Final Report of the Thirty-second Antarctic Treaty Consultative Meeting

ANTARCTIC TREATY
CONSULTATIVE MEETING

Final Report of the Thirty-second Antarctic Treaty Consultative Meeting

Baltimore, United States
6–17 April 2009

Secretariat of the Antarctic Treaty
Buenos Aires
2009

Antarctic Treaty Consultative Meeting (32nd : 2009 : Baltimore)
Final Report of the Thirtieth Antarctic Treaty Consultative Meeting.
Baltimore, United States, 6–17 April 2009.
Buenos Aires : Secretariat of the Antarctic Treaty, 2009.
292 p.

ISBN 978-987-1515-08-0

1. International law – Environmental issues. 2. Antarctic Treaty system.
3. Environmental law – Antarctica. 4. Environmental protection – Antarctica.

DDC 341.762 5

ISBN 978-987-1515-08-0

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Acronyms and Abbreviations

ACAP	Agreement on the Conservation of Albatrosses and Petrels
ASMA	Antarctic Specially Managed Area
ASOC	Antarctic and Southern Ocean Coalition
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	Comittee 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
SCALOP	Standing Committee for Antarctic Logistics and Operations
SCAR	Scientific Committee on Antarctic Research

SC-CCAMLR	Scientific Committee of CCAMLR
SP	Secretariat Paper
SPA	Specially Protected Area
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WG	Working Group
WMO	World Meteorological Organization
WP	Working Paper
WTO	World Tourism Organization

PART I
Final Report

1. Final Report

Final Report of the Thirty-second Antarctic Treaty Consultative Meeting

Baltimore, Maryland, USA, 6–17 April 2009

(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 Baltimore from 6 to 17 April 2009 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, Belarus, Canada, Colombia, the Czech Republic, Denmark, Greece, Monaco, Romania, Switzerland and Venezuela. A delegation from Malaysia was present by invitation of ATCM XXXI to observe the Meeting.

(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 Programs (COMNAP) attended the Meeting.

(4) In accordance with Rule 39 of the Rules of Procedure, Experts from the following international organisations and non-governmental organisations were invited to attend the Meeting: the 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) The Meeting was officially opened at the U.S. Department of State in Washington, D.C., on April 6, 2009. It coincided with an extraordinary joint meeting of the Antarctic Treaty Consultative Parties and the Arctic Council. On behalf of the Host Government, Ambassador Reno Harnish called the joint meeting to order and proposed R. Tucker Scully as Chair of the Antarctic Treaty Consultative Meeting. The proposal was accepted.

(7) The U.S. Secretary of State, the Honorable Hillary Rodham Clinton, addressed the joint meeting, stressing the U.S. Administration's commitment to the Treaty and cooperation in Antarctica. She noted the significance of these meetings: they marked the 32nd ATCM, the 50th anniversary of the signing of the Treaty, the conclusion of the International Polar Year (IPY) and for the first time the inclusion of the Arctic Council. She introduced several US initiatives and announced that, on April 3, 2009, President Obama sent the Annex on Liability to the Environment Protocol to the Antarctic Treaty to the U.S. Senate for its approval for ratification. The full text of Secretary Clinton's remarks can be found in Vol. 2, Part III, section 1.

(8) His Excellency Jonas Gahr Støre, Minister of Foreign Affairs of Norway, addressed the joint meeting in his role as Chairman of the Arctic Council. He noted that Antarctica is a land mass surrounded by oceans, while the Arctic is an ocean surrounded by land masses. Thus, the UN Convention on the Law of the Sea provides a solid foundation for continued development of the international governance framework for the Arctic. He further noted that climate change is the ultimate political challenge of our generation, and

our legacy to future generations. The full text of Minister Støre's remarks can be found in Vol. 2, Part III, section 1.

(9) Dr John P. Holdren, Assistant to the President for Science and Technology and Director, Office of Science and Technology Policy in the Executive Office of the President, spoke on the significance of the IPY and the importance of continuing international cooperation. He reiterated this Administration's commitment to supporting science and using scientific findings to shape policy.

(10) A discussion period followed, during which a number of statements were made by Ministers focusing on the importance of the International Polar Year and polar science priorities. The New Zealand Foreign Minister, Mr Murray McCully led a discussion on International Polar Year accomplishments, which led to interventions by a number of Ministers. The texts of these remarks can be found in Vol. 2, Part III, section 2.

(11) The Uruguayan Foreign Minister, Mr Gonzalo D. Fernández, led a discussion on the future of polar science priorities. A number of Ministers joined in the round table discussion. Prince Albert II attended the meeting representing Monaco, and spoke on the importance of encouraging young scientists to pursue work in polar science. The texts of these remarks can be found in Vol. 2, Part III, section 2.

(12) The Chair welcomed the Ministers attending the joint meeting and the ATCM Representatives and noted that 2009 was the 50th Anniversary of the Antarctic Treaty. He expressed the hope that the Parties would continue to identify and find innovative ways to further the purposes and provisions of the Treaty and other components of the Treaty System. The full text of Mr Scully's remarks can be found in Vol. 2, Part III, section 1. In keeping with past practice, he indicated that opening statements would not necessarily be presented orally but would be appended to the Final Report of the ATCM.

(13) The Joint Session adopted two Declarations, one on the International Polar Year and Polar Science, and a second on the 50th anniversary of the Antarctic Treaty. The text of the Declarations can be found in Part I, section 3, page 159. The Chair spoke on the historic significance of the 50th anniversary of the Antarctic Treaty, and unveiled a replica of a plaque which will commemorate the 50th Anniversary of the Treaty and be located in the National Academies of Science building in Washington, site of key informal negotiations on the Antarctic Treaty in 1958–1959.

Item 2: Election of Officers and Creation of Working Groups

(14) Mr Albert Lluberas, representative of the Oriental Republic of Uruguay (Host Country of ATCM XXXIII) 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 Raymond Arnaudo, head of the Host Country Secretariat, acted as Deputy Secretary.

(15) Four Working Groups were established:

- Working Group on the Fiftieth Anniversary of the Antarctic Treaty;
- Working Group on Legal and Institutional Affairs;
- Working Group on Operational Matters;
- Working Group on Tourism and Non-governmental Activities.

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

- Fiftieth Anniversary Working Group: Mr Tucker Scully of the United States;
- Legal and Institutional Affairs Working Group: Dr Olav Orheim of Norway;
- Operational Matters Working Group: Dr José Retamales of Chile;
- Tourism and Non-governmental Activities Working Group: Mr Evan Bloom of the United States of America.

Item 3:Adoption of the Agenda and Allocation of Items

(17) 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. Operational 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, Including Climate-related Research, Scientific Co-operation and Facilitation
14. Operational Issues
15. Education Issues
16. Exchange of Information
17. Biological Prospecting in Antarctica
18. 50th Anniversary: Looking to the Future of Antarctica
19. Preparation of the 33rd Meeting
20. Any Other Business
21. Adoption of the Final Report

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

- Plenary: Items 1, 2, 3, 4, 7, 19, 20 and 21
- Fiftieth Anniversary Working Group: Item 18
- Legal and Institutional Working Group: Items 5, 6, 8 and 17
- Operational Matters Working Group: Items 9, 10, 12, 13, 14, 15 and 16
- Tourism and Non-governmental Activities Working Group: Item 11

(19) 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.

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

(20) Pursuant to Recommendation XIII-2, the Meeting received reports from: The United States in its capacity as Depositary of the Antarctic Treaty and the Protocol; the United Kingdom in its capacity as Depositary of the Convention for the Conservation of Antarctic Seals (CCAS); Australia in its capacity as Depositary of the Convention on the Conservation of Antarctic

Marine Living Resources (CCAMLR) and Depositary of the Agreement on the Conservation of Albatrosses and Petrels (ACAP); the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); the Council of Managers of National Antarctic Programs (COMNAP); and the Scientific Committee on Antarctic Research (SCAR).

(21) The United States, in its capacity as Depositary Government, reported on the status of the Antarctic Treaty and the Protocol on Environmental Protection to the Antarctic Treaty, noting that Belarus had acceded to the Protocol on July 16, 2008 and that there now are 33 Parties to the Protocol and 47 Parties to the Treaty (see Volume 2, Part III, section 4 for the complete report). The United States urged Parties to take prompt action to approve measures still pending.

(22) The United Kingdom, as Depositary for the Convention on the Conservation of Antarctic Seals, reported that there had been no accessions to the Convention since ATCM XXXI. More than 4,000 seals were reported captured for scientific purposes, and three leopard seals and two Weddell seals were reported accidentally killed during the period 1 March 2007 to 29 February 2008. Parties to the Convention were reminded that the information referenced in paragraph 6 of the Annex to the Convention should be provided to SCAR and the Contracting Parties by 30 June each year (see Volume 2, Part III section 4 for the complete report).

(23) Australia, as the Depositary, reported on the Convention for the Conservation of Antarctic Marine Living Resources, noting that there had been no new accessions to the Convention since ATCM XXXI (Volume 2, Part III, section 4).

(24) Australia, in its capacity as Depositary for the Agreement on the Conservation of Albatrosses and Petrels, reported that two new states had become Parties to the Agreement. Brazil ratified the Agreement on 3 September 2008, and Uruguay acceded on 9 October 2008. Australia also reported that on 2 December 2008 the ACAP Secretariat was formally established following entry into force of the ACAP Headquarters Agreement (Volume 2, Part III, section 4).

(25) The Executive Secretary of the Convention on the Conservation of Antarctic Marine Living Resources introduced the CCAMLR report (Volume 2, Part III, section 4). He noted that a performance review of the Commission and Scientific Committee had been carried out in 2008, that the report of the review was available on the CCAMLR web site (*http://www.ccamlr.org/pu/E/Prfrm%20Rvw%20Rpt%20Feb09.pdf*), and that efforts were underway to implement the recommendations for improving operation of the

Commission and Committee. He called attention to the recently completed CEP/SC-CCAMLR Workshop (WP 55), and the continuing collaboration of the two committees. He also noted that the CCAMLR Commission had closed seven areas to fishing in the Convention Area because of their vulnerability to bottom fishing and that eleven areas were being considered for eventual designation as marine protected areas in accordance with Article IX of the Convention.

(26) Following the report by the CCAMLR Executive Secretary, the ASOC observer expressed disappointment that the CCAMLR Scientific Committee and Commission had not, at their Meetings in 2008, endorsed the recommendation of the Working Group on Ecosystem Monitoring and Management that 100% observer coverage be required on all vessels fishing for Antarctic krill in the Convention Area. He expressed concern that advice based on the best available science had been rejected.

(27) The United States expressed its appreciation of the CCAMLR report and indicated that it too was concerned about the lack of consensus concerning the proposal to achieve 100% observer coverage on vessels fishing for krill in the Convention Area.

(28) The United Kingdom, Sweden, Chile, and Argentina also welcomed the CCAMLR report, and called attention to the importance of the Treaty Parties and CEP continuing to work cooperatively with the CCAMLR Commission and Scientific Committee on issues of mutual concern. Many delegations indicated their appreciation of the many years of service of the outgoing CCAMLR Executive Secretary, Dr Denzil Miller.

(29) The President of the Scientific Committee on Antarctic Research introduced the SCAR Report (Volume 2, Part III, section 4), and several papers bearing on other agenda items. He noted that SCAR now has 38 members and provides the Parties with high quality scientific advice on a wide range of issues. In July 2008, SCAR organised with the International Arctic Science Committee the first IPY science conference in St. Petersburg, Russia, the largest polar science conference ever, with 1150 attendees. SCAR is now working with ICSU to develop a Polar Information Commons, a bipolar approach to data management. SCAR has attempted to respond to requests from the ATCM and the CEP in a comprehensive and timely manner. For consideration at this year's ATCM and meeting of the CEP, SCAR provided one Working Paper and nine Information Papers. Work on some requests by the CEP had to be deferred to 2010 due to the short time since ATCM XXXI.

(30) The Meeting welcomed the introductions to the referenced SCAR papers and expressed appreciation for SCAR's continuing efforts to respond to ATCM and CEP requests, and to provide independent scientific advice to assist in implementing the various components of the Antarctic Treaty system. It was noted that the papers provided by SCAR would be considered under the relevant agenda items.

(31) The Executive Secretary of the Council of Managers of National Antarctic Programs introduced the COMNAP Report (Volume 2, Part III, section 4). He noted that the Council, established in 1988, had at its 20th annual meeting adopted a new constitution that clarified and reasserted COMNAP's purpose "to develop and promote the best practices in managing the support of scientific research in the Antarctic". He indicated that the organisation remains committed to supporting the Antarctic Treaty system and that its members continue to work together to help each other facilitate the development and conduct of National Antarctic Programs, safely, efficiently, and in the most environmentally responsible manner possible. He noted further that additional information can be found at COMNAP's website *www.comnap.aq.*

(32) The Meeting recognised with appreciation COMNAP's continuing role in both promoting and facilitating cooperative development of Antarctic research and support programmes, and in providing operational advice to the various participants in the Antarctic Treaty system.

(33) In relation to Article III-2 of the Antarctic Treaty, the Meeting also received reports from the Agreement on the Conservation of Albatrosses and Petrels (ACAP); the International Association of Antarctica Tour Operators (IAATO); the International Hydrographic Organization (IHO); the International Union for the Conservation of Nature (IUCN); and the Antarctic and Southern Ocean Coalition (ASOC).

