities for each Site Visit entry. Use additional lines if more than three activities occurred or if the number of passengers differs per activity.

For example:

Date	Site	Pax	Staff	Crew	Obs	Total	Activities		
01-Jan-05	Paulet Island	25	3	2		30	Small Boat Cruising	Small Boat Landing	
01-Jan-05	Paulet Island	3	2			5	Scuba Diving		

Every row must have the date filled in. For example if a landing occurs in the morning and again in the afternoon the date must be filled in for both landings.

5) If you have used all of the available Site Visit lines and still have data to enter, please complete a new spreadsheet and enter only the Expedition Data (Part 1 - Section A) and the additional Site Visit data.

6) Camping activities that take place over two day periods need to have a separate row. For example, if the camping activity occurred at 2100 hrs on Dec 2 and ended at 0800 on December 3, then 2 rows are needed and the times ashore need to reflect both days.

On Part 1 - Section A - Cell B6, add the following text: Continuation Sheet # (number) *where # (number)* represents the number of forms used so far to describe the expedition. Please do not duplicate any other data.

7) If a station is visited by small boat, record in the activities section both small boat landing and station visit provided the same number of people took place in both activities.

8) If a vessel carries more than 100 tourists but only 100 are allowed on shore at anyone time, do not list per hundred. Simply record 300 tourists versus three rows of 100.

Other than data entry, do not modify this document in any way or it will not load properly in the database or the data loaded could be skewed!!!

At the end of each trip please email this report as soon as possible to: *iaato@iaato.org* and your national authority. Thank you for your cooperation and if you have any questions please contact us and we would be pleased to assist.

End of Season Reports

- At the end of the season each company is responsible for providing IAATO with a final report.
- Assure that both an electronic copy and hard copy of the Post Visit Site Report Forms are correct and have been sent to IAATO and NSF and your national authority.
- Send a final list of revenue versus non revenue passengers for purposes of IAATO billing. Non revenue passengers are home office personnel or scientists/government representatives being transported to or from stations or research sites.
- Science Assist and Transport: Provide information on the number, nationality of each scientist or group and the destination to where the transport occurred.
- List any donations or funds raised on board for environmental or cultural causes (e.g. Save the Albatross, Bird Life International, Orca Project, Antarctic Heritage Trust, Scott Polar Research Institute, Allied Whale Campaign etc.). List to whom it was sent and the dollar, Euro etc. amount sent. All this information is incorporated into IAATO's annual report. For detailed information see ATCM XXVIII IP 95 rev 1, IAATO Annual Report.
- Report any significant environmental impacts or changes that the officers, expedition staff noticed during the season.
- Report any type of problem with any Non- IAATO Member or Scientific Vessel or their passengers. If digital pictures are available please include.
- Submit the required incident report form to IAATO if there had been a problem. Use either the Whale report form or the Incident Report Form.
- Suggest ways of improving operational logistics and additional methods for minimizing environmental and potential cumulative impacts.

Have a safe and successful Antarctic season, and if you have any questions, please do not be afraid to ask.

Enjoy,

Denise Landau

Appendix C

2005-2006 Partial List of Donations

The following chart is a partial list of donations that were given by Members or raised by expedition staff and passengers on board vessels during the season. It is known that passengers make individual contributions to various organizations independent of organized campaigns. Various companies have reported funds raised but are in the process of allocating monies or prefer not to be listed here.

Member	Birdlife International-Albatross	Save the Albatross-Australia	Antarctic Heritage Trust and Donation to Ross Sea Huts	Other
Abercrombie & Kent/Atholl Shipping		$10,635 USD (Bait Setting Capsule Project)		
Zegrahm Expeditions	$39,800 USD			
Quark Expeditions		$1,278 USD	$11,837 USD	$360 Flying Scholarship for the Disabled
Hapag Lloyd		€14,900	$1,860 USD	$1,000 Museum Grytviken
Lindblad Expeditions				$119, 474 USD Oceanites
G.A.P Adventures	$29,000 USD			$2,049 USD Oceanites
Heritage Expeditions		$10,000 NZD		
Fathom Expeditions				$6,000 USD Whale Conservation (Stop Antarctic Whaling)
Cheesemans' Ecology Safaris		$2,874		$6,645 USD American Bird Conservancy
Orion Expedition Cruises			$12,100 AUD	$40,125 AUD
Ofotens Og Vesteraalens Dampskibsselskab ASA (OVDS)/Hurtigruten		$10,561		$10,561 USD to the Orca Project $5,281 USD to the South Georgia Heritage Trust
Saga Shipping Company				£5,768.66 Bantay Bata £6,944 U.K. Antarctic Heritage Trust £598.98 Seafarers Mission

The amounts do not include all vessels or private donations that tourists have made once at home. Many ships provide their passengers with a list of organizations of whom to donate to. In addition other organizations benefit indirectly from passengers donations. The information included above is based on what was provided to the IAATO Secretariat.

Appendix D

Partial list of Science Support and Transport by IAATO Operators in 2005-2006

The following is a partial list of support. As always there is in kind support that is unreported but is an important part of cooperation between the tourist industry and the National Programs and Sub Antarctic Islands.

Member	Program or Personnel Assisted
Abercrombie & Kent/Atholl Shipping	South Georgia: Transport of 7 personnel from the U.K., USA and Netherlands Fildes Peninsula Meeting: Transport of 10 persons from Ushuaia to Bellingshausen
Adventure Network International/Antarctic Logistics and Expeditions	British Antarctic Survey: 3 aircraft visits. BAS field research group based at Patriot Hills for 19 days. Bristol University and Centro de Estudios Científicos: Flights and accommodation for 11 staff. Provided vehicles and field staff for 1000km snowmobile and tractor traverse to Lake Ellsworth. GANOVEX9: 1 aircraft visit, 2 staff, provided fuel and accommodation National Science Foundation: prepared groomed skiway for three visits by ski-equipped Hercules. NSF field research group based at Patriot Hills for 19 days. Technische Universität Hamburg-Harburg: Field research group based at Patriot Hills for 15 days Provided flights to Patriot Hills for observers from Chile Region XII International Police and Punta DGAC.
Aurora Expeditions	Supplied return transportation of four carpenters to Mawsons Huts for restoration work. 2 Scientists from Macquarie Island to Hobart 9 Scientists from Hobart to Macquarie Island 1 Australian Antarctic Division personnel New Zealand-transport of personnel to Campbell Island Medivac rescue of a crew member from Ukrainian fishing boat *Paloma V* to Mario Zuchelli Base
Clipper Cruise Line	United States Antarctic Program: transported 10 Scientists from Palmer to Ushuaia
DAP	Assisted with 24 days of whale research with Chile (INACH)
G.A.P. Adventures	United Kingdom: Provided transport from Stanley to Grytviken, South Georgia
Hapag Lloyd	15 German and French Scientists to Jubany and Bellingshausen 1 United Kingdom from South Georgia

Member	Program or Personnel Assisted
Heritage Expeditions	Norway: transported Rune Gjeldness from Mario Zuchelli to New Zealand, 1 scientist from Macquarie to NZ, 2 Scientists to Adams Island, provided meals/hot showers for 3 scientists working in a remote field camp
Lindblad Expeditions	Provided transport for Oceanites personnel throughout the season
Ofotens Og Vesteraalens Dampskibsselskab ASA (OVDS), (now Hurtigruten)	Transport of personnel from: Poland (Arctowski to Ushuaia), Republic of Czech (Vernadskiy to Ushuaia), United States (Copacabana to Punta Arenas), Fildes Peninsula Meeting Team (13 individuals from Ushuaia to Bellingshausen)
Peregrine Shipping	Transported Sally Poncet and Ellen MacArthur from Albatross Island, South Georgia to Grytviken and Ushuaia respectively. Funded Sally's Albatross Research Program Transported 5 Bulgarian scientists from Antarctica to Ushuaia.
Polar Star Expeditions	United Kingdom, Australia, United States (transport from Stanley to Prion Island and from Petermann Island in the Antarctic Peninsula to Ushuaia
Quark Expeditions	10 people were transported on behalf of Tasmanian Parks and Wildlife, New Zealand Department of Conservation, United States National Science Foundation, Falklands Conservation New Zealand: Carried an additional New Zealand/Department of Conservation observer for training purposes United States: Quark's icebreaker, the *Kapitan Khlebnikov* spent 24 hours assisting the US chartered Russian icebreaker *Krasin* in breaking ice near McMurdo Station. United States: provided assistance to U.S.A.P and Raytheon Technical Services with the project G-079 Franklin Island equipment inspection and removal. Germany: assisted GANOVEX IX, Federal Institute Geosciences and Natural Resources with the delivery of helicopter fuel to Gondwana Station
Travel Dymamics	Ukraine (Food Supplies)

Report by the International Hydrographic Organization (IHO) on "Cooperation in Hydrographic Surveying and Charting of Antarctic Waters"

Introduction

Once again the International Hydrographic Organization (IHO) would like to take this opportunity to thank the Antarctic Treaty System (ATS) for having invited our Organization to report at the Antarctic Treaty Consultative Meeting (ATCM), on the progress made in the Cooperation in Hydrographic Surveying and Charting of Antarctic Waters. This report covers the period between the XXVIIth and XXIX ATCMs.

IHO is proud of its direct contribution to safety of life at sea, safety of navigation, the protection of the marine environment and the marine scientific research in Antarctica. The coordination of all the Hydrographic Offices with responsibilities in the Antarctic provides a unique example of teamwork aiming at updated and reliable hydro-cartographic products. In this sense, the IHO Hydrographic Committee on Antarctica plays an important role and works closely with several other international organizations, to increase the value of its efforts.

The encouragement of continuing efforts made to the IHO by the XXVIIIth ATCM in Stockholm last year was received as an expression of support to the activities conducted by the Organization, mainly by its Hydrographic Committee on Antarctic.

The IHO Hydrographic Committee on Antarctica

The Hydrographic Committee on Antarctica (HCA) met in the International Antarctic Centre in Christchurch, New Zealand, on 2-4 November 2005, thanks to the kind invitation of New Zealand Government, through Land Information New Zealand (LINZ). At this meeting we were honoured by the presence of Mr. Johannes Huber, Executive Secretary of the Antarctic Treaty Secretariat who participated actively on the debates. The IHO would like to highlight this as a clear demonstration of the excellent existing relationship between the ATS and the IHO.

At the above-mentioned meeting, amongst other technical topics, the following issues were discussed in detail:

a) The Committee membership status as it has been noted that several potential participating MS had not yet signed the HCA statutes.
b) The progress made so far as regard to the production of INT charts and ENC.
c) Procedure and methodology to update and visualize the content of IHO S-55 Publication "Worldwide Status of Hydrographic Surveying and Nautical Charting", as regard to Antarctica.
d) The way to continue improving the existing excellent relations and cooperation with other international organizations.
e) The Report submitted by the HCA Hydrographic Survey Programme Working Group.

HCA Membership

As regard to HCA membership, the Committee agreed to contact each of the following IHO Member States who have not yet signed the HCA Statutes, (i.e. Brazil, Ecuador, Japan, Rep. of Korea, Peru, Poland, Ukraine, USA and Uruguay), with a view to obtaining clarification of their intentions about

participating in HCA activities. It was decided that, meanwhile, they will appear in a separate "pending confirmation of membership" list. Actually 15 IHO MS (Argentina, Australia, Chile, China, France, Germany, Greece, India, Italy, New Zealand, Norway, Russia, South Africa, Spain and United Kingdom) have signed the HCA statutes which were agreed at the 3rd HCA Meeting (Monaco, September 2003) and therefore qualify as HCA Members.

INT Chart Production

The INT Chart production, continues to show progress. Out of 91 INT charts contained in the cartographic scheme, 56 have already been published (Annex A). That means that there has been an approximate 25% increase since last year.

The production of ENC also has shown an increase, and today we have 8 Charts available as ENC.

IHO Publication S-55

There is a clear understanding that IHO Publication S-55 "Worldwide Status of Hydrographic Surveying and Nautical Charting" needs to be kept updated, and the IHO through the HCA claims for action to its members. The way in which S-55 is presented in the IHO website might be improved by the way of a dedicated visualization software, allowing the user to get a clear picture of the situation for strategic planning, decision-making, international coordination of a work program, and other activities. With the support of some HCA Members, the IHB has been testing different alternatives to be used for this purpose that also could be used as a prototype for other Regional Hydrographic Commissions. It seems that a solution has been found and at the next HCA Meeting the IHB will be in a position to demonstrate a system for consideration.

Relation with other International Organizations

The IHO has been honoured with the strong support of several international organizations such as IMO, IOC, IAATO, COMNAP, and the proper ATS. The participation of the Executive Secretary of the ATS, as mentioned earlier in this report, is an example. Another is the invitation received by IAATO to have the Chairman of the HCA WG on board an IAATO ship and get an in-situ perspective of the hydrographic needs in Antarctic. The contribution of all has been outstanding. A practical suggestion to submit working papers to the ATCM through COMNAP was considered an excellent alternative to emphasize the joint work HCA does with all organizations involved in different ways with hydrography, nautical cartography and marine safety information, products and services. One of the concerns expressed at the meeting was about the applicability of SOLAS V in Antarctica, in particular regarding the obligation/responsibility for the provision of hydrographic services. It was agreed to seek IMO's views but it would also be interesting to learn ATCM position in this regard.

Progress made by the Hydrographic Survey Programme Working Group.

As the ATCM is aware, in 2004 the HCA established a Hydrographic Survey Programme Working Group aiming to improve effectiveness by establishing priorities as regard to hydrographic surveys to be conducted, priorities that could be considered by MS in their participation associated with the International Polar Year or in their normal planning.

The achievements made by the Hydrographic Survey Programme Working Group can be summarized as follows:

A. **Data Rendering Form** – Guidelines for the gathering and submission of hydrographic data in Antarctic waters, essentially coming from IAATO and COMNAP ships, were developed. The form for submitting data was agreed and is included as Annex B. It was agreed that all forms, when completed, would be collated in a single point, and the UK

Hydrographic Office was identified. (c/o Chairman of HCA Survey Programme WG). The IHO has given wide distribution to this Guidelines and Form through COMNAP and IAATO and also has posted the documents in the IHO website.

B. **Additions to the INT Chart Scheme** – Following a proposal by IAATO to include additional charts to the INT Chart Scheme for Region M, in the Antarctic Peninsula, WG officers studied the proposals and developed the details for 20 additions to the scheme (see Annex C). Those additions were accepted by the HCA and the IHB was tasked, in liaison with the WG Chairman, to prepare an update of the scheme. (Annex D)

C. **Maritime Shipping Routes (MSR)** – The WG developed a list of main and branch corridors around the Antarctic Peninsula, based on a submission by the UKHO (Annex E). This was complemented by a submission from the Australian Antarctic Division, for MSRs between Australia and the Australian bases in Antarctica. A proposed long term survey plan was prepared by assigning Usage Category and Survey Status Category values to each corridor (Annex F). This plan was accepted by the HCA.

D. **High Priority Surveys** - Also the HCA approved a proposal identifying a short list of high priority surveys (Annex G), with the aim that focus should be on surveying those areas on the occasion of the IPY. The short list has been submitted for endorsement to the IPY Coordinating Committee, ATCM and COMNAP; and circulated to IHO Member States for information and possible inclusion in their national survey programmes.

Conclusions

1. Coordination and cooperation between the IHO and other international organizations interested in the Antarctica is a fact, and the progress made is evident. The participation of the ATS Executive Secretary at the last HCA meetings has proven to be beneficial to all those institutions attending HCA meetings, and this practice should be continued.
2. The availability of INT Charts, from 45 last year to 56 nowadays, is a clear indication of the progress achieved so far by the IHO. New demands of INT charts put an extra pressure on the need to conduct hydrographic surveys.
3. The establishment of the HCA Hydrographic Survey Programme Working Group has been an excellent idea and the progress so far reached, a great contribution to guide the hydrographic effort in Antarctic.

Recommendations

It is recommended that the XXIXth ATCM :

1. Accepts the IHO Report.
2. Acknowledges the increasing demand of INT charts and the progress so far made in its production.
3. Endorses and supports the procedure established for the Collection and Rendering of Hydrographic Data approved by HCA.
4. Takes note and endorses the short list of High Priority Surveys identified by the HCA.
5. Invites IHO to continue efforts and to increase the coverage of hydrographic information in Antarctic, especially in main passages and ports, and where there are vulnerable or protected marine areas.

Monaco, April 2006.

ANNEXES

A: List of Published INT Charts (INT Chart Scheme for Antarctica not included)

B: Form for Rendering Hydrographic Data

C: 20 New INT Charts included

D: New M Scheme

E: Diagram

F: Long Term Surveys Plan

G: List of High Priority Surveys

ANNEX A

List of Published INT Charts (April 2006)

INT No.	Producer	Date Last Edition	Scale 1:
900	NZ	1998	2 000 000
901	FR	2006	2 000 000
902	RU	2000	2 000 000
903	RU	2001	2 000 000
904	NO	2002	2 000 000
906	GB	2005	2 000 000
907	GB	2000	2 000 000
9005	IT	2000	50 000
9006	NZ	2003	50 000
9007	NZ	2003	60 000
9008	NZ	2003	200 000
9009	NZ	2004	500 000
9010	RU	2000	500 000
9011	RU	2000	200 000
9012	NZ	2006	750 000
9014	AU	2002	25 000
9015	FR	2004	500 000
9016	FR	2003	100 000
9017	FR	2002	20 000
9020	AU	1998	500 000
9021	AU	2006	50 000
9025	RU	1999	500 000
9026	RU	1999	200 000
9027	RU	1999	10 000
9030	AU	1992	500 000
9031	AU	2002	500 000
9032	AU	2003	12 500
9033	AU	1991	500 000
9035	AU	1993	500 000

INT No.	Producer	Date Last Edition	Scale 1:
9036	AU	2005	25 000
9037	AU	2006	25 000
9040	RU	2000	500 000
9041	RU	1999	100 000
9042	RU	1999	12 500
9050	RU	1999	500 000
9051	RU	1998	200 000
9056	ZA	2005	300 000
9060	RU	2000	500 000
9061	GB	2004	200 000
9102	CL	2003	10 000
9106	GB	1996	60 000
9109	GB	1999	25 000
9120	AR	2004	50 000
9121	ES	1998	35 000
9122	CL	1998	20 000
9141	GB	2006	50 000
9142	AR	2005	10 000
9150	BR	1999	200 000
9153	GB & AR	2004	150 000
9154	GB & AR	2002	150 000
9155	CL	2003	150 000
9156	AR	2005	150 000
9158	GB	2003	150 000
9159	GB	Proj. 2006	150 000
9160	GB	Proj. 2006	150 000
9163	GB	2005	150 000
9170	AR	1997	500 000
9172	RU	1999	500 000

Also available as ENC

ANNEX B

Form for Rendering Hydrographic Data

To be returned to: Chairman of IHO HCA Survey Programme WG, Mr. Andrew C. WILLETT, Chart Branch 9 – Antarctica, United Kingdom Hydrographic Office, Taunton, Somerset TA1 2DN, UK - *andy.willett@ukho.gov.uk* - Fax: +44 (0)1823 284077

ANTARCTIC VESSELS

General Area:	Antarctic Peninsula		South Georgia		South Shetlands			
	South Orkneys		Other - please state					
Location:								
Vessel Name:					Draught	……..metres		
Captain:			Date					
Data format:	Chart/Chart cutting		Plotting sheet		Tracing			
	UKHO collector		Floppy disc/CD rom		Photographs			
	Other - please state							
See Note 1								
Position fixing:	GPS		Visual/radar		Other – please state			
	Model of receiver							
	Datum setting ie.WGS84							
	Remarks: eg. Plotting errors between GPS and chart (note 2.3)							
See Note 2	Calibration date:							
Echo sounder:	Make		Name/type					
Scale setting:	Depths recorded from:	Sea surface		Under keel				
Sound velocity:	Correction made?	No		Yes		……Metres per second		
Transducer displacement applied (see note 3.6):	N/A		Yes		No			

Details of transducer displacement:

X offset = Port (-) or Stbd(+) from GPS receiver	Y offset = Aft (-) or Fwd(+) from GPS receiver	Z offset = Above (-) or Below(+) from GPS receiver
…….……Metres	…….……..Metres	…….……..Metres

See Note 3 (also UKHO NP 100 2.79-2.103)

Echo trace rendered: Yes ☐ See note 4 No ☐

Speed of vessel ☐

Lights report rendered No ☐ Yes ☐

Name/location	Position	Working: Y or N	Characteristics? checked: Y or N	Remarks

---

Buoys/beacons report rendered No ☐ Yes ☐

Name/location	Position	Condition: good, bad, missing	Remarks

Conspicuous Objects report rendered | No | | Yes | |

Name/location	Position	Bearing from seaward	Description and remarks

Views report rendered | No | | Yes | |

Location	Position/bearing from seaward	Panoramic	Pilotage	Portrait	Close-up	Remarks

See Note 5. Also latest Antarctic Pilot requirements

Note 1

The largest scale chart, a plotting sheet at a similar scale, a UKHO collector, a tracing or chart cutting should be used to plot the ships position during data collection.

If a chart cutting is used the additions and alterations should be marked in red. If a tracing is preferred, the additions should be marked in red, with adequate chart detail in black to enable fitting down. If a chart is rendered with data inserted, a replacement copy will be supplied free of charge.

Computer discs and CD Roms are also an easy way to render data and photographs, but must have easily readable formats.

Note 2

1. *Visual fixes:* To ensure the greatest accuracy, a fix defined by compass bearings or ranges, should consist if possible of more than two observations. These observations should be taken as nearly as possible simultaneously, carefully recorded at the time and listed in the report with any corrections that have been applied to them.
2. *GPS positions:* The report should state which datum was set on the receiver outputting positions,(eg WGS84 Datum) and/or whether any shifts quoted on the chart have been applied.
3. Mariners are requested to report observed differences between positions referred to chart graticule and those from GPS, referenced to WGS84 Datum.