(34) The representative of the International Association of Antarctica Tour Operators introduced the IAATO report (Volume 2, Part III, section 5). He indicated that tourism activities are expected to continue to decline due to the world economic situation. He noted that, despite the decline, IAATO remains committed to strengthening its core mission of safe and environmentally responsible tourism through several new initiatives. He confirmed that IAATO welcomes a dialogue with the Treaty Parties, both on a bilateral and multilateral basis. In that regard, he indicated that representatives of Consultative Parties would be welcome to attend the IAATO Annual Meeting to be held the week of June 8, 2009 in Providence, Rhode Island, USA.

(35) The representative of the International Hydrographic Organization introduced the IHO report *Cooperation in Hydrographic Surveying and Charting in Antarctic Waters* (Volume 2, Part III, section 5). He pointed out that, despite efforts to raise awareness of the importance of assigning higher priority to charting in Antarctica, progress has been slow. He urged Parties to consider adopting rules or guidelines analogous to those of SOLAS Chapter V, Regulation 9.

(36) The representative of the International Union for the Conservation of Nature introduced the IUCN report (Volume 2, Part III, section 5). He noted that Recommendation 4118, adopted at the 4th World Conservation Conference held in Barcelona, Spain, had identified a number of issues of relevance to the Antarctic and Southern Ocean, including marine protected areas, climate change, tourism, and bioprospecting. He referenced the disintegration of certain Antarctic ice shelves, noted the importance of the joint CEP/SC-CCAMLR workshop, and urged that a network of protected areas be established to facilitate investigation of the effects of climate change in the Antarctic as well as to meet the objectives of CCAMLR and the Protocol on Environmental Protection to the Antarctic Treaty. He noted further that scientific research is the foundation of bioprospecting and that the Treaty Parties should ensure that the provisions of the Treaty and the Protocol concerning advanced notification, environmental impact assessment, and exchange of information are applied to any such research in the Treaty Area.

(37) The representative of the Antarctic and Southern Ocean Coalition introduced the ASOC report (Vol. 2, Part III, section 5) and referenced several additional papers submitted by ASOC relevant to other agenda items. She urged Parties that have not done so to ratify Annex VI of the Protocol on Environmental Protection to the Antarctic Treaty. She also urged expedited efforts to deal with tourism and bioprospecting in the Antarctic and development of a system of marine protected areas and reserves in the Southern Ocean to better meet the intents of both CCAMLR and the Protocol.

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

Extending the Boundary of the International Maritime Organization's Antarctic Special Area

(38) The United States introduced WP 15 *Initiative to Extend the Boundary of the International Maritime Organization's Antarctic Special Area Northward to the Antarctic Convergence*, proposing that Parties support at the IMO the

extension of the boundary of the IMO's Antarctic Special Area northward to the Antarctic convergence as a means to protect the ecosystem encircling Antarctica. It proposed in a draft resolution that the Antarctic Treaty Parties which were also parties to MARPOL 73/78 cooperate in taking action within the IMO to attain this. It also recommended that Parties assess the feasibility of individual vessels observing the Special Area provisions whenever measurements of seawater temperature indicated that the Convergence was located north of the CCAMLR area.

(39) Parties supported the idea of protecting the entire Antarctic marine ecosystem. However, questions were raised related to the role and competence of the ATCM with regard to the area north of 60 degrees south latitude. An informal open-ended contact group chaired by the US discussed these issues further. The Meeting agreed to cooperate to enhance environmental protection for the entire Antarctic marine ecosystem, to seek the views of CCAMLR on the possibility of asking the IMO to extend the Antarctic Special Area northward to the Antarctic Convergence, and to consider at the next ATCM the views of CCAMLR and whether to recommend that further steps be taken within the IMO. The Meeting adopted Resolution 1 (2009) (Part II, section 3, page 267).

(40) Upon approval of Resolution 1 (2009), Chile, as proponent in 1959 of the "protection and conservation of the living resources of Antarctica" expressed satisfaction for the consolidation of the Antarctic region within the sequence initiated by the Agreed Measures and continued by the Seals, Marine Living Resources, Regulation of Antarctic Mineral Resources Conventions and subsequent prohibition of mineral resource activities by the Protocol on Environmental Protection to the Antarctic Treaty, of which Annex IV on Prevention of Marine Pollution, Article 8 requires due consideration of possible adverse effects upon dependent and associated ecosystems "outside the Antarctic Treaty area". Chile expressed the hope that actions undertaken under this Resolution will result in the extension of the Special Area established by the IMO.

(41) While joining consensus on Resolution 1 (2009), Argentina expressed the view that the application of an ecosystem approach may have its limitations, particularly if consideration is given to situations in which the lack of sufficient scientific knowledge could render the application of such an approach inadequate or controversial.

(42) The United Kingdom and some other Parties stated that, in their view, nothing in Resolution 1 (2009) would have the effect of extending the scope

of the Antarctic Treaty or the Protocol to the area north of 60 degrees south latitude.

(43) The US and some other Parties noted that the focus in Resolution 1 (2009) on the area north of 60 degrees south latitude up to the Antarctic convergence was consistent with the Antarctic Treaty and related instruments. It referred in particular to Article 2 of the Protocol by which the Parties committed themselves to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems.

Role and place of COMNAP in the Antarctic Treaty system

(44) The Russian Federation introduced WP 45 *About the role and place of COMNAP in the Antarctic Treaty System*. It noted COMNAP's adoption in 2008 of a new constitution as an important development and proposed that the ATCM provide additional formal recognition of COMNAP through a Decision.

(45) The Meeting agreed that COMNAP was an extremely useful component of the family of Antarctic institutions. Several Parties supported the proposal, while others pointed out that the ATCM could not "approve COMNAP's constitution" and had difficulties with other wordings in the draft. After further consultations, the Meeting agreed to adopt Resolution 2 (2009) (Part II, section 3, page 269).

Review of the recommendations on Protected Areas and Monuments

(46) The Executive Secretary introduced SP 6 *Review of Recommendations on Protected Areas and Monuments* which continued the work of analysing previous measures related to area protection. During a brief discussion, the Meeting expressed its great appreciation for the considerable work of the Secretariat in conducting this analysis, and agreed to consider this further at ATCM XXXIII.

(47) Chile introduced WP 50 rev. 1, *Measure 3 (2003) Antarctic Protected Areas System, Revised List of Historic Sites and Monuments (Proposed Amendment to the Annex)*, which proposed the insertion of the words "Cape Legoupil" before the words "Trinity Peninsula" and a dash and the words "Louis Philippe Peninsula" after the words "Trinity Peninsula" in the Revised List of Historic Sites and Monuments. Chile reported that the present designation was inadvertently introduced during the revision of the Revised List and failed to recognise the century's long use of Louis Philippe Peninsula as

a place name. The United Kingdom expressed its concern that the use of double designations could set an undesired precedent in listing historic sites. Chile concluded that it would return to this issue at the next ATCM.

Review of Annex II of the Environmental Protocol

(48) Australia introduced WP 39 *Annex II: Finalising the Review* which outlined progress made during discussions over the last eight years and offered suggestions on how to complete this work, including a proposed revised text of Annex II. The proposed text was considered paragraph by paragraph, and a number of outstanding issues were identified. Following further consultations in an informal open-ended contact group chaired by Australia, the Meeting agreed to adopt Measure 16 (2009) (Part II, section 1, page 201). The Meeting congratulated Australia and all other Parties who had participated in the discussions for their extremely hard work in achieving this milestone. Australia submitted IP 121 *Annex II to the Protocol on Environmental Protection to the Antarctic Treaty*, which identified the changes between the amended version of Annex II adopted by Measure 16 (2009) and the original 1991 text.

(49) Japan reconfirmed the Parties' right to extend the one-year period before the entry into force of the amendment of Annex II.

(50) During the negotiations, the United States noted the complex interaction between the Annex and the Agreement on the Conservation of Albatrosses and Petrels. While recognising that the objectives of both agreements are consistent and should be implemented in a manner consistent with each other, the United States noted that additional discussions on how both agreements will interact going forward would be helpful.

(51) Argentina acknowledged the work undertaken by Parties to conclude the revision of Annex II. However, Argentina, as the initial proponent of such a revision, wished to point out that some issues of this work, particularly its scope, would have benefited from a more in-depth analysis.

ATME on Climate Change

(52) Pursuant to its offer to host an Antarctic Treaty Meeting of Experts (ATME) on the implications of climate change for the management and governance of Antarctica, Norway introduced a draft Decision identifying the topics to be discussed at the meeting. The draft Decision also identified organisations, including the WMO, the IPCC and UNEP, which should be invited to

provide experts for the ATME. Norway clarified that the ATME will include Antarctica's uniqueness in providing records of past climate changes among the topics it addresses. The advice of the ATME will be reported by Norway at ATCM XXXIII. Parties thanked Norway for its offer to host this meeting of experts and agreed to adopt Decision 1 (2009) (Part II, section 2, page 213).

Item 6: Operation of the Antarctic Treaty system: Review of the Secretariat's situation

(53) As an introduction to the presentation of the Secretariat Report 2008/09 (SP3 rev. 2), the Executive Secretary reviewed the progress made since 2004 in performing the Secretariat tasks listed in Measure 1 (2003). With the exception of the task to update the Antarctic Treaty Handbook, he reported that all tasks had been carried out as part of the Secretariat's operations, and emphasised two in particular: the establishment of the Electronic Information Exchange System (EIES) and the availability of ATCM documents, Final Reports and measures on the ATS website. Both tasks were critical to the Parties fulfilling their requirements under the Antarctic Treaty and the Protocol. The Secretariat was congratulated by the Meeting on these accomplishments.

(54) The Executive Secretary further noted that the ATS website now included the complete set of documents from all past ATCMs in all languages except for some texts in Russian and French from early ATCMs. The Meeting agreed that the archives needed to be complete, and requested Parties to check their files for the early reports. Russia and France were asked to consider translating missing reports for inclusion in the electronic archive.

(55) The Executive Secretary explained the key elements in SP 3 rev. 2 *Secretariat Report 2008/09* related to ATCM/CEP support, information exchange, documentation, public information and management.

(56) He stated that budgetary restrictions had caused a delay in distributing the Final Reports of ATCM XXXI. In addition, many colour illustrations had had to be printed in black and white. He further noted that the assistance of the United States in preparing for ATCM XXXII and the CEP made the Secretariat's task relatively easy. The United States thanked the Secretariat for its assistance in helping organise ATCM XXXII and facilitate the selection of the new Executive Secretary. It requested and received further

information on the development of the dynamic database on Antarctic Specially Protected and Managed Areas.

(57) The Executive Secretary stressed the critical importance of keeping the Contacts Database current, to ensure that there were authorised officers for each Party to keep the information on the contact points current and to supply data to the Electronic Information Exchange System (EIES). He noted the high public demand for copies of the Antarctic Treaty system brochure. He informed the Meeting that after lengthy discussions the issues concerning the status of Secretariat staff under Argentine labour and social welfare legislation had been resolved. As a voluntary contribution, Argentina had agreed to provide the employer part of the contributions to the Integrated System of Pensions and Retirement of the Argentine Republic.

Financial Matters

(58) The Executive Secretary introduced the Secretariat's Financial Report for 2007/08, contained in SP 4 rev. 4 Draft *Secretariat Programme 2009/10* noting that the report contained columns for the budget, the provisional report as presented last year and the (audited) definitive report, as proposed by ATCM XXXI.

(59) He further noted the appointment of a new Accountant, and explained a few complications associated with the income and expenditures included in the report. Due to an error in calculating the exchange rate between the Argentine peso and the US dollar, the item "Other income" had been too high in the provisional report. This reduced the surplus available as income for 2008/09.

(60) Due to inflation, office expenses and the maintenance of IT equipment were greater than budgeted for. There were on the other hand several cost savings. Waiting to send all of the Final Reports in all languages at one time, rather than as they were produced, reduced the cost of postage. The amount expended for travel had been reduced because the Executive Secretary did not attend the 2008 meeting of CCAMLR.

(61) The Executive Secretary noted the difficulty in budgeting for translation and editing because of the difficulty in anticipating the number of documents requiring translation. He suggested that the Meeting consider the creation of a "buffer fund" to cover these types of expenses not in the Secretariat's control, and that the "buffer" be included in a contingency fund to replace the Future Meeting Fund after its disbursement of funds held in reserve pending approval by all Parties of Measure 1 (2003).

(62) The Executive Secretary noted that some gaps in the budget had been made up in part by the receipt of Member contributions overdue from previous years and by extra contributions made by the United States and Spain in 2007/08. He referred to SP 5 *Contributions Received by the Antarctic Treaty Secretariat 2007–2010* which contained a table showing Parties' contributions for 2007–2010, and noted that there were a few outstanding arrears.

2009/10 Activities

(63) The Executive Secretary explained the key elements of the activities carried out during the Financial Year 2009/10, including the start of the operational phase of the Electronic Information Exchange System and the development of the Protected Areas Database. Inflation caused budgetary increases for staff and equipment, with some expenses offset in the short term because of the devalued Argentine peso. He hoped to tackle the Antarctic Treaty Handbook this year.

Proposed Budget 2010/11

(64) The Executive Secretary reported that budget cuts decided at ATCM XXXI were in some cases more drastic than the Secretariat could realise. Staff and translation costs continued to be the largest costs of the Secretariat. There would be a USD 400,000 budget increase within one or two years, when the remaining Party approved Measure 1 (2003). He explained that the Staff Replacement item was to cover costs associated with the change of the Executive Secretary.

(65) The Meeting agreed to adopt Decision 2 (2009) (Part II, section 2, page 215) regarding the reappointment of the Sindicatura General de la Nación (SIGEN) as the external auditor of the Secretariat for the coming four years. This Decision replaces Decision 3 (2008).

(66) The Meeting agreed to upgrade the Information Officer's rank due to expanded duties with EIES. It noted that although the upgrade did not affect the current budget, the relevant increased costs would appear in future budgets.

(67) Referring to the list of outstanding contributions, Peru announced that it had approved the pending contribution from 2008 and part of 2009. Ukraine reported it planned to make its contribution in the second half of 2009.

(68) One Party recommended a budget of zero nominal growth, and noted that this would imply a budget cut of USD 170,000, which could be achieved by reducing amounts for the Future Meeting Fund and the Working Capital Fund and by reducing by 20% expenditure on Goods and Services and Equipment.

(69) The Meeting noted that Executive Secretary travel to the CCAMLR Annual Meeting was not included in the budget. Many Parties suggested that travel funds to attend this meeting should be added to the budget because it was important that the new Executive Secretary be present in 2009/10, and it was the responsibility of the Secretariat to attend and participate in Antarctic Treaty system meetings in order to maintain awareness of relevant trends and decisions. The Meeting agreed to also include cost of travel to the two Antarctic Treaty Meetings of Experts that will take place prior to ATCM XXXIII.

(70) Parties agreed on the need to ensure a lean, controlled budget, while noting that "micromanagement" was undesirable. The budget must provide adequate funds to ensure quality support. Some Parties noted that last year's lean budget reduced many areas of expenditure and saw no need for cuts of comparable size this year. Some Parties noted in particular the need to maintain appropriate investment in information technology equipment and development and training of personnel needed to ensure the Secretariat was able to support the ATCM as intended by the Parties. They were concerned that further cuts could compromise the Secretariat's ability to support the ATCM in its work. Some Parties noted that they wanted to avoid letting last year's lean budget set a precedent for this year, and were concerned that more cuts could be difficult to reverse.

(71) It was agreed that the large fluctuations in contributions in these formative years were unfortunate, and that there was a need for more stable budget and contribution levels. In this connection the Meeting agreed that unpredictability in translation costs was a problem. Travel costs would also fluctuate depending upon the location of the annual ATCM.

(72) Parties agreed to consider various means to reduce translation and publication costs. An informal open-ended contact group presented various options, including limiting length of papers and reducing size of printed version of Final Reports. The Meeting directed the Secretariat to publish only the ATCM and CEP reports and the Decisions, Measures and Resolutions as printed text reporting on the annual meeting of Parties. Annexes to measures and observer statements would be issued with each copy of the Final Report

in the form of a CD attached to the cover of the Report. All materials from the annual meeting would continue to be available in full on the Secretariat website. This approach would result in a Final Report of approximately 100 pages, reducing the cost of printing by half.

(73) The Meeting agreed to revise the 2002 Guidelines on the submission of documents for translation to set an upper limit of 1500 words of text. Proposed Resolutions, Decisions or Measures and their attachments would not be included within this limit. The revised guidelines would take effect with the submission of papers for ATCM XXXIII. The Meeting agreed to adopt Decision 3 (Part II, section 2, page 219). The Decision also noted that Recommendation 1-XVI (Canberra, 1961) was no longer current.

(74) The Meeting discussed whether a translation charge should be applied to documents for translation submitted to the Secretariat after the deadline and concluded that this should not be applied for the present. The Meeting agreed that in cases where the Guidelines had not been adhered to, the Secretariat would draw the attention of the submitting body to them.

(75) Some Parties expressed a desire to see draft budgets in coming years, for their reference, that would create a surplus to reflect the increased expenses for Parties that will take place upon activation of Measure 1 (2003). The Executive Secretary suggested maintaining the Future Meeting Fund for this purpose.

(76) Following discussions in an informal open-ended contact group, the revised budget for 2009/10 and the Forecast Budget for 2010/11 presented in SP 4 rev. 4 were approved and the Meeting agreed to adopt Decision 4 (2009) (Part II, section 2, page 223). This paper also contained the Executive Secretary's projection for an estimated budget for 2011/12. The budget for 2009/10 included projected savings from reduced printing and translation costs and increases in travel expenses to enable the Executive Secretary to attend the annual meeting of the Commission for the Conservation of Antarctic Marine Living Resources and the ATME in New Zealand in 2009, if the Executive Secretary determined that such attendance was necessary or appropriate. Correspondingly, the Forecast Budget included an allowance for travel to the ATME in Norway in 2010. The balance of the Future Meeting Fund not transferred to the host country of the first ATCM after the entry into effect of Measure 1 (2003) would be re-designated as the Translation Contingency Fund.

Election of the new Executive Secretary

(77) At a Plenary Session held on Monday 13 April 2009 the Chair of the ATCM announced that, in accordance with the agreed procedures, Dr Manfred Reinke of Germany had been elected as the new Executive Secretary of the Antarctic Treaty and would take up his duties in September 2009. This agreement is reflected in Decision 5 (2009) (Part II, section 2, page 245).

(78) The Meeting mandated the Chair to write to the Argentine Government to this effect, in accordance with Article 21 of the Headquarters Agreement for the Secretariat. A copy of this letter is attached to the Decision on page 249.

Item 7: Report of the Committee for Environmental Protection

(79) Dr Neil Gilbert, Chair of the Committee for Environmental Protection, introduced the report of CEP XII (see Part I, section 2, page 85). The CEP had considered 37 Working Papers, 49 Information Papers and five Secretariat Papers (the full list of papers is at Annex I to the Report of CEP XII).

Operation of the CEP and Strategic Discussions on its Future (CEP Agenda Item 3)

(80) The Committee had scrutinised options for improving the efficiency with which it works both intersessionally and during its meetings. It had noted the usefulness of its five-year work plan as a means of managing its workload. An updated version of this is at Appendix 1 of the CEP report.

Operation of the CEP (CEP Agenda Item 4)

(81) The Secretariat had reported on the further development of the electronic (web-based) information exchange system (EIES) developed as a mechanism for exchanging information as required by the Protocol on Environmental Protection. The Committee had noted the value of the EIES in facilitating the submission, management and use of environmental information exchanged under Article 17 of the Protocol and encouraged Parties to use the system fully. It had supported further development of the EIES and had noted that the fully operational system would allow summary information to be obtained to support the work of the Committee. It had asked the Secretariat to prepare an example of such summary information for CEP XIII.

(82) The United Kingdom, noting the importance of the EIES as a tool, expressed its concern that the EIES was not being fully utilised. It suggested that further clarification of the deadlines for data submission may be necessary as well as the need to consider other potential barriers to timely data exchange and submission.

(83) The Committee had examined its Rules of Procedure noting that they had not been updated since 1998. Following discussion, the Meeting revised the CEP's Rules of Procedure and adopted Decision 6 (2009) (Part II, section 2, page 251).

Environmental Impact Assessment (CEP Agenda Item 6)

(84) The Committee had agreed to undertake a study of the environmental aspects and impacts of tourism and non-governmental activities in Antarctica, noting the high priority afforded to environmental impacts of tourism and non-governmental activities in the CEP's Five Year Work Plan and the Meeting's interest in the topic (paragraph 203, Final Report ATCM XXXI). It had identified four key objectives for the proposed study: (i) the need to provide a comprehensive and up-to-date status report on tourism and non-governmental activities in the Antarctic Treaty area; (ii) an assessment of actual or potential environmental impacts; (iii) the identification and assessment of the effectiveness of existing management measures; (iv) the identification and assessment of the adequacy of ongoing research and monitoring, as well as of analytical methods used to analyse existing data. The outcome would be to make recommendations for the future management of the environmental aspects of Antarctic tourism and non-governmental activities.

(85) The Committee had agreed to establish a Project Management Group comprising interested CEP Members to oversee the study. The United States welcomed the proposed tourism study and its focus on potential environmental impacts of tourism and other non-governmental activity. It also recorded its appreciation of the offer by New Zealand to staff the proposed tourism study.

Area Protection and Management (CEP Agenda Item 7)

(86) The Committee had considered 13 new or revised protected or managed area management plans. Three had been reviewed by the Subsidiary Group

on Management Plans (SGMP) established by CEP XI and 10 revised management plans had been submitted directly to CEP XII.

(87) Accepting the CEP's advice, the Meeting adopted the following Measures on Protected and Managed Areas:

- Measure 1 (2009): Antarctic Specially Managed Area No 3 (Cape Denison, Commonwealth Bay, George V Land, East Antarctica): Revised Management Plan
- Measure 2 (2009): Antarctic Specially Managed Area No 7 (South-west Anvers Island and Palmer Basin): Revised Management Plan
- Measure 3 (2009): Antarctic Specially Protected Area No 104 (Sabrina Island, Balleny Islands): Management Plan
- Measure 4 (2009): Antarctic Specially Protected Area No 113 (Litchfield Island, Arthur Harbor Anvers Island, Palmer Archipelago): Revised Management Plan
- Measure 5 (2009): Antarctic Specially Protected Area No 121 (Cape Royds, Ross Island): Revised Management Plan
- Measure 6 (2009): Antarctic Specially Protected Area No 125 (Fildes Peninsula, King George Island, South Shetland Islands): Revised Management Plan
- Measure 7 (2009): Antarctic Specially Protected Area No 136 (Clark Peninsula, Budd Coast, Wilkes Land): Revised Management Plan
- Measure 8 (2009): Antarctic Specially Protected Area No 142 (Svarthamaren): Revised Management Plan
- Measure 9 (2009): Antarctic Specially Protected Area No 150: (Ardley Island, Maxwell Bay, King George Island): Revised Management Plan
- Measure 10 (2009): Antarctic Specially Protected Area No 152 (Western Bransfield Strait): Revised Management Plan
- Measure 11 (2009): Antarctic Specially Protected Area No 153 (Eastern Dallmann Bay): Revised Management Plan
- Measure 12 (2009): Antarctic Specially Protected Area No 162 (Mawson's Huts,Cape Denison, Commonwealth Bay, George V Land, East Antarctica): Revised Management Plan
- Measure 13 (2009): Antarctic Specially Protected Area No 171 (Narębski Point, Barton Peninsula, King George Island): Management Plan

(88) The Committee had enthusiastically welcomed the Secretariat's development of an updated database to support the Antarctic protected area system, and incorporating a geographic information system.

(89) The Committee had considered the report by its Subsidiary Group on Management Plans (SGMP) on its work, in accordance with its fourth Term of Reference, to improve management plans and the process for intersessional review. The group's review of past protected area recommendations had indicated several important events and actions since the last review at CEP III, including the entry into force of Annex V, the adoption of several Resolutions on area protection and management, the establishment of the Secretariat and its protected areas database and information exchange system, the establishment of the SGMP, the CEP's proposal to study the environmental aspects and impacts of Antarctic tourism, and the joint CEP / SC-CAMLR workshop.

(90) The Committee had endorsed the SGMP's proposed work plan, which included work for the next two years to develop standard wording and a template for management plans, to revise the Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas, and to develop similar guidance for the development of ASMA management plans.

(91) The United States commended the work of the SGMP during the intersessional period and supported its future programme.

(92) The UK endorsed the work of the SGMP and noted the significant amount of work it had accomplished which had streamlined the work of the CEP considerably. The UK also suggested that the CEP practice of including an abstract in every paper and circulating a digest of all the submitted papers might also be adopted by the ATCM.

(93) The Meeting adopted Resolution 3 (2009) (see Part II, section 3, page 271) providing new guidelines for managing the list of Historic Sites and Monuments (HSM) held under Measure 3 (2003), aimed at improving the quality of the protection afforded to present and future sites and monuments. It agreed to add two new sites to the list of Historic Sites and Monuments held under Measure 3 (2003) and adopted Measure 14 (2009) (see Part II, section 1, page 197):

- British hut (Base W) on Detaille Island, Lallemand Fjord, Loubet Coast
- British hut at Damoy Point, Dorian Bay, Wiencke Island

(94) The Meeting considered and approved seven new Site Guidelines endorsed by the Committee by adopting Resolution 4 (2009), which can be found in Part II, section 3 on page 277. The Committee had established an Intersessional Contact Group (ICG) to review the current Site Guidelines and assess the extent to which these guidelines contained generic versus site-specific advice, and to develop generic guidance for visitors, among other things by reviewing the environmental elements of the guidelines appended to Recommendation XVIII-1 (1994). Chile had been appointed as the ICG convener and the following terms of reference had been agreed:

- Review the environmental elements of Recommendation XVIII-1 (1994) *Guidance for Visitors to the Antarctic, and Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic* and other advice to visitors including that in Site Guidelines, Recommendations and Resolutions.
- Develop revised and updated guidance for visitors based on Recommendation XVIII-1 in a format that can also be used as a generic cover to accompany site specific guidelines.
- Consider options for how the CEP might most effectively assess new site guidelines and periodically review existing guidelines.
- Report to CEP XIII on the outcomes of this work.

(95) The UK noted that although Recommendation XVIII-1 was not yet in force as some Parties still needed to approve it, it would be helpful if it were in force. The UK suggested that the work of the CEP should not be to renegotiate that Recommendation but to advise the Meeting of the components that needed updating so that, in the meantime, Recommendation XVIII-1 does not lose its impact.

(96) The US noted its support for continuing efforts to develop site guidelines. These represent important environmental protection for sites that are frequently visited by tourists.

(97) In respect of marine spatial protection and management, the Committee had agreed to:

- develop a strategy and work towards the establishment of an effective, representative and coherent spatial protection of marine biodiversity within the Antarctic Treaty area within the next three years through the designation of Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) under Annex V of the Protocol on Environmental Protection;

- cooperate as far as possible with CCAMLR and SCAR to ensure that such measures are implemented on a scientific basis, and with the aim of achieving harmonized protection for Antarctic marine biodiversity across the Antarctic Treaty system; and
- focus further work on the development of marine spatial protection and management within, but not limited to, those priority areas agreed by CCAMLR which fall within the Antarctic Treaty area (Appendix 4 to the CEP Report, Part I, section 2, page 157).