Note 3

The following information should be included about the echo sounder:

1. Make, name and type of set.
2. The number of revolutions per minute of the stylus (checked by stopwatch) (see NP100)
3. The speed of sound in sea water in metres per second equivalent to the stylus speed.
4. Whether soundings have been corrected from *Echo-sounding correction tables*.
5. Setting of the scale zero. That is whether depths are recorded from the sea surface or from under the keel.
6. Where the displacement of the transducers from the position of the GPS receiver or other instrument used to fix is appreciable, the amount of this displacement and whether allowance has been made for it should be reported.
7. For methods of checking the accuracy of a sounder see NP100 2.87 - 2.89.
8. Where numerous sounding lines have been produced, it would be desirable to run “cross lines” at right angles to the main lines to provide an extra check on the validity of the data surveyed.

Note 4

Echo Trace

If an echo trace is rendered it should be marked as follows:

1. A line drawn across it each time a fix is taken, and at regular intervals.
2. The times of each fix and alteration of course inserted, and times of interval marks at not more than 15 minute intervals.
3. The position of each fix and other recorded events inserted where possible, unless a GPS printout or separate list of times and corresponding positions is enclosed with the report.
4. The recorded depths of all peak soundings inserted.
5. The limits of the phase or scale change in which the set is running marked, noting particularly when a change is made.
6. Name of ship, date, zone time used and scale reading of the shoaling edge of the transmission line should be marked on the trace. (diagram 8.14 in NP100)

Note 5

Views

New photographs should be obtained whenever possible and where a new view would help the mariner. An imperfect photograph, correctly annotated, can often be used to produce a view of considerable help to the mariner.

The various types of views and examples are given the following names:

1. *Panoramic*. A composite view made up from a series of overlapping photographs. This type of view is intended to show the offshore aspect including hinterland.
2. *Pilotage*. A single or composite view from the approach course to a harbour or narrows showing any leading marks, transits or conspicuous fixing marks. It may be combined with a close-up of the mark if necessary for positive identification.
3. *Portrait*. The single view of a specific object set in its salient background.
4. *Close-up*. Single views of one object or feature with emphasis on clarity of the subject for its identification.

The UKHO can supply a prioritised list of requirements for views that are needed for NP9. The Editor of the Antarctic Pilot is available to give advice on views required. (Telephone +44 (0)1823 337900 Ext 3480)

Note 6

Sailing Directions. Proposed amendments to the text of the Antarctic Pilot are always welcome. No particular format is required, but a Hydrographic note (H102) is a convenient method of forwarding data.

Note 7

Any other observations, comments or remarks that the mariner thinks would improve charting coverage or the Sailing Directions is always gratefully received in the Hydrographic Office. Examples of these include transit notes and tracings or chart cuttings delineating areas of kelp. Constructive comments on chart coverage or the lack of it are useful for the future planning of charts and surveying.

References: UKHO publications NP9 and NP100

ANNEX C

20 New INT Charts Included

Location/Title	Scale	North	South	East	West	Size
Penguin Island	1:20K	62°05'.0S	62°08'.0S	57°52'.5W	57°59'.5W	278 x 304mm
Danger Islands	1:50K	63°19'.0S	63°30'.0S	54°29'.0W	55°04'.0W	408 x 591mm
Fridtjof Sound	1:50K	63°29'.0S	63°38'.0S	56°34'.0W	56°55'.0W	334 x 338 mm
Brown Bluff	1:10K	63°30'.2S	63°31'.4S	56°51'.0W	56°55'.0W	223 x 330 mm
Gourdin Island	1:15K	63°10'.4S	63°12'.2S	57°15'.0W	57°21'.0W	223 x 335 mm
Crystal Hill to Devil Is.	1:75K	63°31'.0S	63°49'.0S	57°13'.0W	57°55'.0W	446 x 462 mm
Bald Head	1:10K	63°37'.0S	63°38'.0S	57°35'.6W	57°38'.6W	186 x 247 mm
View Point	1:10K	63°31'.8S	63°32'.8S	57°22'.0W	57°25'.0W	186 x 247 mm
Matts Head	1:10K	63°37'.4S	63°38'.4S	57°39'.2W	57°42'.2W	186 x 247 mm
Crystal Hill	1:10K	63°38'.7S	63°39'.8S	57°43'.3W	57°49'.8W	204 x 536 mm
Camp Point	1:10K	63°40'.2S	63°41'.2S	57°48'.0W	57°51'.0W	186 x 247 mm
Devil Island	1:10K	63°47'.2S	63°48'.2S	57°15'.6W	57°18'.6W	186 x 247 mm
Active Sound	1:50K	63°20'.0S	63°30'.0S	55°50'.0W	56°20'.0W	371 x 500 mm
Snow Hill Island	1:30K	64°18'.0S	64°24'.0S	56°53'.0W	57°10'.0W	272 x 455 mm
Hydrurga Rocks	1:10K	64°07'.5S	64°09'.5S	61°35'.0W	61°40'.0W	372 x 405 mm
Freud (Pampa) Passage	1:50K	64°12'.5S	64°22'.0S	61°58'.0W	62°13'.5W	353 x 251 mm
Grandidier Channel	1:75K	65°22'.0S	65°52'.0S	64°05'.0W	65°50'.0W	1073 x 744 mm
Crystal Sound	1:75K	65°50'.0S	66°32'.0S	66°10'.0W	67°15'.0W	648 x 1041 mm
Point Wild (UKHO collector)	1:10K	61°04'.0S	61°07'.0S	54°49'.0W	54°54'.5W	\
Cape Valentine (UKHO collector)	1:10K	61°04'.0S	61°07'.0S	54°35'.0W	54°40'.5W	\