(98) New Zealand congratulated the CEP on its work on extending marine protection into the Southern Ocean and the work by CCAMLR on the bioregionalization of the Southern Ocean and the identification of the eleven priority areas. It welcomed the holding of the joint CEP/SC-CAMLR workshop prior to CEP XII.

Conservation of Antarctic Fauna and Flora: Specially Protected Species (CEP Agenda Item 8)

(99) The Meeting noted that the issue of non-native species in Antarctica was shown as a high priority issue in the CEP's five-year work plan. The Committee had established an Intersessional Contact Group (ICG) which would work during the coming two years to take this work forward.

(100) The Committee had appointed France as the ICG convener and had agreed the following terms of reference:

- Develop suggested overall objective and key guiding principles for Parties' actions to address non-native species concerns.
- Develop a suggested set of generally applicable measures to prevent the introduction of non-native species, including the transfer of species between sites in Antarctica.
- Identify particular aspects of Antarctic operations for which further work might be required in order to develop specific guidance.
- Report to CEP XIII on progress with the above.

(101) The Committee had discussed updated information about the status of the southern giant petrel, and had expressed its gratitude to SCAR and ACAP for their work to update the status of the bird and to ensure the best available data for the status assessment. In the light of this, the Meeting adopted Resolution 5 (2009) on the Conservation of southern giant petrels as an update to Resolution 2 (2007) (see Part II, section 3, page 269).

Environmental Monitoring and Reporting (CEP Agenda Item 9)

(102) The Committee had had a substantive discussion on the issue of climate change in the Antarctic context, including a progress report from SCAR on Antarctic Climate Change and the Antarctic Environment. It had noted the increasing importance of addressing the issue of climate change, as highlighted in the Ministerial meeting held in Washington on Monday 6 April at the start of this Meeting and the signing of the Washington Declaration (2009) (Part I, section 3, page 159). The Committee had welcomed the proposal by Norway for a Meeting of Antarctic Experts (ATME) on this issue, and further welcomed the participation of the Secretariat. The Meeting recalled that it had earlier adopted Decision 1 (2009) with the Terms of Reference for an ATME.

(103) The Committee had welcomed SCAR's advice on its report on persistent organic pollutants (POPs) in the Antarctic region, prepared in response to a request from the Stockholm Convention Secretariat in 2008. The Meeting noted that the final edited report would be available in the intersessional period and authorised the Secretariat to forward the final report to the Stockholm Convention Secretariat.

Cooperation with Other Organisations (CEP Agenda Item 11)

(104) The Committee had noted the increasing cooperation between CEP and SCAR, and had welcomed the participation by the CEP's first observer to the SCAR Delegates Meeting (held in Moscow in July 2008).

(105) The Committee had considered the outcomes to the joint SC-CAMLR and CEP workshop held 3–4 April 2009, immediately prior to CEP XII. The Committee welcomed the joint CEP / SC-CAMLR workshop report and its recommendations and endorsed them, noting that such a workshop was in the spirit of Resolution 1 (2006). It stressed the importance of maintaining momentum on the issues identified by the workshop. The Meeting agreed that the joint workshop accorded with both the spirit and the recommendations of Resolution 1 (2006) and endorsed the report and its recommendations, commending both to SC-CAMLR.

Other Matters

(106) The Committee had adopted the provisional agenda for CEP XIII and had updated its five-year work plan.

(107) The Committee had elected Ms Verónica Vallejos to the position of first Vice Chair. The Chair congratulated Ms Vallejos on her election and expressed the gratitude of the Meeting to Dr Yves Frenot for his work during two terms as first Vice Chair. The Chair further thanked Dr Neil Gilbert for a successful shortened, yet highly productive CEP meeting.

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

(108) Several Parties reported on progress since ATCM XXXI in drafting legislation to implement the Liability Annex to the Protocol on Environmental Protection. Notwithstanding a number of complex issues that arise in finding ways to implement certain provisions of Annex VI through domestic legislation, the majority of those Parties anticipated that the Liability Annex would be advanced in their countries by the time of the next ATCM. ASOC noted that it was pleased to hear about the progress of many Parties, but that other Parties had not spoken. It noted that it was important for this Annex to be ratified quickly and brought into force.

(109) The Meeting congratulated Poland and Spain for having approved Measure 1 (2005) since the previous ATCM.

Item 9: Safety and Operations in Antarctica

Towards Improved Search and Rescue Coordination

(110) COMNAP presented WP 47 *Towards Improved Search and Rescue Coordination and Response in the Antarctic*, informing the Meeting on the outcome of a workshop on this topic held in August 2008. Participants of the workshop included the Rescue Coordination Centres (RCCs) of the five countries that share responsibility for the coordination of search and rescue (SAR) over the Antarctic region, several ATCPs, IAATO, IMO, and ICAO. The workshop participants adopted a number of recommendations and decided on a range of actions. As a result, COMNAP asked the ATCM to consider the adoption of a Resolution incorporating those recommendations from the workshop that were directed to Antarctic Treaty Consultative Parties.

(111) As part of its presentation, COMNAP and Chile presented an example of an emergency scenario explored during the workshop. The presentation highlighted the information available to RCCs and National Programs

during an emergency and how this information can assist in responding to an accident.

(112) Parties and IAATO thanked COMNAP for its work in convening the workshop and thanked Chile for hosting the workshop. Parties and IAATO welcomed the increased cooperation between and among RCCs, Parties' National Programs, IAATO, and other bodies. The Russian Federation noted the connection between its IP 47 *International cooperation in the Antarctic as an important argument for provision of safety of operations and investigations in the region* and the workshop's emphasis on international cooperation in safe operations in Antarctica.

(113) France recalled that work on SAR in the ATCM has been ongoing since 1996 and was thankful to COMNAP for its exhaustive study. It proposed to adopt a resolution based on COMNAP's proposition and emphasised the importance of the land SAR issue.

(114) Chile noted the benefit of the workshop including the benefit of IAATO's vessel tracking system. IAATO noted that as a result of this system, IAATO vessels were able to respond to other distress signals in the last season.

(115) In light of successful handling of recent incidents in Antarctica, Chile further noted that the current system of SAR is working.

(116) South Africa reported that following its participation in the workshop it had enhanced the relationship with its RCCs through a formal operating agreement and that this had already led to improved information exchange between them, as well as with vessels of other National Programs utilising Cape Town as a gateway to Antarctica.

(117) Norway welcomed this initiative to enhance the effectiveness of search and rescue operations in the Antarctic Treaty area, and also emphasised the work and responsibility of the IMO and ICAO on search and rescue.

(118) COMNAP noted that, at the next workshop on this topic to be held in Argentina in July or August 2009 (to be confirmed), it is proposed to include discussions on the issue of land-based emergencies. Parties supported the workshop in addressing this important topic. The Russian Federation suggested that consideration may also be given to rescue scenarios in the winter particularly with regard to remote land-based locations.

(119) Since consensus could not be reached on a draft Resolution because a few Parties expressed some concern, it was agreed to go on working intersessionally on the issue raised by COMNAP.

(120) Chile introduced IP 118 *Participación de los Centros de Búsqueda y Salvamento aéreo y marítimo de Chile en el rescate del buque de pasajeros "USHUAIA" y medidas de mitigación medioambiental por accidente en la Antártida*.

(121) Argentina thanked Chile for its presentation of IP 118 on the incident in 2008 involving the *M/V Ushuaia* in the Antarctic Treaty area, in which Argentina and Chile shared SAR coordination responsibilities. It added that Chile's paper is proof, once again, of the excellent cooperation between the two countries on this issue.

(122) In reference to the rescue of the *M/V Ushuaia*, Argentina pointed out the importance of having worked together with tour operators, MRCCs and the national program operators, as this allowed for an early intervention by the Argentine Air force C-130s, which carried the affected vessel's passengers to the city of Ushuaia. Furthermore it underscored that the previous work undertaken by the Argentine Antarctic Programme in preparing contingency plans for the *M/V Ushuaia* turned out to be a positive outcome of the Search and Rescue Workshop, while it also contributed to keep spills under control once crew and passenger safety had been secured.

(123) Argentina also recalled another case, occurred on 17 February 2009, in which the Ushuaia MRCC initiated coordination of rescue operations upon receiving an alert call from the *M/V Ocean Nova*, which ran aground in the proximity of the Argentine San Martín Station. The first vessel on the scene was the Spanish vessel *Hespérides*. Argentine Navy vessels *Canal de Beagle, Aviso Castillo* and *Aviso Olivieri* also set sail for the incident site. The *Ocean Nova* was also assisted by IAATO member vessels. Passengers were transferred to the port of Ushuaia where they arrived on February 22nd. Although the incident had no serious consequences of environmental or any other nature, it cannot be considered a minor one. Argentina further recalled the importance of continuing joint activities between MRCCs, National Operators and IAATO.

(124) IAATO thanked Argentina, Chile and Spain for their assistance in both the *M/V Ushuaia* and *M/V Ocean Nova* groundings.

(125) ASOC introduced IP 34 *Managing Antarctic vessels – Avoiding future disasters*, noting that during the last summer season, two vessels ran aground in Antarctica and the potential for such disasters is amplified with increasing shipping activity. Also noting the good work by the IMO and the ICG on risk assessment, ASOC identified vessel routing and monitoring, environmental

impacts of fishing and whaling vessels, general discharge operations, and the need for vulnerability assessment and protection of sensitive sea areas as issues still requiring attention.

(126) ASOC called on the ATCM to work with the IMO and to take urgent action on these matters to mitigate the risks of operating in Antarctic waters.

(127) ASOC IP 2 *Impacts of local human activities on the Antarctic environment: A review* was submitted under this agenda item, but discussed extensively in the CEP (Item 6b – Other EIA Matters, paragraphs 48–51 of the XII CEP report) and thus taken as read.

(128) Uruguay presented IP 60 *On spot technical assistance: Availability of hydrographic experts for vessels of opportunity collecting hydrographic data, by the Uruguayan Antarctic Program in the Antarctic Peninsula area*. Uruguay offered to provide a hydrographer free of charge to train crewmembers for vessels of opportunity on how to use the guidelines for collection of hydrographic data issued by the IHO Hydrographic Commission on Antarctica (HCA).

(129) IAATO welcomed the initiative and looked forward to working with Uruguay.

(130) Australia introduced IP 79 *Joint medical evacuation from Davis Station, Antarctica* (submitted together with the United States). Australia described the air evacuation performed on 5 November 2008 by the United States and Australia of a badly injured programme participant from Davis Station. The injured person, a winter-over employee of the Australian Antarctic Division (AAD), suffered multiple fractures during an all-terrain vehicle accident on 20 October 2008 while on a field trip. Australia expressed its thanks to the US for its assistance in making the medical evacuation possible.

(131) The United States noted that the medical evacuation was a very difficult and complex affair. Constructing the sea ice runway and getting the runway ready for the aircraft was no small achievement.

(132) The United Kingdom introduced IP 42 *An update on the Antarctic Polar View programme: Information from satellite observations for safer and efficient sea ice navigation*, noting that the primary aim of the programme in the Antarctic is to deliver sea ice information from multiple satellite observations to ship operators in a timely manner. In addition to supporting ship routing, Antarctic Polar View services are increasingly being used to support science activities in the Southern Ocean. The United Kingdom noted

that Polar View continues to be available to all at no charge and announced that the programme had secured funding from the European Space Agency and the UK government to cover provision of this free service for the next two Antarctic seasons. At the conclusion of that period, the United Kingdom plans to look at other funding options.

(133) The Meeting welcomed IP 42, noting that Polar View is an important tool for safety of shipping. The Meeting thanked the United Kingdom for ensuring this tool will be available for another two years.

(134) China introduced IP 38 *The report on accident of snow vehicle's falling down into the sea*, providing details on how a PB 300 snow vehicle fell into the sea 41km from Zhongshan Station on 27 November 2008. The only person inside jumped out and was not injured. The investigation showed that no pollution was found.

(135) Germany informed the Meeting about three medical evacuations during construction activities at Neumayer Station. Germany thanked the national programmes for their cooperation, especially to those that are part of DROMLAN.

(136) The Russian Federation introduced IP 47 *International cooperation in the Antarctic* as an important argument for provision of safety of operations and investigations in the region, informing the Meeting that on 5 October 2008 a fire broke out at Progress station, completely burning a two-storey building used for sleeping and working. One person was killed in the fire and two were seriously injured. In the same month at Mirny Station, Australian doctors performed surgery on a station staff member. The patient was later transferred out of Antarctica. The Russian Federation also thanked Brazil's assistance with transportation to King George Island when a Russian aircraft was damaged during landing in Punta Arenas. The Russian Federation also thanked Australia and China for their help on the accident at Progress Station.

(137) China expressed its sorrow for the Russian Federation's loss during the fire at Progress Station. China encouraged further international cooperation in polar research and logistics.

(138) The Russian Federation noted that Australia had proposed international cooperative arrangements in East Antarctica and that China had fully supported the proposal and hosted a meeting on the topic in Shanghai in 2008.

(139) Australia strongly echoed the Russian Federation's comments on the importance of international cooperation and thanked the Russian Federation and China for their help in transporting a Davis Station's traverse team's broken-down vehicle back to the station.

(140) China commented that this traverse had demonstrated a successful logistic cooperation between Australia, the Russian Federation and China. China noted that it had gained useful logistic experience during the traverse.

(141) Argentina informed the Meeting on an evacuation carried out by Argentina and Chile. It also highlighted the importance of addressing communication problems during medical evacuations that may arise due to different languages as well as procedures for medical check-ups carried out prior to travelling to Antarctica, and of having well equipped aircraft for such evacuations.

(142) New Zealand informed the Meeting about an accident which occurred inside the Antarctic Treaty area to a crew member onboard the ship *Bremen*. Rather than proceed to Antarctica, the ship turned back, allowing the crew member to be rescued by a New Zealand helicopter.

(143) IAATO thanked Australia and New Zealand for their response to the *Bremen* emergency. IAATO is keen to support Measure 4 (2004) and is willing to put its own resources on offer for national Antarctic programs if necessary.

(144) The United States thanked Argentina and Chile for help with the medical evacuation of two people who became ill on board research vessels. The US highlighted the opportunities provided by the COMNAP framework to act in these difficult situations.

Item 10: The International Polar Year 2007-2008

(145) On behalf of SCAR and the IPY-IPO, Dr David Carlson introduced WP 48 *IPY Report: Accomplishments and challenges*, noting that the IPY will leave a vital legacy of sustained observing systems, increased international research coordination and collaboration, stronger links between researchers across different disciplinary fields, reference datasets for comparison with the future and the past, development of a new generation of enthused polar researchers, and full engagement and understanding of the purpose and value of polar research by the public and decision-makers worldwide. He noted that the real success of the IPY will be judged by how the large amount of data collected will be analysed, synthesised, archived and above all exchanged.

Dr Carlson anticipated that a new, comprehensive view of the polar regions will result from IPY efforts.

(146) Dr Carlson also noted the challenge of maintaining focus on the polar regions now that the IPY period has passed, referring to four specific needs:

a. the need to develop integrated prediction capabilities;
b. the need to sustain networks of contacts between journalists, scientists and teachers that were established during the IPY;
c. the need to continue support for young polar scientists; and
d. the need to identify, preserve and share data obtained during the IPY.

(147) SCAR advised that the IPY Oslo Science Conference will be held in Oslo June 8–12, 2010 and encouraged all Parties to participate. All IPY scientists were urged to submit their data to their national Antarctic data centre or, if one does not exist, to establish a repository for data that may then be exchanged with other national Antarctic data centres. SCAR noted its engagement with SCOR (the Scientific Committee on Oceanic Research) in the design for a Southern Ocean Observing System and urged Parties to learn more about this system and to aid in its implementation when the design is published.

(148) Several Parties and COMNAP acknowledged the hard work of the IPY-IPO in compiling this report and thanked Dr Carlson for his contributions. Parties agreed that the legacy of IPY cannot be overestimated in terms of both its international scientific achievements and the related impacts of the long-term observation system infrastructure and the information now available to policy makers for governance in light of global climate change.

(149) Parties strongly supported a continuation of IPY work, particularly in the arena of long-term observation systems, data and information gathering, storage and exchange and the encouragement of young scientists.

(150) The Meeting adopted Resolution 6 (2009) on Ensuring the legacy of the International Polar Year (IPY) (see Part II, section 3, page 283).

(151) COMNAP supported the work described in both WP 48 and WP 6 (see paragraph 154 below) and confirmed it would assist as appropriate. It noted it was working in liaison with the SCAR Executive on development of new mechanisms to support and preserve the legacy of the IPY, in particular in regard to the networks of long term observations. This work will be presented for discussion at the next COMNAP annual meeting in August.

(152) The Republic of Korea informed Parties that, as part of the IPY legacy, the International Arctic Science Committee (IASC) meeting will be held in Korea in 2011.

(153) Moving on suggestions proposed in the 1960s, the Russian Federation suggested that it may be worth considering initiating a "Polar Decade".

(154) Norway and the UK presented WP 6 *Maximizing the Antarctic IPY legacy*, which proposed a scoping study and workshop to look at ways in which the legacy of the IPY in Antarctica could be maximised. Norway offered to prepare the scoping study which would constitute the basis for the discussions at the proposed workshop. The workshop will examine:

- the legacy of scientific measurements and observations, and implications for long-term data access and data management, collected during IPY in Antarctica;
- the ways in which the communication and outreach of the science results from IPY projects in Antarctica to policy makers, stakeholders and the interested public could be best continued; and
- the continued operation of IPY projects in Antarctica which has assisted with the recruitment of young polar scientists, international research coordination and funding, and international capacity building.

(155) The Meeting welcomed this proposal from Norway and the UK.

(156) It was agreed that the workshop will be hosted by Norway in June 2010, back-to-back with the IPY Oslo Science Conference. The workshop will be open for all interested Parties and organisations, such as SCAR and IPY (ICSU and WMO). The contact point will be Dr Jan-Gunnar Winther at the Norwegian Polar Institute *(winther@npolar.no)*.

(157) The conclusions and recommendations of the workshop will be prepared by an open ended contact group led by Norway and will be reported to the ATCM XXXIV.

(158) Some Parties recognised the value of encouraging young scientists to focus on Antarctic research through several organisations, including the Association of Polar Early Career Scientists (APECS). SCAR undertook to submit a paper to the next Meeting providing details on APECS and its activities.

Item 11: Tourism and Non-Governmental Activities in the Antarctic Treaty Area

i. Overview of the Antarctic tourist activity in the 2008/09 season

(159) IAATO introduced IP 86 rev. 1 *IAATO Overview of Antarctic Tourism: 2008–2009 Antarctic Season and Preliminary Estimates for 2009–2010 Antarctic Season*, providing a report of tourist activity in Antarctica during the last season, as well as an overview of Antarctic tourism trends. IAATO informed the Meeting that, because of the early timing of ATCM XXXII, it had not been possible to compile or analyse in detail the statistical data for the 2008–2009 season, and it expected that this data will be available in June 2009. IAATO noted that those preliminary estimations showed that the total number of visitors for the 2008–2009 season for IAATO members was around 38,900, including over-flights and cruise-only voyages, noting that this number was eight percent below the 42,298 that IAATO members had projected in June 2008 for the 2008–2009 season.

(160) IAATO had originally expected that the total number estimated for 2009–2010 season, considering all tourist activities, would be around 43,000. However, IAATO noted that, given the current economic downturn, levels of tourism are dropping and may continue to drop though it is unclear whether this will be a short-term or long-term trend. However, any decrease in activity should not prevent further measures to ensure that visitors are experiencing Antarctica in a safe and responsible manner. IAATO noted that they will continue to develop and provide training on industry best-practices and to offer advice and guidance where needed.

(161) It was noted that there was some uncertainty in the forecast of numbers of visitors in the future.

(162) IAATO presented IP 101 *Land-Based Tourism Facilities*, providing information on the range, scale and scope of IAATO members' land-based activities. IAATO recalled that this paper was a response to Japan's request at ATCM XXXI and noted that the paper includes definitions of land-based tourism and permanent infrastructure.

(163) IAATO's proposed definition for permanent infrastructure, which included reference to remediation of sites when infrastructure is removed, was welcomed, although it was noted that it may not be possible to return a site to its pre-impact condition.

(164) IAATO also introduced IP 87 *IAATO Field Operations Manual (FOM)*, which is IAATO's standardised single source for operations and training of tourism industry field staff.

(165) ASOC introduced IP 23 rev. 1 *Tourism and Land-based Facilities in Antarctica*, which has been produced following a request by Japan at ATCM XXXI. ASOC said that it had worked to the best of its ability to provide the requested information. ASOC had identified 14 land-based facilities that were used or had been used at some point to support or manage tourism. The tourism interface with land based facilities runs along three continuums: commercial – non-commercial; non-governmental/private – governmental; and the primary or ancillary use of the facility for tourism purposes. ASOC noted that it would appreciate the inputs of all Parties to a questionnaire that was attached to its paper and which it distributed at the Meeting.

(166) Parties thanked ASOC for this paper and asked ASOC to provide future updates on this information. ASOC noted that its ability to provide updates depended on Parties' continuing to provide information through the Information Exchange system. It was noted that these updates will assist in tracking the potential growth of infrastructure. The Meeting agreed that it was possible to obtain such information through the existing requirements for exchange of information under the Treaty and Protocol and urged Parties to fully implement these requirements. It was noted that better reporting would facilitate further analysis and discussion of potential tourism impacts.

(167) Argentina associated itself with comments made by other Parties that there are different interpretations with respect to tourism regulation. In relation to land-based facilities, Argentina recalled its position at former ATCMs, reserving its right to install at any time land infrastructure with some lodging capacity at any of its bases to host tourists and visitors, similar to those already existing in Antarctica.

(168) ASOC introduced IP 53 *Key Elements of a strategic vision for Antarctic tourism*, arguing that there is an urgent need for Antarctic Treaty Parties to develop a clear vision of tourism in the Antarctic, and to agree on a tourism strategy that delivers step by step on that vision through time. ASOC characterised tourism as a whole system composed by a departure region, a transit region, a destination region, the tourism industry, and the tourists themselves, which helped to conceptualise tourism as more than visitation of certain landing sites. ASOC considered that the unending growth of Antarctic tourism was not desirable, required or inevitable. Tourism activities in Antarctica should demonstrably have no more than a minor or

transitory impact on the environment. A precautionary approach should be used to manage tourism in the absence of conclusive scientific evidence about tourism impacts. Certain types of commercial tourism would need to be discouraged or prohibited.

(169) Parties' attention was called to the work the CEP is undertaking during the intersessional period regarding environmental aspects of tourism and non-governmental activities, which should help inform future debates.

(170) It was stressed that there has already been work done on regulating tourism in Antarctica and that future proposals for regulation should be focused and build on this past work.

(171) In relation to the control exercised over tourists on land, Argentina indicated that the inspection a Party carries out on a cruise ship under the provisions of Art. VII of the Antarctic Treaty does not allow exercising control over tourists on land. Argentina noted its experience in using observers on an Argentine cruise ship. Argentina also pointed out that deploying observers from a Party on cruise ships of its flag or whose operator has its legal address in such a Party has proved to be very positive since it allowed the Party to fully assess tourism management during a complete trip and promoted mutual understanding between the operator and the National Antarctic Program. However, Argentina recognised that some limitations with respect to proper supervision of Antarctic tourism still exist, and it would therefore be convenient to start exploring the chance of establishing a more open system of observers on board cruise ships.

(172) Other delegations agreed with Argentina that establishing a more open system of observers on board of cruise ships would be very useful.

(173) IAATO concurred that the use of observers on cruise ships has proven helpful for all concerned and that it complemented work in ensuring best practices and training for field staff. IAATO also expressed its willingness to cooperate with Parties to improve observer practice in respect of Antarctic tourism. However, it noted the practical challenges in obtaining observers for every departure.

(174) Regarding jurisdiction of passengers while on-shore, IAATO noted that these passengers are under the control of the expedition leader, who is employed by the authorised tour operator. In the zodiac, however, they remain under the flag state of the ship. At field camps tourists are under the control of the camp manager who is operating under a national authority. IAATO explained that compliance in the field relies on self-regulation.

(175) The UK clarified that it had clear permitting procedures to bind passengers ashore to comply with Antarctic Treaty provisions.

(176) Argentina introduced IP 119 *Report of activities of Antarctic tourism cruise ships operating from Ushuaia during austral summer season 2008/2009*, a summary of the main activities of cruise ships that visited Antarctica during 2008/2009 operating from the port of Ushuaia. This document includes information which is based on crew and passenger lists provided by cruise ships to Argentina's competent authorities. Argentina indicated that this document aims to become an alternative and/or complementary source of information to other available sources, in order to further assist in the assessment of tourist activities in the Antarctic Peninsula region. Argentina announced that it plans to present a similar report annually at future ATCMs.

(177) Russia welcomed Argentina's document and pointed out that it represented an excellent response to the need for control and regulation of Antarctic tourist activities from Parties, to which Russia has referred on several occasions during the current Meeting. ASOC thanked Argentina for its contribution, which usefully complemented the information provided by IAATO.

ii. Tourism proposals

(178) The United Kingdom introduced WP 10 *Strategic vision of Antarctic tourism for the next decade*, recalling to the Meeting that a proposal for developing such a strategic vision as part of the celebrations for the 50th Anniversary of the signing of the Antarctic Treaty had been presented to the 31st ATCM. During the intersessional period the UK had received comments from several Parties and Experts and noted that there was much common ground amongst the contributions, in particular on principles of mitigation of environmental and safety risks.

(179) The UK noted that the proposed vision aimed to establish the broad principles by which the Antarctic Treaty Parties will manage tourism, and proposed that the ATCM consider and endorse the vision as part of the 50th Anniversary celebrations.

(180) Argentina expressed appreciation for the work undertaken by the UK and pointed out that this document included some general principles on which consensus can be readily reached, and some other ones which could be better defined as tasks. Argentina considered that finding a common view on such tasks would be more difficult, since it should be clearly determined

where the responsibilities for such tasks should lie. However, Argentina also indicated that the strategic vision proposed in WP 10 is a valuable starting point.

(181) Several Parties noted concern over the growing popularity of tourism focused on sports or "extreme sports". Several Parties also noted the need to keep in mind all of the values identified in the Protocol for protection, e.g. intrinsic and wilderness values. The need to take a precautionary approach to management of tourism was noted by several Parties.

(182) Several Parties stated that, when properly managed, tourism in Antarctica should be welcomed. Tourism should be organised so as to minimise the environmental impact and maximise the safety of operations, while at the same time not interfering with the conduct of science programmes.

(183) Other Parties, on the other hand, stressed that the absolute priority of the Treaty is Antarctic scientific research and environmental protection and that tourism should not be encouraged but rather strictly regulated.