ANNEX D

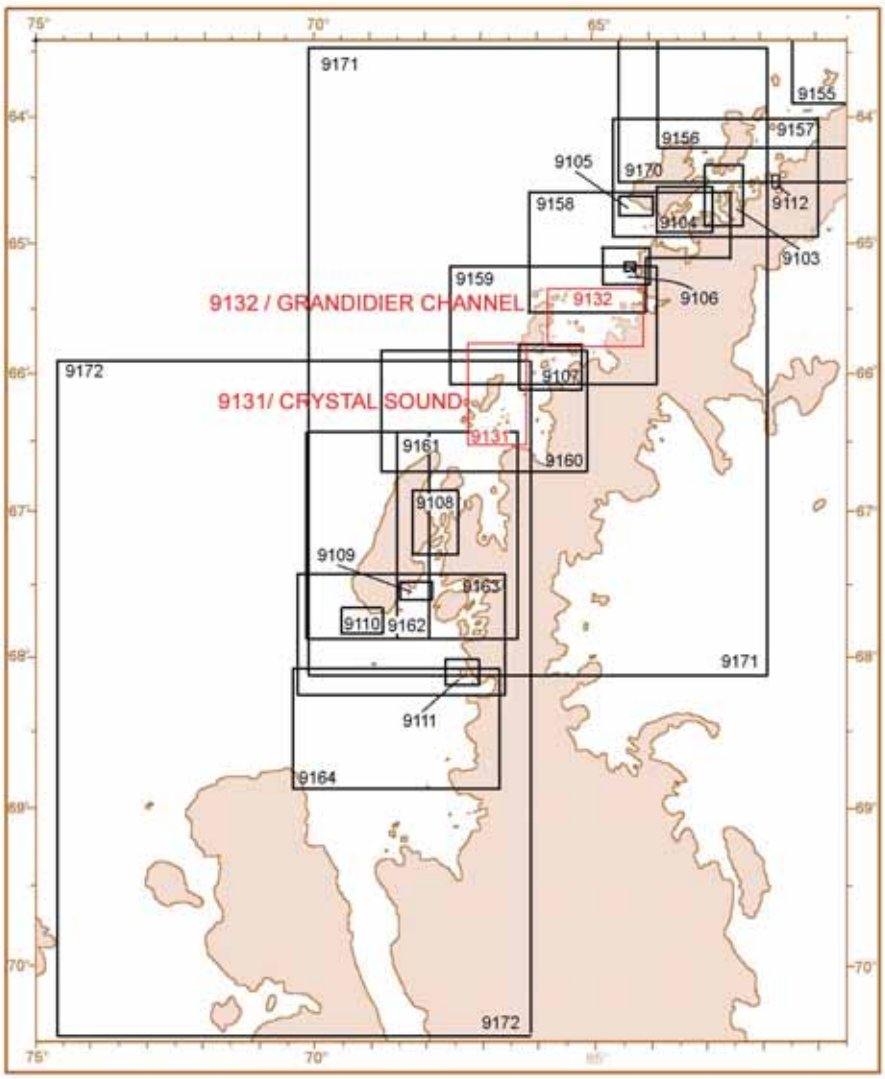
New Region 'M' Scheme

Red colour: New charts or plans

ANTARCTIC PENINSULA,
GRAHAM LAND – PALMER LAND

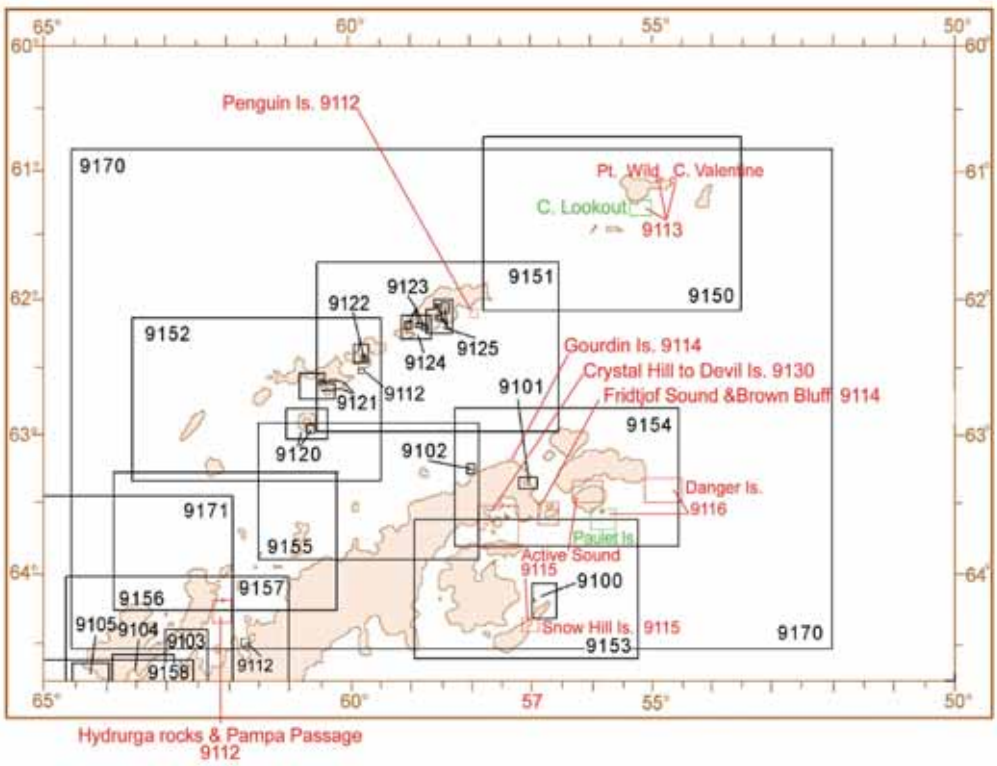
PENINSULE ANTARCTIQUE, TERRE DE GRAHAM – TERRE DE PALMER

Green colour: Plans transferred to other charts



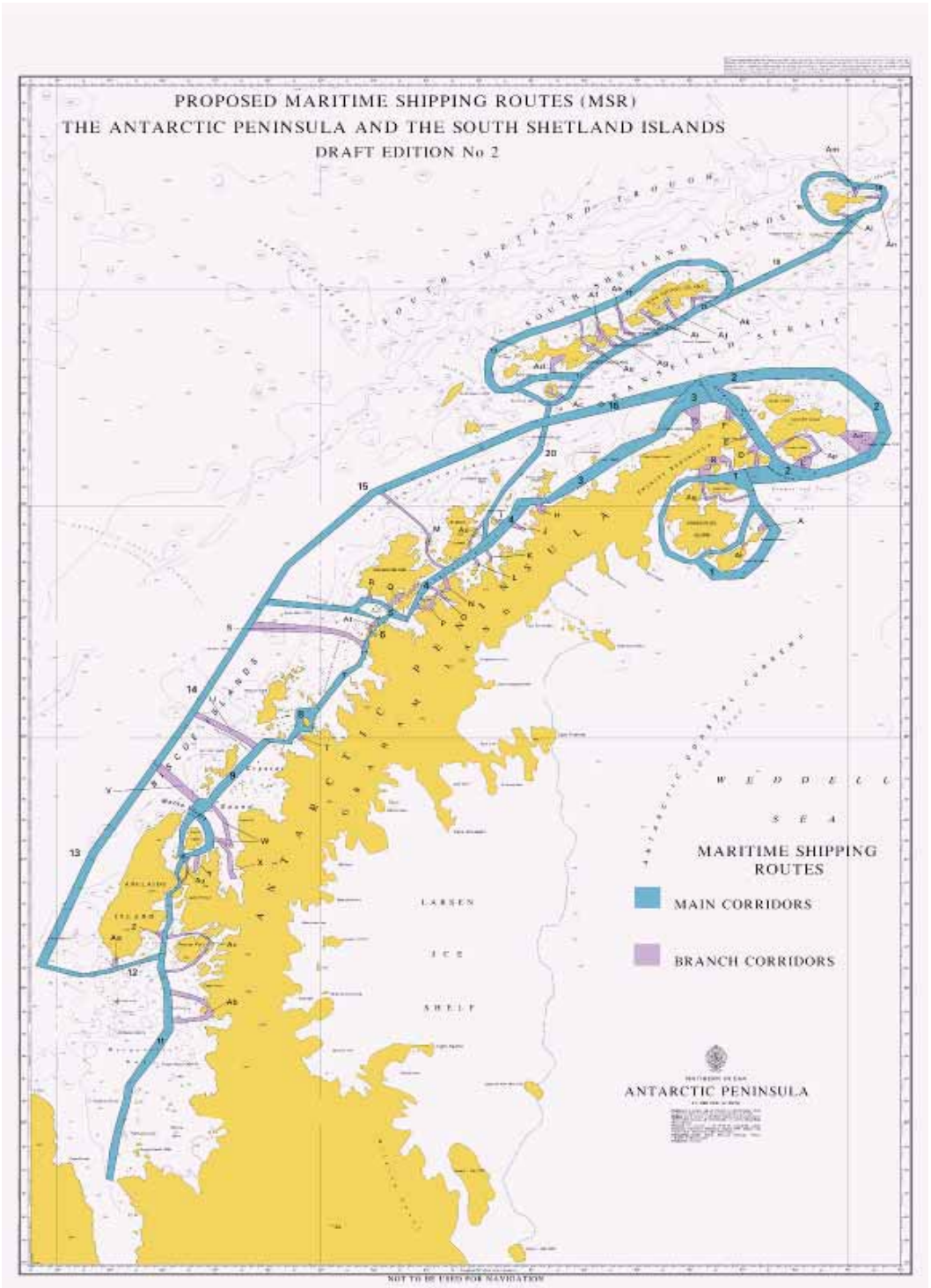
ANTARCTIC PENINSULA, GRAHAM LAND – SOUTH SHETLAND ISLANDS

PENINSULE ANTARCTIQUE, TERRE DE GRAHAM – ILES SHETLAND DU SUD



ANNEX E

Diagram



ANNEX F

Long Term Survey Plan

Table of MSRs, base/site calls, usage category, and current survey category

I. ANTARCTIC PENINSULA

Categories

Category	Usage
A	Frequent
B	Regular
C	Infrequent

Category	Current survey status
A	Adequately surveyed
B	Requires re-survey at larger scale or to S-44 standard
C	Has not been systematically surveyed/Unsurveyed

Main corridors (see diagram on last page for MSR references)

MSR*	Name	Usage category	Survey category	Notes and INT chart coverage. Published and *proposed.*
1	James Ross Island cicular route	B+C	A + C	40% surveyed (Prince Gustav Channel), 60% unsurveyed. In UKHo survey plan. INT 9153
2	Joinville Island circular route	A+B	A + C	45% surveyed (Antarctic Sound), 55% unsurveyed. INT 9154
3	Orleans Strait to Antarctic Sound	B	B + C	INT 9155
4	Gerlache strait	A	A + C	20% surveyed. *INT 9156 & 9157*
5	Bismarck Strait	A+B	A + B	Approaches to Palmer Station and Port Lockroy. INT 9158
6	Lemaire Channel	A	B	Petermann Is, Pleneau Is,Argentine Is, Yalour Is. INT 9106
7	Grandidier Channel	A+B	B	INT 9158 & *9159*
8	Cape Garcia to Jagged Island	B	C	*INT 9159*
9	Crystal Sound	B	B	Numerous reports of uncharted rocks. *INT 9160*
10	Liard Island to Rothera	B	C	*INT 9161, 9108 AND 9163*
11	Marguerite Bay	C	B + C	*INT 9163 & 9164*
12	Woodfield Channel	C	B	*INT 9163*
13	Woodfield Channel to Matha Strait	B	C	*INT 9162 & 9160*
14	Matha Strait to Hugo Island	B	C	*INT 9160, 9159* & 9158
15	Hugo Island to Low Island	B	B + C	*INT 9156, 9157 &* 9158
16	Low Island to Antarctic Sound	C	B + C	INT 9154, 9155 & *9156*
17	South Shetlands MSR	A	C	*INT 9151*
18	Elephant Island MSR	A+C	C	INT 9150
19	Elephant Island to KGI	A	C	INT 9150, *INT 9151*
20	Deception Is to Brabant Island	A	C	INT *9120,* INT 9155*, 9156, 9157*

* MSR = Maritime Shipping Route. The figures / letters in this column are shown on the MSR diagram which is at Annex E.

Branch corridors and approaches

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed
A	Marambio	B	C	*INT 9100*
B	Duse Bay and Eagle Island	B	C	Includes Crystal Hill. INT 9154
C	Paulet Island	A	A + C	50% surveyed, remaining area top of UKHO priority. *INT 9112*
D	Brown Bluff and Fridtjof Sound	A	C	INT 9154
E	Hope Bay	A	B	*INT 9101*
F	Gourdin Island and Siffrey Point	B	C	INT 9154
G	Bernado O' Higgins and approaches	C	C	INT 9102
H	Curtiss Bay	C	C	INT 9155 & *9156*
I	Hydrurga Rocks	B	C	*INT 9156 & 9157*
J	Alcock Island	C	C	*INT 9156 & 9157*
K	Portal Point	C	C	*INT 9112*
L	Enterprise Island	B	C	*INT 9157*
M	Melchior Islands and approaches	A+C	C	*INT 9157*
N	Errera Channel	A	C	Includes Cuverville Is, Danco Is and Ronge Is. *INT 9103*
O	Andvord Bay	A	C	Includes Neko Harbour. *INT 9103*
P	Paradise Harbour	A	C	Almirante Station and Waterboat Point. *INT 9104*
Q	Neumayer Channel and Port Lockroy	A	A + C	70% surveyed, north Neumayer Channel to finish INT 9158 & *9104*
R	Arthur harbour	B	C	*INT 9105*
S	French Passage	B	B	INT 9106
T	Prospect Point	B	C	*INT 9107*
U	Pendleton Strait	B	B	*INT 9159*
V	Matha Strait	B	C	*INT 9160*
W	Detaille Island and approaches	C	C	*INT 9161*
X	Lallemand Fjord	C	C	*INT 9161*
Y	Shumskiy Cove	C	C	*INT 9108*
Z	Rothera	B	A	BAS and RN vessels. INT 9109
Aa	Avian Island	C	B	*INT 9110*
Ab	Approaches to Millerand Island	C	B	*INT 9111*
Ac	Deception Island and Port Foster	A	B	Whalers Bay. *INT 9120*
Ad	South bay and Hannah Point	A	A	INT 9121
Ae	McFarlane Strait	A	A + C	Half Moon Is cat A, Yankee Harbour cat B, rest cat C. INT 9121 & *9112*
Af	English Strait	A	B	Aithcho Islands and Discovery Bay. INT 9122 & *9152*
Ag	Robert Point	C	C	*INT 9151*
Ah	Nelson Strait	C	C	*INT 9151*
Ai	Maxwell Bay and approaches	A	B	Ardley Cove, Marian Cove and Potter Cove. *INT 9123*
Aj	Admiralty Bay	A	B	Artowski Station, Ferraz Station and Martel Inlet. *INT 9125*
Ak	Penguin Island and approaches	A	C	Endurance 2005 survey. *INT 9151*
Al	Cape Lookout	B	C	*INT 9112*

II. MAINLAND ANTARCTICA**

Main corridors

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed.
	Hobart to Macquarie Island	C	A + B	Annual re-supply station by Aurora Australis. Tourist vessels and fishing boats Charts - Hobart AUS173 and 174 Macquarie Island – AUS604 Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Casey station	C	A + B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels. Charts. Hobart AUS173 and 174 Casey - INT9021 (AUS601) Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Davis	C	A + B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels Charts - Hobart AUS173 and 174 Davis – INT9032(AUS602) Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Mawson	C	A+B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels Charts Hobart AUS173 and 174 Mawson – AUS600 Cape Darnley to Tasmania - INT 74 (AUS 4074) Magnet bay to Cape Rouse – AUS449
	Hobart to Heard Island	C	A+C	Marine science voyage by Aurora Australis, customs patrol vessels plus occasional tourist and fishing vessels. Charts Hobart AUS173 and 174 Heard Island – AUS605 Cape Darnley to Tasmania - INT 74 (AUS 4074) Magnet bay to Cape Rouse – AUS449
	Fremantle to Heard Island	C	A+C	Marine science voyage by Aurora Australis, customs patrol vessels plus occasional tourist and fishing vessels.
	Hobart to Commonwealth Bay	C	A+C	Occasional visits by Aurora Australis, Astrolabe and occasional tourist vessels Charts - Hobart AUS173 and 174 Commonwealth Bay – AUS603
	Davis to Larsemann Hills	C	A+C	Occasional visits by Aurora Australis, Chinese re-supply vessel Xue Long and Russian re-supply vessels. No charts exist of the approaches to the Larsemann Hills
	Davis to Sansom Island	C	B+C	
	Hobart and Fremantle to Southern Ocean	C	A+C	Marine science voyages

** Australian Antarctic Division Submission

Branch corridors and approaches

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed
	Macquarie Island	C		AUS604
	Casey	C		INT9021 (AUS601)
	Davis	C		INT9032(AUS602)
	Mawson	C		AUS600
	Commonwealth Bay	C		AUS603
	Davis to Larsemann Hills	C		No chart coverage except at small scale. Sandjeford Bay to Cape Rundingen – AUS452 scale 1:500,000
	Davis to Sansom Island	C		No chart coverage except at small scale Sandjeford Bay to Cape Rundingen – AUS452 scale 1:500,000

ANNEX G

List of High Priority Surveys

Main corridors

MSR*	Name	Usage category	Survey category	Notes and INT chart coverage. Published and *proposed.*
4	Gerlache strait	A	A + C	20% surveyed. *INT 9156 & 9157*
17	South Shetlands MSR	A	C	*INT 9151*
18	Elephant Island MSR	A+C	C	INT 9150
19	Elephant Island to KGI	A	C	INT 9150, *INT 9151*
20	Deception Is to Brabant Island	A	C	INT *9120,* INT 9155*, 9156, 9157*

Branch corridors and approaches

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and *proposed.*
C	Paulet Island	A	A + C	50% surveyed, remaining area top of UKHO priority. *INT 9112*
D	Brown Bluff and Fridtjof Sound	A	C	INT 9154
M	Melchior Islands and approaches	A+C	C	*INT 9157*
N	Errera Channel	A	C	Includes Cuverville Is, Danco Is and Ronge Is. *INT 9103*
O	Andvord Bay	A	C	Includes Neko Harbour. *INT 9103*
P	Paradise Harbour	A	C	Almirante Station and Waterboat Point. *INT 9104*
Q	Neumayer Channel and Port Lockroy	A	A + C	70% surveyed, north Neumayer Channel to finish INT 9158 & *9104*
Ae	McFarlane Strait	A	A + C	Half Moon Is cat A, Yankee Harbour cat B, rest cat C. INT 9121 & *9112*
Am	Point Wild	A	C	INT 9150
	Mawson	C	C	AUS600
	Commonwealth Bay	C	C	AUS603
	Davis to Larsemann Hills	C	C	No chart coverage except at small scale. Sandjeford Bay to Cape Rundingen – AUS452 scale 1:500,000

Categories

Category	Usage
A	Frequent
B	Regular
C	Infrequent

Category	Current survey status
A	Adequately surveyed
B	Requires re-survey at larger scale or to S-44 standard
C	Has not been systematically surveyed/Unsurveyed

* MSR = Maritime Shipping Route. The figures / letters in this column are shown on the MSR diagram which is at Annex E.

PART IV

ADDITIONAL DOCUMENTS FROM XXIX ATCM

ANNEX H

ADDITIONAL DOCUMENTS

Declaration of Argentina on the Secretariat of the Antarctic Treaty

"2006 - Año de homenaje al Dr. Ramón CARRILLO"

Ministerio de Relaciones Exteriores,
Comercio Internacional y Culto

Declaración de la República Argentina sobre la Secretaría del Tratado Antártico

Los acuerdos contenidos en la Medida 1 (2003), la Decisión 2 (2003), la Decisión 3 (2003) y el Acuerdo de Sede con la República Argentina, dotaron a la Secretaría del Tratado Antártico de personalidad y capacidad en el territorio de la República Argentina así como de un régimen contractual específico para el desempeño de los "miembros del personal", diferente al establecido por la normativa local.

Estos acuerdos cumplen con los criterios de especificidad, funcionalidad y proporcionalidad, lo cual hace que este régimen jurídico sea compatible con los preceptos de orden público argentino.

No existe divergencia alguna entre la normativa argentina y el régimen especial establecido para los "miembros del personal" de la Secretaría del Tratado Antártico.

En materia laboral, la normativa específica de la Secretaría del Tratado Antártico establece un régimen contractual especial de carácter público internacional por lo que la Ley de Contrato de Trabajo de la República Argentina, que rige las relaciones laborales de carácter privado, no se aplica a las relaciones contractuales con los miembros del personal de la Secretaría. Excepcionalmente, en virtud de lo establecido en la regulación 11 del Estatuto del Personal y el artículo 4.1. del Acuerdo de Sede, la normativa argentina (no necesariamente laboral) resulta aplicable a la contratación del personal temporario.

Por su parte, el Sistema Integrado de Jubilaciones y Pensiones para la República Argentina señala que el dependiente de organismos internacionales que preste servicios en la República no estará sometido a ese régimen, si ello hubiese sido establecido en un acuerdo internacional vigente con la Argentina. No obstante, el Sistema Integrado de Jubilaciones y Pensiones argentino será aplicable:
- si el contratado y el empleador manifestaren su voluntad expresa de someterse a él; o
- si el contratado hiciere su propio aporte y también la contribución correspondiente al empleador.

Buenos Aires, 31 de mayo de 2006.

The SCAR Lecture

Dr Valérie Masson-Delmotte, from the Laboratoire de Modélisation du Climat et de l'Environnement, Gif-sur-Yvette, France gave the SCAR Lecture on "Climate Change: an Antarctic Perspective". The text of her talk and copies of the slides were provided as ATCM XXIX IP 76. The PowerPoint slides are available separately on the SCAR web site, at *www.scar.org/communications/*.

Dr Masson-Delmotte explained that ice cores provide unique climate archives containing information on past climate and environmental changes at local, regional and global scales. The isotopic composition of the water trapped as ice allows us to estimate the past temperature of the Antarctic region. The chemical composition of the ice also includes information on dust and aerosols transported by the atmosphere, which help us to understand the extent of droughts and volcanic activity on surrounding continents. Finally, air bubbles trapped in the ice enable us to determine the composition and abundance of greenhouse gases in the atmosphere through time. Comparing the data from the present with those from the past enables us to determine the impact of human activities on the composition of the atmosphere. Comparison with the past record, and knowledge of the way in which the Earth receives radiation over periods of thousands of years during its orbit around the sun, suggests that the Earth today is in a long "interglacial", which should last a further 30,000 years before the descent into a new ice age. The data from air bubbles trapped in the ice show that the present levels of the greenhouse gases methane and CO_2 are considerably higher than anything experienced in the atmosphere of the last 650,000 years. These increases are entirely due to human activities (intensive agriculture and massive use of fossil fuels). Temperature is also increasing. The rate of increase in temperature over the past 100 years has taken place 25 times faster than any natural changes over the past 650,000 years. This may well be prejudicial to the ability of ecosystems to respond to change. Most climate scientists consider that the continued addition of greenhouse gases to the atmosphere will cause the climate to warm further. We can use state-of-the-art climate models to forecast future change based on projected increases in greenhouses gases. These calculations suggest that future climate change in response to increased anthropogenic greenhouse gases is likely to be stronger in Antarctica than across the globe.

So that we can identify the speed, nature, extent and timing of climate change with unprecedented accuracy, and thereby improve inputs to climate models, more ice cores are needed from as yet unsampled regions in Antarctica, and from ice cores reaching back before one million years ago, which requires further ultra-deep drilling.

ANNEX I

EDINBURGH ANTARCTIC DECLARATION ON THE INTERNATIONAL POLAR YEAR 2007-2008

Edinburgh Antarctic Declaration on the International Polar Year 2007-2008

We – the Antarctic Treaty Parties – are meeting in Edinburgh, Scotland from 12 to 23 June 2006 for the XXIXth Antarctic Treaty Consultative Meeting. Our discussions of the international management of Antarctica are this year enhanced by a full day's consideration of the International Polar Year 2007-2008 and its importance for our Antarctic future.

This International Polar Year builds on the historic achievements of the three previous initiatives which took place in 1882-83, 1932-33 and 1957-58. It is a joint initiative of the World Meteorological Organisation and the International Council for Science, and its aim is to provide better observation and understanding of the Earth's polar regions, and to focus the world's attention on their importance. Fifty years ago, the international scientific and logistical cooperation of the International Geophysical Year paved the way for the successful negotiation of the Antarctic Treaty. This Treaty has stood the test of time and has secured Antarctica as a continent of peace and science ever since. As scientists from over 60 countries now embark on the final planning stages for this intensive burst of activity focusing on the polar regions, we, the Antarctic Treaty Parties, express our support for a successful International Polar Year. We believe that the scientific research undertaken during the International Polar Year will increase knowledge of the Antarctic and will yield a better understanding of the major terrestrial, ocean and atmospheric systems that control the planet. The polar regions are sensitive barometers of climate change, and we value their biodiversity. Their health is vital to the well-being of the earth's systems and its inhabitants.

We, the Antarctic Treaty Parties, commit ourselves to full support for the scientific endeavours of those engaged in International Polar Year projects and logistics. In particular, we will:

- give political support to the International Polar Year, by championing its aims, both within our own countries and internationally; and
- provide as much financial support as possible for International Polar Year programme projects.

We support the objective of delivering a lasting legacy from the International Polar Year. In particular, we would welcome work by the World Meteorological Organisation and the International Council for Science to synthesise the results from the International Polar Year and to compile a report for the Secretary-General of the United Nations on its key findings. We believe such a report would be of value not only to the Antarctic Treaty Consultative Meeting but also to the Arctic Council and the global community more widely. In addition, we, the Antarctic Treaty Parties, intend to promote outreach from the International Polar Year, not least through distribution of educational material to institutions and the general public.

We will continue to uphold and to further the principles of the Antarctic Treaty. We will also champion the global importance of the polar regions in international forums.

This will include:

- analysing and using scientific data and information collected from the polar regions during the International Polar Year, which could contribute to future assessments by the Intergovernmental Panel on Climate Change; and supporting efforts to tackle climate change;
- increasing international collaboration and coordination of scientific studies within Antarctica, including through the Scientific Committee on Antarctic Research, so as to maximise expertise in the study of the continent and its surrounding waters;
- collaborating more closely with the Arctic Council, and promoting cooperation between scientists for the benefit of research in the Antarctic and the Arctic;
- strengthening the scientific and logistical cooperation which underpins international project work in Antarctica;
- explaining the unique environment of Antarctica, striving always to protect it, and minimising environmental impacts;
- enhancing cooperation between all the components of the Antarctic Treaty System, and regularly considering ways to improve its effectiveness; and
- urging more States to accede to the highly successful Antarctic Treaty and its Environmental Protocol.

Antarctic Treaty Consultative Meeting XXIX 19 June 2006

ANNEX J

MESSAGE FROM ATCM XXIX TO STATIONS IN THE ANTARCTIC

Message from ATCM XXIX to Stations in the Antarctic

The Twenty-ninth Antarctic Consultative Meeting (ATCM XXIX) is taking place in Edinburgh, Scotland, from 12 to 23 June 2006, hosted by the United Kingdom Government.

Her Royal Highness, Princess Anne, delivered the opening speech, in which she praised the Antarctic Treaty as a model for international dialogue and collaboration. She stressed the importance of preserving the heritage of Antarctic exploration, and highlighted the work of the United Kingdom and New Zealand Antarctic Heritage Trusts.