(184) There was some discussion as to whether a strategic vision document for tourism should be aspirational, focusing on general themes and goals for the future of tourism, or prescriptive, and thereby include a more detailed list of tasks that might be required as part of the implementation of such a strategy. The difficulty of separating out the goals of a strategic vision from the tasks required to implement it was also noted.

(185) As a result of these deliberations the Meeting adopted Resolution 7 (2009) (see Part II, section 3, page 285).

(186) Germany, supported by other Parties, thanked the UK for the effort to draft a strategic vision. It underlined however that the Resolution in its current form does not meet the expectations for a "vision". However, Germany supported the principles and hoped the UK would continue the intersessional work. This was echoed by Sweden.

(187) The UK shared the views of Sweden and Germany regarding their expectations for a vision, and expressed the desire to continue working and receiving comments during the intersessional period via the web-based ATCM discussion forum. The UK asked to receive initial further comments on the draft vision as set out in WP 10 by the end of September 2009.

(188) The Russian Federation introduced WP 44 *Problems of national control of tourist and non-governmental activity in the Antarctic*, in which attention is drawn to essential differences in the national procedures of regulation

and control of activities in Antarctica. In its view, the problem of "flag of convenience" is evident, since some tourist operators prefer to conduct their business in the states with more lenient Antarctic laws. The other major problem is the use by a sub-operator of one state, which does not possess permit to conduct its activity in Antarctica, of a valid permit issued for a tourist operator of another state (for example, sub-chartering of a boat, possessing the relevant permit for conducting activity in Antarctica).

(189) In this respect Consultative Parties were invited to improve implementation of the existing ATCM decisions on the exchange of information concerning Antarctic activities and to consider elaboration of new legal instruments enhancing control over tourist operations in Antarctica.

(190) Parties thanked Russia for this paper. Many Parties agreed the points raised by Russia concerning lack of consistent implementation of rules related to the Protocol on Environmental Protection and problems raised by use of flags of convenience.

(191) Several Parties offered suggestions for further information exchange to include posting EIAs and permits on the ATS website, or Parties submitting additional information in the official languages of the Treaty related to EIAs and permits to the Secretariat.

(192) Argentina, supporting Russia, reiterated, as it has already done in previous ATCMs, that IEEs on tourism activities were not always publicly available and that ready access to such information would be valuable to adequately assess proposals from tour operators.

(193) IAATO clarified the procedures when its member vessel operators sub-charter vessels. In the case of a sub charterer, the sub-charterer – and not the vessel operator – takes responsibility for providing advance notification, filing an EIA, conducting the voyage and filing post-visit report forms. Conversely if a vessel operator has a sales agreement with another company, the vessel operator remains responsible for the voyage, including its authorisation, execution and reporting.

(194) The United States introduced WP 17 *Proposal to make binding certain limitations on landing of persons from passenger vessels*, recalling that Resolution 4 (2007) recommended that Parties:

- discourage or decline to authorise tour operators that use vessels carrying more than 500 passengers from making any landings in Antarctica;

- encourage or require them to coordinate activities so that no more than one tourist vessel is at a landing site at any one time;
- restrict the number of passengers on shore at any one time to no more than 100 persons; and
- maintain a minimum ratio of one guide to twenty passengers while ashore.

(195) The United States proposed that it is timely to incorporate the recommendatory provisions from Resolution 4 (2007) into binding obligations through a Measure, and that such a Measure would serve both immediate and longer-term objectives of the Consultative Parties with respect to tourism in Antarctica. The United States stated that the adoption of a binding Measure would make clear that all operators are subject to the same standards. The US further noted that the provisions outlined in WP 17 are already practiced by IAATO members and represent the best practices of industry.

(196) Many Parties supported the proposed Measure, noting that it was timely and appropriate, given the 50th Anniversary of the Treaty, to make proactive steps towards the regulation of Antarctic tourism.

(197) Germany noted that definitions are not needed for this Measure and may lead to confusion with regard to the existing instruments. They should therefore be deleted.

(198) Japan noted concern over the implementation mechanism and fixed uniform figures as criteria. Parties agreed to add language that clarifies its relation to the Parties' obligations under the Protocol and confirm the possibility of future changes of the criteria through discussion at ATCMs.

(199) As a result of these deliberations, the Meeting adopted Measure 15 (2009) (see Part I, section 1, page 199).

(200) It was noted that, compared to the adopted Measure, more stringent standards are included in some existing resolutions (e.g. site specific guidelines).

(201) Norway introduced WP 43 *Report of the continued Intersessional Contact Group on Issues Concerning Passenger Ships Operating in Antarctic Waters*, informing the Meeting of the results of the ICG discussion on examination of issues related to the prevention and mitigation of a maritime incident in Antarctic waters. Norway informed the Meeting that the Group considered event tree analysis (ETA) as a tool to analyse how, proceeding from an initiating event, certain control measures may either prevent or mitigate undesirable outcomes. Norway noted that the conclusions drawn from event

trees suggested that incidents of concern were characterised by a succession of control measure failures, which showed a recurrence of possibly absent or inadequate control measures in five key areas: training, search and rescue (SAR), lifesaving, vessel construction, and other.

(202) Norway informed the Meeting that the ICG proposed that the ATCM continue to consider what issues related to tourist vessels should be referred for expert review and that Parties pursue through their representatives at the IMO consideration of the sufficiency of control measures related to the technical specifications of vessels engaged in polar activities.

(203) Norway also noted that it will submit an information paper to the IMO's Maritime Safety Committee 87th session or the Sub-Committee on Design and Equipment in 2010. The information paper will report on the work of the ICG and its identification of possible regulatory gaps bearing on the technical specifications of vessels engaged in polar activities, as described in IP 17 rev. 1 *Proposal for submission to the International Maritime Organization*.

(204) Parties noted the synergies in the work by the ICG and the ATME planned for Wellington regarding ship-borne tourism. Many Parties suggested that these issues should continue to be discussed at the ATME.

(205) The Parties agreed not to continue the ICG, but rather to continue to work on related matters in the context of the ATME on management of ship-borne tourism in Antarctica in Wellington.

(206) IAATO noted that while it had participated in the early stages of the ICG, it did not necessarily agree with the conclusions.

(207) Chile introduced WP 54 *The effect of marathons held on the Antarctic continent*, reiterating that the steady increase of large scale activities such as marathons on the Antarctic continent is disruptive to the function of scientists and other station activities in addition to posing a hazard to both tourists and the Antarctic environment. Chile noted that in its view these activities are not currently subject to international regulation, pose a difficulty for regulators in obtaining the proper documentation and may violate the terms of Resolution 4 (2007). Chile requested the ATCM to express views on holding large-scale adventure activities on land in Antarctica and to define measures to restrict or control such events.

(208) Many Parties thanked Chile for this work and agreed with the assertion that marathon activities are problematic. Some Parties and ASOC advocated strict regulation of adventure activities in Antarctica, noting that priority should

be given to tourism focusing on educational enrichment and respect for the environment.

(209) Other Parties felt the current mechanisms for regulation, including environmental impact assessments, are sufficient.

(210) It was noted that competent authorities of certain Parties may have difficulties with making decisions on the question of whether certain specific types of tourist activities should be authorised and that the discussion as proposed by Chile would therefore be of high value.

(211) ASOC noted that there was considerable information available on the world wide web about Antarctic marathons. ASOC expressed its opinion that Antarctic tourism should primarily be based on appreciation of Antarctic values rather than activity based, and noted that marathons were one of the activities that were not focused on the intrinsic values of Antarctica and that could therefore be carried out anywhere else.

(212) The US felt proper planning of marathon activities as well as regulation from responsible national authorities would address the concerns raised in this paper regarding management and self-sufficiency. Further, proper planning will also ensure that scientific schedules and activities are not disrupted. The US noted that for the two marathon activities carried out by US operators the US requires and has received environmental impact assessment documentation.

(213) The ATCM established an Intersessional Contact Group on this matter with the objective of presenting a draft document and resolution to the ATCM in 2010.

(214) The ICG on Regulation of marathons and large-scale sporting events has the following terms of reference:

- Conduct an analysis of the management of large-scale sporting and marathon running events.
- Study where any additional regulations are required to address regulating the tourist activities mentioned above, with particular reference to site-specific instruments.
- Noting Resolution 3 (2004), to consider whether additional procedures for prior communication and exchange of information between Parties are needed.

(215) All ATCPs are invited to participate, as are COMNAP, IAATO, and ASOC. The ICG will hold internet-based discussions through the website of the

Secretariat and will be led by Chile. The group will present a report at the next ATCM. The US noted IAATO has drafted guidelines for marathons that would be useful to review by the ICG.

(216) Some Parties supported the terms of reference (TORs) for the ICG on Regulation of Large-Scale or Special Tourist Activities originally tabled by Chile. They could only accept the revised TORs in a spirit of compromise and to give this very important work a start. These countries pointed out that the very limited scope of the TORs would not cover all extreme activities and neglects environmental impacts, possible disruptions to stations and scientific programmes as well as safety issues. They underlined their concern on the postponement of important work that has already been postponed for years.

iii. Antarctic Treaty Meeting of Experts

(217) New Zealand introduced WP 30 *Antarctic Treaty Meeting of Experts on the Management of Ship-borne Tourism in the Antarctic Treaty Area*, noting that Parties had expressed concern about humanitarian and environmental risks associated with the increase of ship-borne tourism and the recent incidents that occurred in Antarctic waters. New Zealand noted its offer to host a Meeting of Experts on this topic had first been made at ATCM XXXI in Kyiv and had been welcomed by the Parties. New Zealand expressed that, in its view, further regulation was required for the safety of passengers and the protection of the Antarctic environment, and proposed to host an Antarctic Treaty Meeting of Experts (ATME) on the Management of Ship-borne Tourism in the Antarctic Treaty Area in Wellington from 9–11 December 2009. The goal of the meeting would be to accelerate consideration of the issues associated with ship-borne tourism, so that useful recommendations could be provided to ATCM XXXIII. The Parties thanked New Zealand for its offer to host the ATME and adopted Decision 7 (2009) (see Part II, section 2, page 259).

iv. Tourism and Shipping Safety

(218) The Working Groups of Tourism and Non-governmental Activities and Operational Matters met jointly to consider issues of common concern, including issues relating to tourism and shipping safety in Antarctica.

(219) The Parties discussed IP 120 *Report by Liberia on Sinking of MS Explorer* (Belgium), which contains the Republic of Liberia's Report of Investigation in the Matter of Sinking of Passenger Vessel *Explorer* on November 23,

2007 (report dated March 26, 2009). Michael Davies-Sekle, Vice President for Marine Investigations of the Liberian International Ship & Corporate Registry, was invited by the Meeting to present the Liberian report during an informal session. During this session he described the conclusions and recommendations in the report.

(220) While many delegations noted that the Liberian report had been issued only the week before and was still being studied, some delegations did make comments. Parties noted that the report underscored the point of how close the *M/S Explorer* accident came to being a greater tragedy, which was very narrowly avoided by the calm weather and the actions of the crew. It was recognised that the report identified a series of serious shortcomings and gaps.

(221) The Meeting expressed considerable concern related to the sinking of *M/S Explorer* and other recent ship incidents, and considered it important to focus on efforts to ensure the safety of passengers on tour vessels. Many delegations expressed appreciation for the report, found it valuable, and welcomed the fact that the report would be formally presented to the IMO for detailed discussion of its recommendations.

(222) Australia noted that it regarded the *M/S Explorer* sinking with grave concern, and that the report by Liberia highlighted a number of conclusions and recommendations worthy of close consideration by Treaty Parties, collectively and individually, and by those who operate and charter vessels for work in Antarctic waters. For its part, Australia noted that it would be raising these issues with Australian vessel operators and with companies that it authorises to conduct ship-based tourism. Australia felt that the report lent further impetus to the work of the Parties on these issues, in the ATCM and within the IMO, and reinforced the need for coordinated effort among the Parties when Antarctic related initiatives are being taken forward in IMO.

(223) Argentina stated that it was struck by Liberia's statements under the heading "Rescue Coordination" (page 70 of the report), when in all the recent cases in which there were vessel alert calls, the Argentine MRCC's intervention has always been timely and unconditional having effectively carried out all the necessary coordination tasks for the search and rescue and the safeguard of human life. These cases have been the subject of acknowledgement by Parties, including in respect of the *M/S Explorer* incident.

(224) Argentina also expressed surprise and concern that the flag state appeared to seek to limit its responsibilities, when in fact the vessel did not have

an Ice Master on board and the vessel captain publicly acknowledged his inexperience in Antarctic waters. Regarding the procedures that are referred to in Liberia's report, Argentina also noted that there are clear IMO provisions which establish the joint responsibility and coordination between Argentina and Chile in the area of the incident.

(225) Argentina and Chile have been steadily working together in the provision of SAR services in the Antarctic Peninsula area with very positive results. An example of this is the ongoing work by the Combined Antarctic Naval Patrols for over ten years, which has recently extended its operating season. Argentina further noted that page 40 of the Liberian report lacks any reference to the technical and scientific activities conducted by Argentina in the area of the *M/S Explorer* wreckage. These were duly presented to ATCM XXXI (Kyiv, 2008) in IP 130.

(226) In response to a Party's enquiry, Argentina provided additional information on the amount of fuel and lubricants that the *M/S Explorer* carried on board at the time of sinking.

(227) Finally, Argentina stated its concern that it had not been included among the Parties that had initially received the report presented by Liberia and rejected several specific references contained in the report.