On the eve of the International Polar Year (IPY), starting in March 2007, the ATCM held a special IPY Day. The Meeting issued the *Edinburgh Antarctic Declaration on the International Polar Year 2007-2008*. In a session chaired by Professor Chris Rapley, Director of the British Antarctic Survey, talks were given by Dr David Carlson, Director of the IPY International Programme Office, as well as by Dr Cecilie Mauritzen of Norway (Ocean Observing Systems at Polar Latitudes), Dr Robert Bindschadler of the United States (Ice is Ice, Right?) and Dr Jon Watkins of the United Kingdom (Marine Ecosystems in the Southern Ocean). Dmitry Chumakov, Executive Secretary Arctic Council, gave an overview of the Arctic Council's approach to the IPY. Dr Bob Corell spoke on the Arctic Climate Impact Assessment. Each of the speakers emphasised the importance of the collaborative interpolar work to be done under the auspices of IPY.

The Committee for Environmental Protection (CEP) delivered a comprehensive report covering many important environmental issues, including the introduction of invasive non-native species, site guidelines for tourist visits, and the strategic future of the CEP. Recognition was paid to Dr Tony Press (Australia), who has guided the Committee through the last four years. Dr Neil Gilbert (New Zealand) was unanimously elected as the new Chairman of the CEP.

There are a large number of activities associated with the Meeting. On 16 June, Dr Valérie Masson-Delmotte gave the SCAR Lecture 2006, entitled "Climate Change: an Antarctic Perspective", which was very well received. In addition, we have had the first ever display of British Antarctic art, ranging from 1773 through to 2006. And we have been able to visit the two polar ships, *HMS Endurance* and the British Antarctic Survey's *RRS James Clark Ross*. There was also a successful public lecture series: Professor Lloyd Peck on life in the Antarctic; Dr David Munro on the Scottish contribution to the Antarctic; and Alistair Fothergill on the making of BBC TV's *Life in the Freezer*.

From the capital of Scotland, on Midwinter's Day (Southern Hemisphere), which is also the first World Hydrology Day, the Delegations participating in the Twenty-ninth Antarctic Treaty Consultative Meeting send their best wishes to all who are wintering in the Antarctic. We salute your efforts on behalf of peace and science, efforts which serve the principles of the Antarctic Treaty.

Sir Michael Wood, KCMG
Chairman of ATCM XXIX - 21 June 2006

ANNEX K

PRELIMINARY AGENDA OF ATCM XXX (NEW DELHI, 30 APRIL – 11 MAY 2007)

Preliminary Agenda of ATCM XXX (New Delhi, 30 April – 11 May 2007)

1. Opening of the Meeting
2. Election of Officers and creation of Working Groups
3. Adoption of the Agenda and allocation of items
4. Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts
5. Operation of the Antarctic Treaty System: General matters
6. Operation of the Antarctic Treaty System: Review of the Secretariat's Situation
7. Report of the Committee for Environmental Protection
8. Liability: Implementation of Decision 1 (2005)
9. Safety and Operations in Antarctica
10. The International Polar Year 2007-2008
11. Tourism and Non-Governmental Activities in the Antarctic Treaty Area
12. Inspections under the Antarctic Treaty and the Environment Protocol
13. Science Issues, particularly scientific co-operation and facilitation
14. Operational issues
15. Education issues
16. Exchange of Information
17. Biological Prospecting in Antarctica
18. Preparation of the XXXI Meeting
19. Any other business
20. Adoption of the Final Report

ANNEX L

LIST OF DOCUMENTS

Working Papers

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
WP - 1	Report of the CEP Intersessional Contact Group on Site Guidelines for Visitors to Antarctica	X	X	X	X	United Kingdom	CEP 7	Barrientos Island (Aitcho Island) Cuverville Island Jougla Point Penguin Island Hannah Point Neko Harbour Paulet Island Petermann Island Pleneau Island Turret Point Yankee Harbour
WP - 2	Policy Issues Arising from On-Site Review of Guidelines for Visitor Sites in the Antarctic Peninsula	X	X	X	X	United Kingdom Argentina Australia Norway United States	ATCM 12 CEP 7	
WP - 3	Wildlife Awareness Information for Aircraft Operations in Antarctica	X	X	X	X	United Kingdom	CEP 8	
WP - 4	Marine Protected Areas (MPAs) – Tools for Protection and Management	X	X	X	X	United Kingdom	CEP 7	
WP - 5 - rev.1	Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area	X	X	X	X	United Kingdom	CEP 8 CEP 13	
WP - 6	Extending the use of the Automatic Identification System (AIS) to Antarctic operations safety	X	X	X	X	Uruguay	ATCM 15	
WP - 7	The work of CCAMLR on Marine Protected Areas	X	X	X	X	CCAMLR	CEP 7	Report of the CCAMLR Workshop on Marine Protected Areas
WP - 8	Management Plan for the Larsemann Hills Antarctic Specially Managed Area	X	X	X	X	Australia China Romania Russian Federation	CEP 7	
WP - 9	Revision of Management Plan for Antarctic Specially Protected Area No. 136 - Clark Peninsula, Budd Coast, Wilkes Land	X	X	X	X	Australia	CEP 7	ASPA 136 - Clark Peninsula

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
WP - 10 - rev.1	Draft Antarctic Specially Protected Area (ASPA) Management Plan for Hawker Island, Vestfold Hills, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica	X	X	X	X	Australia	CEP 7	M1 (2006) ASPA 167 Hawker Island
WP - 11	Committee for Environmental Protection (CEP) Handbook	X	X	X	X	Australia	CEP 4	CEP Handbook
WP - 12	Antarctic Protected Areas System: Proposal for a New Protected Area at Edmonson Point, Wood Bay, Ross Sea	X	X	X	X	Italy	CEP 7	M1 (2006) ASPA 165 Edmonson Point Map 1 M1 (2006) ASPA 165 Edmonson Point Map 2 M1 (2006) ASPA 165 Edmonson Point Map 3 M1 (2006) ASPA 165 Edmonson Point Map 4 M1 (2006) ASPA 165 Edmonson Point
WP - 13	Non-native Species in the Antarctic. Report of a Workshop	X	X	X	X	New Zealand	CEP 8	
WP - 14	CCAMLR in the Antarctic Treaty System	X	X	X	X	New Zealand	ATCM 5	
WP - 15 - rev.1	Regulation of Land-Based Infrastructure to Support Tourism in Antarctica	X	X	X	X	New Zealand Australia	ATCM 12	
WP - 16	Environmental Monitoring and Reporting. Report of the Intersessional Contact Group	X	X	X	X	France	CEP 9	
WP - 17	Contingency Planning and Emergency Response	X	X	X	X	France	ATCM 9 CEP 11	
WP - 18	Establishment of “areas of special tourist interest”	X	X	X	X	France	ATCM 12 CEP 7	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
WP - 19	Proposed registration of the Landing Rock on the list of historical sites and monuments	X	X	X	X	France	CEP 7	I. Carte de l'Astrolabe et de la Zélée II. Extrait de la carte IGN 1/1000 000 de Terre Adélie III. Iles Dumoulin par Dubouzet IV. Carte des trajets de Dumont d'Urville Va. Les Iles Dumoulin et le Rocher du Débarquement dans le Pilote de Terre Adélie Vb: Vue du Rocher du Débarquement dans le Pilote de Terre Adélie (quadrant 80°). Vc. Deux vues du Rocher du Débarquement (du N et du SO). VI. Photo 1 du Rocher du Débarquement VII. Photo 2 du Rocher du Débarquement VIIIa. La prise de possession de Terre Adélie (gravure 1) VIIIb. La prise de possession Terre Adélie le 21 janvier 1840 (gravure 2)
WP - 20	Establishment of a New Indian Research Base in the Larsemann Hills, East Antarctica	X	X	X	X	India	CEP 15	
WP - 21 - rev.1	Proposal of classification as specially protected area n° 46 Port-Martin (Terre-Adelie)	X	X	X	X	France	CEP 7	M1 (2006) ASPA 166 Port Martin Annex A M1 (2006) ASPA 166 Port Martin Annex B M1 (2006) ASPA 166 Port Martin Annex C M1 (2006) ASPA 166 Port Martin
WP - 22	"Possibilities for environmental management of Fildes Peninsula and Ardley Island". Proposal to establish an intersessional contact group	X	X	X	X	Brazil China Germany Korea, Republic Russian Federation	CEP 7	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
WP - 23	Proposed Improvements to Measures Designed to Prevent Environmental Damage in Antarctica	X	X	X	X	Russian Federation	CEP 7	
WP - 24	Revised Management Plan for Antarctic Specially Protected Area 127 Haswell Island (Haswell Island and Adjacent Emperor Penguin Rookery on Fast Ice)	X	X	X	X	Russian Federation	CEP 7	Antarctic Specially Protected Area 127 HASWELL ISLAND (rev.1)
WP - 25	Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica. Draft Comprehensive Environmental Evaluation (CEE)	X	X	X	X	Belgium	CEP 6a	
WP - 26	Review of the Admiralty Bay Antarctic Specially Managed Area Management Plan (ASMA No 1)	X	X	X	X	Brazil Peru Poland United States	CEP 7	M2 (2006) ASMA 1 Fig. 1 M2 (2006) ASMA 1 Fig. 2 M2 (2006) ASMA 1 Fig. 3 M2 (2006) ASMA 1 Fig. 4 M2 (2006) ASMA 1 Fig. 5A M2 (2006) ASMA 1 Fig. 5B M2 (2006) ASMA 1 Fig. 5C M2 (2006) ASMA 1 Fig. 5D M2 (2006) ASMA 1 Fig. 6
WP - 26 - rev.1	Review of the Admiralty Bay Antarctic Specially Managed Area Management Plan (ASMA No 1)	X	X	X	X	Brazil Ecuador Peru Poland United States	CEP 7	M2 (2006) ASMA 1 Fig. 1 M2 (2006) ASMA 1 Fig. 2 M2 (2006) ASMA 1 Fig. 3 M2 (2006) ASMA 1 Fig. 4 M2 (2006) ASMA 1 Fig. 5A M2 (2006) ASMA 1 Fig. 5B M2 (2006) ASMA 1 Fig. 5C M2 (2006) ASMA 1 Fig. 5D M2 (2006) ASMA 1 Fig. 6 M2 (2006) ASMA 1 Admiralty Bay
WP - 27	withdrawn	X	-	-	-			
WP - 28	Cooperation between the CEP and SC-CAMLR: a synthesis and opportunities for the future	X	X	X	X	Argentina	CEP 14	
WP - 29	Revision of Management Plan for ASPA 134 Cierva Point and offshore islands, Danco Coast, Antarctic Peninsula	X	X	X	X	Argentina	CEP 7	Management Plan for ASPA 134

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
WP - 30	Revision of Management Plan for Antarctic Specially Protected Area No. 150 Ardley Island	X	X	X	X	Chile	CEP 7	
WP - 31	Review of Antarctic Specially Protected Area (ASPA) Nos. 116 and 131	X	X	X	X	New Zealand	CEP 7	ASPA 116 Management Plan ASPA 131 Management Plan
WP - 32	Systematic Environmental Protection In Antarctica – refining and reviewing the "proof of concept" Environmental Domains of Antarctica classification for a systematic environmental geographic framework	X	X	X	X	New Zealand	CEP 7	
WP - 33	A Proposed Checklist for Inspecting Protected Areas in Antarctica	X	X	X	X	New Zealand United Kingdom United States	CEP 10	
WP - 34	Ross Sea Protected Area Inspections 2006	X	X	X	X	New Zealand United Kingdom United States	CEP 10	
WP - 35	Draft Elements for the Edinburgh Declaration. International Polar Year 2007-2009	X	X	X	X	Chile	ATCM 11	Historia de la Cooperación Científica Polar (Spanish)
WP - 36	The Replacement of Fuel Tanks at Vernadsky Station	X	X	X	X	Ukraine	CEP 11	
WP - 37	Biodiversity in the Antarctic	X	X	X	X	SCAR	ATCM 14 CEP 8	
WP - 38	Proposal to List Southern Giant Petrel as a Specially Protected Species under Annex II	X	X	X	X	SCAR	ATCM 14 ATCM 15 CEP 8	
WP - 39	Proposal to De-list Antarctic Fur Seals as Specially Protected Species	X	X	X	X	SCAR	ATCM 14 ATCM 15 CEP 8	
WP - 40	Site Guidelines for Goudier Island, Port Lockroy	X	X	X	X	United Kingdom	CEP 7	Site Guidelines for Goudier Island, Port Lockroy
WP - 41	SCAR Report on Marine Acoustics and the Southern Ocean	X	X	X	X	SCAR	CEP 6b CEP 8	
WP - 42	Antarctica's Future Environmental Challenges. A summary report of the CEP Workshop	X	X	X	X	United Kingdom Australia France	CEP 3	
WP - 43	The Enquiry Procedure of Article 18	X	X	X	X	Chile	ATCM 5	
WP - 44	Review of Annex II of the Environmental Protocol	X	X	X	X	United Kingdom	ATCM 7	Review of Annex II of the Environmental Protocol

Information Papers

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 1	Report on the Implementation of the Protocol on Environmental Protection as required by Article 17 of the Protocol	X	-	-	-	United Kingdom	CEP 15	
IP - 2	Wildlife Awareness Manual for the Antarctic Peninsula, South Shetland Islands and South Orkney Islands	X	-	-	-	United Kingdom	CEP 8	
IP - 3	Rationale for the development of Marine Protected Areas (MPAs) in Antarctica	X	X	X	X	United Kingdom	CEP 7	
IP - 4	Annual Report submitted by France on the Protocol on Environmental Protection to the Antarctic Treaty as required by Article 17 of the Protocol. 2006	X	X	-	X	France	CEP 15	
IP - 5	Ecuador fortalece la ciencia y los asuntos antárticos	-	-	-	X	Ecuador	ATCM 14	
IP - 6	Approaches to Marine Bioregionalisation for the Southern Ocean	X	X	X	X	United Kingdom	CEP 7	
IP - 7	Report by the CCAMLR Observer at theTwenty-Ninth Antarctic Treaty Consultative Meeting	X	-	-	-	CCAMLR	ATCM 4	
IP - 8 - rev.1	ACAP. Report by the Head of the Australian Delegation in his capacity as Representative of the depositary government for the Agreement on the Conservation of Albatrosses and Petrels to the Twenty-ninth Antarctic Treaty Consultative Meeting	X	X	X	X	Australia	ATCM 4	
IP - 9	CCAMLR. Report by the Head of the Australian Delegation in his capacity as representative of the depositary Government for the CCAMLR to the Twenty-Ninth Antarctic Treaty Consultative Meeting	X	X	X	X	Australia	ATCM 4	
IP - 10	Science Supported by Antarctica New Zealand 2005/2006	X	-	-	-	New Zealand	ATCM 14	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 11	An Update on the Antarctic Visitor Site Assessment Scheme: VISTA	X	-	-	-	New Zealand	CEP 9	
IP - 12	Progress during 2005-2006 in implementing the International Polar Year 2007–2008	X	-	-	-	IPY-IPO	ATCM 11	
IP - 13	In search of a legal regime for bioprospecting in Antarctica	X	X	X	X	France	ATCM 18	
IP - 14	Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	China	CEP 15	
IP - 15	Informe anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	-	-	-	X	Spain	CEP 15	
IP - 16	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	Belgium	CEP 15	
IP - 17	Annual Report Pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	South Africa	CEP 15	
IP - 18	Update on the Comprehensive Environmental Evaluation (CEE) for the Proposed Construction and Operation of Halley VI Research Station, Brunt Ice Shelf, Caird Coast, Antarctica	X	-	-	-	United Kingdom	CEP 6a	
IP - 19	Deception Island Antarctic Specially Managed Area (ASMA) Management Group	X	-	-	-	Argentina Chile Norway Spain United Kingdom United States	CEP 7	
IP - 20	Antarctic Polarview programme to provide access to satellite observations for improved sea ice navigation	X	-	-	-	United Kingdom	ATCM 9	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 21	Clean-up programme at Indian Scientific Base 'Maitri', Antarctica during Season: 2004-2005	X	-	-	-	India	CEP 12	
IP - 22	Construction and operation of the new Belgian Research Station in Dronning Maud Land, Antarctica. Draft Comprehensive Environmental Evaluation (CEE)	X	-	-	-	Belgium	CEP 6a	Complete text. Draft Comprehensive Environmental Evaluation (CEE)
IP - 23	Scientific activities at Indian station "Maitri" during 2005 -2006	X	-	-	-	India	ATCM 14	
IP - 24	The Census of Antarctic Marine Life (CAML) - a SCAR-supported field activity for IPY 2007/08	X	-	-	-	Australia	ATCM 11	
IP - 25	Australia's key scientific activities during the 2005/06 Antarctic Season	X	-	-	-	Australia	ATCM 14	
IP - 26	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	Italy	CEP 15	
IP - 27	Antarctic Site Inventory: 1994-2006	X	-	-	-	United States	ATCM 12 CEP 7	
IP - 28	Report by the International Hydrographic Organization (IHO) on "Cooperation in Hydrographic Surveying and Charting of Antarctic Waters"	X	X	-	X	IHO	ATCM 4	
IP - 29	India's initiatives for utilizing non-conventional energy resources at Maitri - a status report	X	-	-	-	India	ATCM 15	
IP - 30	The Argentine Antarctic Program in the International Polar Year	X	-	-	X	Argentina	ATCM 11	
IP - 31	Tourism development in the Antarctic Peninsula: a regional approach	X	-	-	X	Argentina	ATCM 12 CEP 7	
IP - 32	Chinese Antarctic Environmental Report (2005-2006)	X	-	-	-	China	CEP 15	
IP - 33	Chinese Grove Mountains Integrated Expedition 2005/2006	X	-	-	-	China	ATCM 14	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 34	Report of the Decommissioning of the Emergency Base (E Base) in Antarctica	X	-	-	-	South Africa	ATCM 15 CEP 11	Report of the Decommissioning of Emergency Base (E Base) in Antarctica
IP - 35	Law- Racovita Base, an example of cooperation in Antarctica	X	-	-	-	Romania	ATCM 14	
IP - 36	Annual report persuant to the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	Romania	CEP 15	
IP - 37	Romanian Antarctic medical activities in Law-Racovita Base in cooperation with China	X	-	-	-	Romania	ATCM 14	
IP - 38	Results of Romanian Antarctic Scientific Research 2005-2006	X	-	-	-	Romania	ATCM 14	
IP - 39	Antarctic Whales and Antarctic Tourism	X	-	-	-	IAATO	ATCM 11 ATCM 12 ATCM 14	
IP - 40 - rev.2	CCAS. Report submitted to Antarctic Treaty Consultative Meeting XXIX by the Depositary Government for the Convention for the Conservation of Antarctic Seals in accordance with Recommendation XIII-2, Paragraph 2(d)	X	-	-	-	United Kingdom	ATCM 4	
IP - 41	Antarctic Education Website for Schools	X	-	-	-	United Kingdom	ATCM 16	
IP - 42	Initial Environmental Evaluation (IEE) : Construction and operation of Enigma Runway for light aircrafts at the Mario Zucchelli Station (Terra Nova Bay, Ross Sea, Antarctica)	X	-	-	-	Italy	CEP 6b	
IP - 43	Start of the Antarctic Discussion Forum of Competent Authorities (DFCA)	X	-	-	-	Germany Netherlands	ATCM 17 CEP 15	
IP - 44	Principles underpinning Australia's approach to Antarctic quarantine management	X	-	-	-	Australia	CEP 8	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 45	Fuel spill management in Antarctica: recent advances in first response and remediation	X	-	-	-	Australia	CEP 12	
IP – 46	"Non-native Species in the Antarctic" A Workshop	X	-	-	-	New Zealand	CEP 8	
IP - 47	Conference on Climate Change and Governance, Wellington, March 2006	X	-	-	-	New Zealand	ATCM 11 ATCM 14 ATCM 16 CEP 9	Speakers' Abstracts
IP - 48	Annual report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	Ukraine	CEP 15	
IP - 49	Ukrainian Antarctic Research for 2005-2006 summer season	X	-	-	-	Ukraine	ATCM 14	
IP - 50	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente. Periodo 2005 - 2006	-	-	-	X	Uruguay	CEP 15	
IP - 51	Relevamiento de Desechos Marinos en la Costa Septentrional de la Base Científica Antártica Artigas (BCAA) en la Isla Rey Jorge / 25 de Mayo. Contribución a la Efectivización del Anexo IV "Prevención de la Contaminación Marina" del Protocolo.	-	-	-	X	Uruguay	CEP 13	
IP - 52	Actividad artística en la Base Científica Antártica Artigas (BCAA)	-	-	-	X	Uruguay	ATCM 16	
IP - 53	2º Simposio en Montevideo sobre Actividades e Investigación Científica en la Antártida	-	-	-	X	Uruguay	ATCM 16	
IP - 54	Report of the Depositary Government of the Antarctic Treaty and its Protocol (USA) in accordance with Recommendation XIII-2	X	-	-	-	United States	ATCM 4	Status Treaty Status Protocol Status Measures