(228) Chile expressed surprise with the introduction into the Liberian report of all the elements of the preliminary investigation carried out by Chile and the extensive correspondence and assistance provided by Chile to the flag state in order to make feasible and credible their report to the IMO, without any acknowledgement. Chile agreed with the statement by Argentina, including its assessment of the lack of any real recognition of the obligations and duties of a flag state under international law.

(229) IAATO stated that for all those involved in Antarctic shipping operations – especially passenger shipping operations – the *Decision of the Commissioner of Maritime Affairs and the Report of Investigation in the Matter of Sinking of Passenger Vessel Explorer* make for very sober reading. It stated that when serious incidents such as this occur, the industry cannot deal with speculation but needs facts to ensure that appropriate amendments in both technological and operational practices and requirements can be achieved. And so, while in the absence of a report IAATO is pleased with the progress that has been made since the *M/S Explorer* incident – particularly in terms of improving response actions and in vessel tracking – the recent arrival of the report is a welcome and, indeed, crucial source of information on

which to base further decisions and actions. It further noted that the facts, conclusions and recommendations of the report will be pivotal in discussions with ship owners, vessel operators, flag states, classification societies and national authorities and that IAATO will take steps to initiate, facilitate and take part in these discussions as appropriate. IAATO would note that many of the conclusions and recommendations will require careful deliberation from a number of international bodies. For example, IAATO would suggest that, should the justification for a new work item in the IMO to develop a mandatory polar shipping code be accepted, this would be a valid place for several of these recommendations. In the interim, however, IAATO's Marine Committee will be studying the report carefully to assess what specific advice can be put in place as industry best practice prior to the 2009–10 season – for example, through consideration of recommendations 6, 7 and 11 of the Liberia Report, as appropriate. These will be discussed during IAATO's next Annual Meeting in June of this year and IAATO will keep Treaty Parties fully informed of those recommendations that IAATO is in a position to implement.

(230) Several Parties commented that the sinking of the *M/S Explorer* was an extraordinary event that drew a lot of attention and prompted renewed discussion of the need to promote safety and environmental protection in Antarctica.

(231) The United States introduced WP 16 *Lifeboats on Antarctic Tourist Vessels*. The Meeting generally welcomed the proposal recommending Parties cooperate in taking action within the International Maritime Organization to require, with respect to ships undertaking tourist activities in the Antarctic Treaty area, the carriage of sufficient and suitable lifeboats for all passengers and crew, and to ensure those lifeboats were outfitted with equipment to facilitate timely search and rescue. The Meeting generally supported the initiative to advance the safety of vessels operating in Antarctic waters, and acknowledged the ongoing work of the International Maritime Organization in that regard. The Meeting agreed that the US proposal be redrafted to recommend the Chair of ATCM XXXII write to the International Maritime Organization indicating support for those activities.

(232) The Meeting adopted Resolution 8 (2009) (see Part II, section 3, page 287) and agreed that the letter from the Chair of ATCM XXXII to the International Maritime Organization will welcome the recent work of the Sub-committee on Design and Equipment to develop Guidelines for Ships Operating in Polar Waters, and express the Parties desire that these guidelines be adopted by

the International Maritime Organization at their Assembly meeting later this year. In addition, the letter will express the desire of the Antarctic Treaty Parties that the International Maritime Organization commence work as soon as practicable to develop mandatory requirements for ships operating in Antarctic waters, which would include *inter alia* matters relating to vessel design, construction, manning and equipment, including survival craft and lifesaving equipment, taking particular note of the types of vessels, especially passenger vessels, operating in Antarctica.

(233) Parties also emphasised the original intent of WP 16, which proposed that the IMO require lifeboats on passenger vessels in Antarctic waters be adequate to the degree of risk faced by passengers and crew in the event of an accident. Parties welcomed the recent IMO Sub-committee on Design and Equipment's decision that only partially or fully enclosed lifeboats are appropriate for Antarctic waters.

(234) IAATO briefly introduced IP 88 *Survival Craft on Passenger Vessels: An Overview*, which provided background on various types of survival craft currently in use on board passenger vessels. IAATO noted that it welcomed the decision by the ATCM to support IMO's possible efforts to prepare a mandatory polar code, which it felt would be a useful and important tool for advancing safety.

Item 12: Inspections under the Antarctic Treaty and the Environment Protocol

(235) Argentina presented WP 37 *Report of the Intersessional Contact Group on the revision of List A "Permanent Antarctic Stations and Associated Installations" appended to Resolution 5 (1995)*. Argentina noted that, despite a very brief intersessional period, the group had made significant progress.

(236) Argentina was thanked for leading the work and it was agreed the checklist is a useful tool to facilitate inspections for both the inspectors and those being inspected. The ATCM agreed to extend the ICG work until the next ATCM in 2010.

(237) Noting their appreciation for being involved in this ICG, COMNAP proposed the use of standard terminology and the availability of example answers to the checklist questions which will facilitate inspection effectiveness and communications.

(238) Many Parties thanked the Secretariat for making available previous inspection reports in the Antarctic Treaty Secretariat's website. Some Parties reminded the Meeting that, while the checklist is an important mechanism to prepare and guide the inspections, it should not replace or overshadow the onsite discussions and observations, which comprise the focal point of the inspections.

(239) Norway introduced IP 96 *Inspection undertaken by Norway in accordance with Article VII of the Antarctic Treaty*. Norway informed the Meeting that in February 2009 it undertook inspections on Princess Elisabeth Antarctica Station (71°57'S, 23°20'E), Halley Station (75°35'S, 26°34'W) and Novolazarevskaya Airbase (70°49'S, 11°37'E). Thanking the inspected stations for their assistance, Norway noted the report from the inspection is still being compiled, and a full report of the findings will be circulated to the Antarctic Treaty Parties before ATCM XXXIII.

(240) Japan informed the Parties of its intention to undertake its first inspection in the near future, as it indicated at ATCM XXXI. It also mentioned that previous inspection reports in the ATS website were very helpful in planning this inspection.

Item 13: Science issues, including climate-related research, scientific cooperation and facilitation

Climate Change

(241) SCAR introduced IP 5 SCAR's *Antarctic Climate Change and the Environment (ACCE) review report*, noting that the effects of increased greenhouse gases were already evident. SCAR summarised a variety of scientific research conducted in Antarctica pointing to atmospheric and marine warming and consequences for terrestrial and marine physical and biological environments. Effects could be expected to increase, given the expected further increase in greenhouse gases over the next century. SCAR showed how the latest numerical models project change into the future and proposed to bring back to the ATCM annual updates on the state of the climate and environment. Highlights of the review include:

- that current annual ice loss in west Antarctica is the same as is being lost annually from Greenland, causing an increase in the rate of rise of sea level;

- that increased efforts are required to understand the mechanism for this ice loss, so as to improve forecasts of future change;
- that the Southern Ocean is now taking up less CO_2 from the atmosphere, which means that the atmosphere is likely to warm faster than expected;
- that acidification of the ocean has profound implications for the marine ecosystem of the Southern Ocean.

(242) SCAR recommended the Parties to:

- take note of the latest scientific findings and notify SCAR on the latest research results from National Antarctic Programs;
- support and foster research on Antarctic climate change focusing on those aspects that are least understood;
- support research on the distribution of terrestrial species and the geographical distribution of genetic diversity, especially in rapidly warming areas, and areas that seem prone to an elevated risk of biological invasion owing to climate change; and
- assess the contributions that their Antarctic operations make to global warming with particular regard to greenhouse gas emissions and adopt suitable mitigating protocols commensurate with the potential for impact.

(243) SCAR was thanked for this excellent work and its recommendations. It was noted this effort is only possible through international cooperation supporting the collection and maintenance of long term data sets.

(244) ASOC presented IP 35 *Policy implications arising from SCAR's report: Antarctic climate change and the environment,* which it had previously introduced in the CEP. ASOC urged Parties to consider the implications and asked Parties to take concrete action at the local and regional levels in Antarctica to help mitigate the effects of Antarctic climate change by:

- supporting global reductions in carbon emissions and an equitable, effective, and science-based agreement at the United Nations Climate Change Conference in Copenhagen in December 2009;
- putting in place consistently strong measures to prevent the establishment of invasive species; and
- applying a precautionary approach to the conservation of marine living resources through the use of Marine Protected Areas and reductions in non-climate stresses, such as exploitation, invasive species, and pollution.

(245) Argentina introduced IP 83 *Continuous data collection and long-term monitoring as an integral part of the Antarctic scientific programs*, highlighting the importance and the special status of long term monitoring activities. Argentina noted that this activity is generally financed by national programmes and suggested that the ATCM recognise the importance of this work and encourage national programmes to continue investing in long-term monitoring.

(246) Argentina also presented IP 85 *Antarctic scientific research projects developed in Argentina in 2008*, which provides a list of scientific projects for 2008–2011. These activities are organised in two groups: research projects and scientific-technological actions.

(247) Japan introduced IP 94 *Japan's Antarctic research program and its future*. Japan's main activities in 2008–2009 were: cooperation with Australia and Sweden, observations on atmospheric aerosols and greenhouse gases, and experimental airborne observation. For the first time a Japanese researcher led an international polar research project, with eleven proposals under its umbrella including projects from Belgium, Canada and Spain. Japan also briefly described its planned activities for 2010–15.

(248) Japan presented IP 89 *Asian Forum for Polar Sciences (AFoPS) Report to XXXII ATCM*, describing the outcome of the 9th AFoPS Delegates Meeting held in September 2008 in Incheon, Republic of Korea. AFoPS, which aims to encourage non-polar Asian countries to work together on polar research, now has five member states and several observers. Apart from the work of the five AFoPS working groups (on Earth Science, Life Science, Planetary Science, Engineering and Logistics, and Public Relations and Data Management), workshops have been held. A session titled Recent Advances in Polar Sciences and Global Warming was organised by AFoPS scientists of the Asia Oceania Geoscience Society (AOGS) held in Busan, Republic of Korea, in June 2008. Further information can be found at *www.afops.org*.

(249) China, India and the Republic of Korea congratulated Japan for its achievements as Chair of AFoPS.

(250) Bulgaria presented IP 28 *Southern dimension for polar research*, highlighting ongoing steps for strengthening cooperation between south and south-eastern European countries with well developed polar programmes and other Southern EU countries through exchange of information, workshops and open lectures for young people and a broad audience. Bulgaria stressed that collaboration between scientific communities, laboratories and logistic

facilities in the realisation of the EUROPOLAR ERA-NET Polar CLIMATE project will be the most important goal for the near future.

(251) The Russian Federation presented IP 43 *Results of Russian activities in the deep ice borehole at Vostok station in implementing the project of penetration to the water layer of the subglacial lake in the season of 2008/2009*, informing the Meeting about an unsuccessful attempt to retrieve a 13 metre-long drill that was left in the lower part of the Vostok borehole in 2007. After several failed attempts to bring the damaged drill back to the surface by slightly enlarging the bore hole, melting the ice around the drill bit with antifreeze, and attempting to hook its protrusions with a special device manufactured in St. Petersburg so that it could be pulled out, the Russian Federation decided to redirect the borehole starting from the depth of 3,589m. This would allow it to by-pass the damaged drill at a distance of 1–1,5 metres. By the end of this season, this redirected borehole reached the depth of 3,598m. This makes it possible to continue studies of interesting mineral inclusions discovered in the ice core from the original borehole.

(252) The Russian Federation also noted that as a consequence of the drill accident, the final CEE on penetration to the water layer of Lake Vostok needed further changes and was not ready in time for submission to ATCM XXXII.

(253) The Russian Federation drew the Parties' attention to IP 44 *Preliminary results of the Russian studies in the Antarctic under the IPY 2007/2008 Program Russian Federation* and IP 45 *Russian research in the Antarctic in 2008*, which provide details of its participation in IPY and its national programme's research in 2008.

(254) The Republic of Korea introduced IP 25 *Scientific and science-related collaborations with other Parties during 2008–2009*, noting that during the last year, Korea cooperated on various projects with the United States, China, Poland, Argentina, Ukraine and Germany. Korea also informed the Meeting about the upcoming 16th Symposium on Polar Sciences which will be held on 10–12 June 2009 and will be focused on the Korean icebreaker *Araon*.

(255) Romania drew the attention of the Parties to IP 74 *Romania participation in IPY 2007–2008*, which contains details of Romanian research in the IPY, and introduced IP 75 *Central and south-eastern Europe cooperation in polar research*, presenting a regional action plan of polar research cooperation between the states in central and south-eastern Europe.

(256) Romania also presented IP 77 *Results of the Romanian scientific Antarctic activities in Larsemann Hills*, describing cooperation with several Parties,

participation in SCAR's Open Science conference, a symposium in Bucharest and other activities in which Romania was involved.

(257) India introduced IP 22 *Indian IPY activities*, which describes its outreach to school children, the general public and the scientific community about polar research. India also presented IP 49 *India's Antarctic science programme 2008–09*, providing details on the research activities carried out by India during the last year. These included projects on atmospheric sciences, meteorology and climate change, earth science and glaciology, biology, human physiology and medicine. India included four students in its programme to make them aware of the challenges of Antarctic research.

(258) Chile presented IP 107 *Chilean programme for scientific and technological research in Antarctica*. The programme includes projects which the Chilean Antarctic Institute finances and executes, either directly or by supporting other research. Projects are funded through a competitive process. The programme is organised into four main areas of research: relationships between South America and Antarctica, global warming and climate evolution, abundance and diversity of Antarctic organisms, and the Antarctic environment and its bioresources. The purpose of the programme is to produce high-quality research worthy of international recognition.

(259) Chile also informed the Parties of an unfortunate fire that had affected the gym at Presidente Eduardo Frei Montalva Base in the Fildes Peninsula over the Easter weekend. No one was injured in the fire.