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 55	Update on the Draft Management Plan for ASMA ? Amundsen-Scott South Pole Station, South Pole.	X	-	-	-	United States	CEP 7	
IP - 56	Student Learning Expeditions to Antarctica - A progress report	X	-	-	-	Canada	ATCM 16	
IP - 57	Antarctic non-native species ; what can we learn from the global situation?	X	-	-	-	IUCN	CEP 8	
IP - 58	Report of the CEP Observer to the twenty-fourth meeting of the Scientific Committee to CCAMLR, 24 to 28 October 2005	X	-	-	-	Australia	CEP 14	
IP - 59	Marine Protected Areas in the Southern Ocean: A focus on CCAMLR	X	-	-	-	IUCN	CEP 7	
IP - 60	Wastewater Treatment in Antarctica: Challenges and Process Improvements	X	-	-	-	United States	CEP 12	
IP - 61	An Update on Recent Noise Pollution Issues	X	-	-	-	ASOC	ATCM 14 CEP 6b CEP 8	
IP - 62	The Antarctic and Climate Change	X	-	-	-	ASOC	ATCM 10 ATCM 16 CEP 3 CEP 9	
IP - 63	Beyond Direct Impacts of Multi-Year Maintained Ice Routes Case Study: McMurdo-South Pole Surface Re-Supply Traverse	X	-	-	-	ASOC	ATCM 12 CEP 3 CEP 6b	
IP - 64	A Glimpse Into The Environmental Legacy Of The International Polar Year 2007-2008	X	-	-	-	ASOC	ATCM 11 CEP 5	
IP - 65	Managing Antarctic Tourism: A Critical Review Of Site-Specific Guidelines	X	-	-	-	ASOC	ATCM 12 CEP 6b CEP 7	
IP - 66	Brief Update on the Antarctic Peninsula Landing Site Visits and Site Guidelines	X	-	-	-	IAATO	ATCM 12 CEP 7	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 67	Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP): Report to ATCM XXIX & CEP IX from the ACAP Interim Secretariat hosted by the Australian Government	X	-	-	-	Australia	ATCM 4 CEP 14	
IP - 68	Russian Studies of the subglacial Lake Vostok in the season of 2005-2006 and Work Plans for the season of 2006-2007	X	-	X	-	Russian Federation	ATCM 14 CEP 6b	
IP - 69	Drilling of Additional 75 m in deep Borehole 5G-1 at Vostok Station. Initial Environmental Evaluation	X	-	X	-	Russian Federation	CEP 6b	
IP - 70	Education Programs of the Russian Antarctic Expedition	X	-	X	-	Russian Federation	ATCM 16	
IP - 71	Measures for ensuring safety of life activity at the inland Antarctic Stations. Experience of airdropping of cargo to the Russian Vostok Station	X	-	X	-	Russian Federation	ATCM 9	
IP - 72	Monitoring of pathogenic micro-biota in the Antarctic	X	-	X	-	Russian Federation	ATCM 9	
IP - 73	Russian Antarctic Studies under the Subprogram “Study and Research of the Antarctic” in 2005	X	-	X	-	Russian Federation	ATCM 14	
IP - 74	Research Program of Participation of the Russian Federation in holding the International Polar Year (2007-2008)	X	-	X	-	Russian Federation	ATCM 11	
IP - 75	Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2005/2006	X	-	-	-	New Zealand	CEP 15	
IP - 76	Climate Change: an Antarctic Perspective	X	-	-	-	SCAR	ATCM 14	
IP - 77	Monitoring the remediation of the Thala Valley waste disposal site at Casey station	X	-	-	-	Australia	CEP 12	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 78	McMurdo Dry Valleys Antarctic Specially Managed Area (ASMA No. 2) Management Group Report	X	-	-	-	Italy New Zealand United States	CEP 7	
IP - 79	SCAR Report to XXIX ATCM	X	-	-	-	SCAR	ATCM 4	
IP - 80	Methodologies for Assessing Cumulative Impacts: A Progress Report	X	-	-	-	New Zealand	CEP 6b	
IP - 81	Initial Environmental Evaluation. Law-Racovita Base	X	-	-	-	Romania	CEP 6b	
IP - 82	The use of Anti-fouling Biocide Paints by National Antarctic Program Vessels	X	-	-	-	COMNAP	CEP 8	
IP - 83	The Use of Ballast Water in Antarctica	X	-	-	-	COMNAP	CEP 8	
IP - 84	Marine Acoustic Systems used by National Antarctic Program Vessels	X	-	-	-	COMNAP	CEP 8	
IP - 85	Land-Based Tourism and the Development of Land-based Tourism Infrastructure in Antarctica: An IAATO Perspective	X	-	-	-	IAATO	ATCM 12	
IP - 86	IAATO Overview of Antarctic Tourism 2005-2006 Antarctic Season	X	-	-	-	IAATO	ATCM 12	
IP - 87	SCAR's Involvement in the International Polar Year (2007-2009)	X	-	-	-	SCAR	ATCM 11	
IP - 88	Practical Biological Indicators of Human Impacts in Antarctica	X	-	-	-	COMNAP SCAR	CEP 9	
IP - 89	Plans for an Antarctic Climate Assessment – Trends and Impacts	X	-	-	-	SCAR	ATCM 10 ATCM 14 ATCM 16 CEP 3 CEP 9	
IP - 90	Report of the International Association of Antarctica Tour Operators 2005-2006	X	-	-	-	IAATO	ATCM 4 ATCM 12	
IP - 91	IAATO Vessel Emergency Contingency Plan. An Update	X	-	-	-	IAATO	ATCM 12 CEP 11	
IP - 92	Antarctic Protected Area System: Revised List of Historic Sites and Monuments. Measure 3 (2003). Draft Guidelines for its Application	X	-	-	-	Chile	CEP 7	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 93	The SCAR Marine Biodiversity Information Network (*www.SCARMarBIN.be*) : A SCAR core IPY project	X	-	-	-	Belgium	CEP 9	
IP - 94	Station Sharing in Antarctica	X	-	-	-	ASOC	ATCM 11 ATCM 14 CEP 6b CEP 9	
IP - 95	An Update on the Antarctic Audit and Accreditation Scheme	X	-	-	-	IAATO	ATCM 12	
IP - 96	Collaborations with other Parties in Science and Related Activities during the 2005/2006 Season	X	-	-	-	Korea, Republic	ATCM 14	
IP - 97	Promotion of Public Awareness on Antarctic Scientific and Aesthetic Values and on the Importance of its Preservation	X	-	-	-	Korea, Republic	ATCM 16	
IP - 98	Broadband Calibration of Marine Seismic Sources - A Case Study	X	-	-	-	SCAR	CEP 8	Broadband Calibration of Marine Seismic Sources - A Case Study
IP - 99	The Czech Antarctic Station of Johann Gregor Mendel - from project to realization	X	-	-	-	Czech Republic	ATCM 14 ATCM 15 CEP 6b	The Czech Antarctic Station of Johann Gregor Mendel - from project to realization
IP - 100	Annual Report pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty. Japan 2005/2006 Season	X	-	-	-	Japan	CEP 15	
IP - 101	Selected Highlights of the Japanese Antarctic Research Expedition, 2005-2006	X	-	-	-	Japan	ATCM 9 ATCM 14	
IP - 102	Planned Japanese Activities for IPY 2007-2008 and to Commemorate the 50th Anniversary of JARE	X	-	-	-	Japan	ATCM 11 ATCM 16	
IP - 103	New Icebreaker for the Japanese Antarctic Program	X	-	-	-	Japan	ATCM 9 ATCM 14	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 104 - rev.1	Notes on Bioregionalisation in Antarctica and the Southern Ocean	X	-	-	-	Chile	CEP 7	
IP - 105	Annual Report Pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	X	-	-	-	Korea, Republic	CEP 15	
IP - 106	The UN and the Question of Antarctica	X	-	-	-	Sweden	ATCM 4	Statement by Sweden on the Question of Antarctica Statement by Malaysia on the Question of Antarctica Resolution adopted by the General Assembly on the Question of Antarctica Remarks by Malaysia upon the adoption of Draft Resolution entitled "Question of Antarctica" Report of the Secretary-General on the Question of Antarctica
IP - 107	Report of the Antarctic and Southern Ocean Coalition (ASOC)	X	-	-	-	ASOC	ATCM 4	
IP - 108	Management of Antarctic Krill	X	-	-	-	ASOC	ATCM 14 CEP 3 CEP 9	
IP - 109	Argentine Antarctic Education	X	-	-	X	Argentina	ATCM 16	
IP - 110	Argentine Antarctic Art	X	-	-	X	Argentina	ATCM 16	
IP - 111	Acontecimientos y tareas realizadas por la patrulla de búsqueda y rescate en el continente antártico – año 2005	-	-	-	X	Argentina	ATCM 15	
IP - 112	Argentine activities of bioprospecting and bioremediation in Antarctica	X	-	-	X	Argentina	ATCM 18	

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
IP - 113	Antarctica's Future Environmental Challenges. Report of the CEP Workshop, Edinburgh, United Kingdom, 9–10 June 2006	X	-	-	-	United Kingdom Australia France	CEP 3	
IP - 113 - rev.1	Antarctica's Future Environmental Challenges. Report of the CEP Workshop, Edinburgh, United Kingdom, 9 –10 June 2006	X	-	-	-	United Kingdom Australia France	CEP 3	
IP - 114	COMNAP Report to ATCM XXIX	X	-	-	-	COMNAP	ATCM 4 CEP 14	Appendix 1: Poster Antarctic Operational Indicators Appendix 2: Main Antarctic facilities Appendix 3: Terms of Reference (TORs), Tasks and Officers of COMNAP groups
IP - 115	Clean up of abandoned Cape Hallett Station	X	-	-	-	New Zealand United States	CEP 12	
IP - 116	Recent Trends in the Biological Prospecting	X	-	-	-	UNEP	ATCM 18	
IP - 117	Plan de restauración de la base Gabriel González Videla, bahía Paraíso	-	-	-	X	Chile	CEP 7	
IP - 118	Instalación Monumento Histórico Base Pedro Aguirre Cerda. Isla Decepción	-	-	-	X	Chile	CEP 7	
IP - 119	Report Submitted to the XXIX ATCM by IUCN. The World Conservation Union	X	-	-	-	IUCN	ATCM 4	
IP - 120	Strategic Issues posed by Commercial Tourism in the Antarctic Treaty Area	X	-	-	-	ASOC	ATCM 12	

Secretariat Papers

Number	Title	E	F	R	S	Submitted by	Agenda Items	Attachments
SP - 1 - rev.1	ATCM 29 Agenda and Schedule	X	X	X	X	ATS	ATCM 3	
SP - 2 - rev.1	Documents for ATCM XXIX and CEP IX: Formatting Guidelines	X	X	X	X	ATS	ATCM 5	
SP - 3 - rev.1	Antarctic Treaty Secretariat Report 2005/6	X	X	X	X	ATS	ATCM 6	D1 (2006) Annex 2 Financial Report 2005/6 (rev.1)
SP - 4 - rev.3	Draft Work Programme 2006/7	X	X	X	X	ATS	ATCM 6	
SP - 5	Legal status of the ATCM measures on protected areas	X	X	X	X	ATS	ATCM 5	
SP - 6	Antarctic Treaty Secretariat Financial Report 2004/5 (Revised)	X	X	X	X	ATS	ATCM 6	
SP - 7	Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	X	X	X	X	ATS	CEP 7	
SP - 8	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2005 and March 31st 2006	X	X	X	X	ATS	CEP 6b	
SP - 9	Electronic Information Exchange System	X	X	X	X	ATS	ATCM 17	
SP - 10	Template for Annual Reporting under Article 17 of the Environment Protocol	X	X	X	X	ATS	ATCM 17 CEP 4 CEP 15	
SP - 11 - rev.2	Contributions to the Secretariat 2004/7	X	X	X	X	ATS	ATCM 6	
SP - 11 - rev.3	Contributions to the Secretariat 2004/7	X	X	X	-	ATS	ATCM 6	
SP - 12 - rev.1	Status of the Secretariat Archive of Final Reports	X	X	X	X	ATS	ATCM 6	

ANNEX M

LIST OF PARTICIPANTS

Participants: Consultative Parties

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