(260) Ecuador expressed its solidarity with Chile and its hope that all activities necessary to rebuild will be carried out. It introduced IP 98 *I Simposio Ecuatoriano de Ciencia Polar, 2008*, which outlines Ecuador's polar scientific activities and dissemination of the results. It highlighted its participation with six other South American countries in the Brazil-led census of Antarctic marine life, which it characterised as an excellent example of international cooperation. Last year, Ecuador hosted its first symposium on its polar science activities, with the participation of Argentina, Brazil and Chile. At the symposium, Ecuador presented its research on a variety of subjects including ice melt, environmental modelling, biology, giant petrels, humpback whales, chemical geology, and robotics, among others. Ecuador also cooperated with Malaysia on a project near Pedro Maldonado Station.

(261) China introduced IP 40 *Brief introduction on the third Chinese National Arctic Marine Survey – IPY China programme*. The Third Chinese National

Arctic Marine Survey is an important part of the IPY China Programme. The first survey was in 1999 and the second in 2003. The third survey was carried out by *R/V Xuelong* from 11 July to 25 September 2008. The third survey took 76 days and covered 12,000 nautical miles. 122 people were involved in the third survey, including twelve foreign scientists from France, Finland, Japan, Korea and the United States. The third survey conducted field marine investigations at 132 sites, as well as combined long-term sea-ice atmospheric observation and short-term sea ice investigation at eight sites in the Bering Sea, the Chukchi Sea, the Chukchi Platform, and the Canadian Basin.

(262) The SCAR lecture was presented by Prof. Dr Karin Lochte, Director of the Alfred Wegener Institute (AWI) on the topic of *Marine Life and Change in the Southern Ocean*, submitted as IP 71. An abstract is available in Volume 2, Part IV, section 1 of this report. The lecture reiterated the key themes of the effects on the ecosystem of warming, acidification and invasive species. The slides from the lecture will be available from the SCAR website *www.scar.org*.

(263) The Meeting congratulated Professor Lochte on an excellent lecture and expressed satisfaction at the amount of marine scientific research being conducted by Parties, noting how little is actually known about the deep sea around Antarctica.

(264) The following papers submitted under this agenda item were not introduced and were taken as read:

- IP 7 *SCAR's role in the Antarctic Treaty system*;
- IP 24 *Science supported by Antarctica New Zealand 2008/2009*;
- IP 41 *Marine Protected Areas in the Antarctic*;
- IP 48 rev. 1 *A Ross Sea MPA: Preservation for science*;
- IP 52 *Protecting the Antarctic Marine Ecosystem: A role for the ATCM*;
- IP 57 *Australia's Antarctic scientific research program 2008/09*;
- IP 63 *Ukraine in Antarctica: Second decade of research*;
- IP 64 *Ukrainian Antarctic research for 2008–2009 summer season*;
- IP 69 *Persistent organic pollutants in the Antarctic*;
- IP 92 *South American Network on Antarctic Marine Biodiversity (BioMAntar) and South American Consortium for the Census of Antarctic Marine Life (LA CAML): an update*;

- IP 100 *Two new Antarctic Related National Institutes recently established in Brazil*; and
- IP 113 *The Czech research activities on the James Ross Island and Antarctic Peninsula in 2008/09.*

Item 14: Operational Issues

(265) The Executive Secretary presented SP 7 rev. 1 *Measures on operational matters*, providing a summary analysis of ATCM recommendations (Recommendations, Measures, Decisions and Resolutions) on operational matters. They have been classified under the following topics: logistics, search and rescue, telecommunications, meteorology, sitting of stations, aircraft, hydrography, fuel storage and handling, contingency planning, and shipping regulations. Given the large amount of obsolete recommendations and measures found in the ATCM historical records, the Executive Secretary proposed a full review of these measures and suggested COMNAP, WMO and IMO should be consulted on this revision.

(266) ATCM Parties and COMNAP thanked the Secretariat for this paper which provides useful background information for the work on review of the status of recommendations and measures under Agenda Item 5. The Meeting considered the need for simplification to be very important, particularly when legal matters are concerned, in order to simplify the practical use.

(267) COMNAP noted the importance and value for all National Antarctic Programs of having a very clear view of their obligations in relation to these recommendations and noted it would continue analysing the technical parts so as to help National Antarctic Programs. COMNAP further suggested the proposed glossary of terms for the inspection checklist would also be helpful in conjunction with these activities.

(268) The Meeting stressed the importance of completing the ongoing work on the review of the status of Recommendations and Measures and agreed that the topic covered by SP 7 should be added to the existing programme of work under Item 5. ATCM XXXIII will give further consideration to SP 7 as well as SP 6 and decide how to proceed.

(269) While introducing IP 114 *Neumayer Station III Completion of construction and start of pilot operation in February 2009*, Germany presented a short movie showing the whole construction process of the new Neumayer station. After two years, the new base is now completed and in service. Its

construction was Germany's most technically and logistically challenging project during the International Polar Year.

(270) A major scientific objective is to maintain and to further develop long term observations in meteorology, air chemistry and geophysics. This data set will continually foster international networks. This is in line with the requirement to sustain long term observing systems as a legacy of the IPY.

(271) The Meeting congratulated Germany for its outstanding results and wished Germany all the best for the Neumayer station. The construction of the new Neumayer station is a dazzling legacy of the IPY.

(272) At a side event, Belgium presented its new Princess Elisabeth Research Station, the first polar research station operating without emitting greenhouse gases. The building of the station was the result of a public-private partnership. The intention of full scientific cooperation with partners and base-sharing was underlined by Belgium. The base has also allowed the raising of considerable awareness among the Belgian public on environmental and scientific issues relating to Antarctica.

(273) The Republic of Korea introduced IP 26 rev. 1 *Promotion of environmental management at King Sejong Station*, describing reforms undertaken at King Sejong to meet environmental standards and install energy saving facilities. The Republic of Korea expressed its hope that, in the future, King Sejong Station can serve as a centre for international collaboration on King George Island.

(274) China introduced IP 39 *Brief report on the construction of Kunlun Station on Dome A in the Antarctic*. China informed the Meeting that the construction finished on 27 January 2009. The measures for environmental protection in the CEE were followed. A few scientific observations were made. The second phase of the construction will take place during the 2009–2010 season. After the completion of the construction, the station will have lodging facilities for up to 20 people during the summer.

(275) China expressed its hope that, at a future ATCM, it would be able to present a detailed report on the building process along the lines of Germany's report on Neumayer III.

(276) Several Parties congratulated China for its tremendous work in constructing an inland station and looked forward to seeing the construction works completed and the research projects started at Kunlun station.

(277) The following papers submitted under this agenda item were taken as read:

- IP 2 *Impacts of local human activities on the Antarctic environment: A review (ASOC)*;
- IP 99 *The new Brazilian vessel (Brazil)*; and
- IP 109 *Fotoprotección contra los rayos ultravioleta (UV) (Ecuador)*.

Item 15: Education Issues

(278) The Republic of Korea presented IP 27 *A Korean public awareness program: "Pole-to-Pole Korea" (2008–2009)*, giving a brief description of activities organised by the Korea Polar Research Institute (KOPRI) to raise public awareness of polar scientific research, disseminate the science-oriented culture, and promote the pioneering spirit. Korea also thanked Chile, China and the Russian Federation for their support.

(279) Chile presented IP 93 *Educational initiatives of the Chilean Antarctic Institute: Promoting Antarctic science among youth*, describing two initiatives of the Chilean Antarctic Institute (INACH) to promote knowledge of Antarctica amongst Chilean citizens: the establishment of the Antarctic High School Fair and the Programme of Postgraduate Study Grants for Antarctic Research.

(280) Chile also introduced IP 117 *Launch of postmarked stamp issue: "Preserving the polar regions and glaciers"* jointly submitted by Chile and Finland. Chile detailed that the stamps, simultaneously issued in March 2009, reflect both countries' concern for climate change and its effects on the polar regions.

(281) Chile also presented IP 108 *Exposición filatélica ExpoAntártica Chile 2009 – Lanzamiento y matasellado alusivo al sello postal de la exhibición*, informing the Meeting on Chile's stamps exhibition, which brought together stamps collectors from all over the world. This was the first such exhibition to be inaugurated in the Antarctic continent in commemoration of the 50th anniversary of the Antarctic Treaty.

(282) Ecuador introduced IP 110 V *Simposio Latinoamericano sobre Investigaciones Antárticas y II Simposio Ecuatoriano de Ciencia Polar (2–4 Septiembre de 2009)*, informing the Meeting on the organisation of the V Latin American Symposium on Antarctic Research and the II Ecuadorian Symposium on Polar Science to be held in La Libertad, Ecuador, 2–4 September 2009. The former symposium will focus on Latin America, but Parties from any region

are welcome to participate. Further information on the symposia can be found on the Ecuadorean Antarctic Institute's website: *www.inae.gov.ec*.

Item 16: Exchange of Information

(283) The Secretariat introduced SP 8 *Electronic Information Exchange System: A report on the first operational season*. The Executive Secretary described the productive use of the Electronic Information Exchange System made by many Parties but expressed concern that, even though information exchange under the Treaty is a legal obligation for all Parties, as of 1 March 2009, only 12 of the 28 Consultative Parties had supplied preseason information for 2008/09 in any form.

(284) The Executive Secretary then mentioned requests received from some Parties for more importing tools and for changes in the procedures in some forms, noting that most of those requests were technically feasible to implement. He also noted that other proposals could only be carried out by amending the Information Exchange requirements through a Decision.

(285) The Meeting was reminded of the continuing work by the Treaty and COMNAP Secretariats to coordinate their electronic information exchange systems to avoid duplication and make it easier for all to have access to consistent, up to date information. COMNAP demonstrated how it was now possible for Parties to import into the EIES the station information already maintained by their National Program on the COMNAP web site. The information could be edited at any time after import and Parties retain full control over their information. This import possibility was presently limited to information on stations and would be extended to other types of information.

(286) Several Parties thanked the Secretariat and COMNAP for the presentation and recognised the benefit of avoiding duplication when submitting information.

(287) Argentina expressed its appreciation for the information provided by the Secretariat and COMNAP on the EIES. It pointed out, however, its concern regarding the type of information that might be imported into the EIES database.

(288) Furthermore, Argentina made the following statement: "As per certain incorrect references regarding toponomy and other matters related to the legal territorial status of the Malvinas, South Georgias and South Sandwich

Islands and the surrounding maritime areas, as shown on maps distributed at the ATCM, as well as regarding references to an alleged ship registry operated by the alleged authorities of those islands, the Argentine Republic rejects such cartography and the references to the such ship registry. The Malvinas, South Georgias and South Sandwich Islands and the surrounding maritime areas are an integral part of the Argentine National territory, and being under illegal British occupation, are the object of a sovereignty dispute between the Argentine Republic and the United Kingdom recognised by the international community."

(289) In response, the United Kingdom stated that it had no doubt about its sovereignty over the Falkland Islands, South Georgia and the South Sandwich Islands and their surrounding maritime areas, as is well known to all delegates. In that regard, the United Kingdom has no doubt about the right of the government of the Falkland Islands to operate a shipping register for UK-flagged vessels.

(290) Argentina rejected the statement by the United Kingdom and reiterated its well known legal position.

Item 17: Biological Prospecting in Antarctica

(291) Australia and New Zealand introduced WP 18 *Regulation of biological prospecting under the Antarctic Treaty system* which described the current controls over Antarctic biological prospecting and recommended that the ATCM adopt a Resolution noting that the Antarctic Treaty system was the appropriate framework for governing biological prospecting in Antarctica and highlighting the existing regulatory arrangements.

(292) The Meeting expressed support for a Resolution on the subject of bioprospecting in the Antarctic Treaty area. A large number of amendments were proposed to the original text, including several additions of new concepts. Following further considerations in an informal open-ended contact group chaired by Australia, the Meeting agreed to adopt Resolution 9 (2009) (Part II, section 3, page 289).

(293) Some Parties suggested that the Consultative Parties that are also members of CCAMLR submit a similar resolution for adoption by CCAMLR at its next meeting.

(294) Belgium, on behalf of eight Parties, introduced WP 1 *The Antarctic biological prospecting database*, recording that the database had grown significantly

to contain 187 records relating to bioprospecting conducted by 27 countries and obtained from publicly accessible sources. It welcomed information submitted by Argentina and Brazil, noting they were the only two Parties to have submitted information requested in Resolution 7 (2005). Several delegations commented on the value of the database in helping guide discussions, and its usefulness in gathering information scattered in various sources. Some Parties noted the profusion of databases and the need to centralise appropriate data.

(295) Belgium commented that, of the five recommendations in the paper, the principal one was the proposal to use the Electronic Information Exchange System (EIES) to collect information. Some Parties noted there was a need to define more clearly exactly what information this database should contain, and Belgium provided illustrative examples. The Meeting noted that information on biological prospecting activities that would be maintained by the Secretariat should be submitted only by Treaty Parties. In response to a question on cost, the Executive Secretary said it could at a low cost include such information in the existing EIES. In response to a question on whether it could collate such information through the annual reports of its members, SCAR questioned whether it was the most appropriate channel. It was suggested that the ATCM could request the submission of such information through the Annual Exchange of Information. If that were agreed, a Decision would have to be adopted on revising the information exchange requirements.

(296) The Netherlands, on behalf of eight Parties, introduced WP 26 *A gap analysis of the Antarctic Treaty System regarding the management of biological prospecting*, which launched a discussion on whether to regulate biological prospecting under the Antarctic Treaty system. The paper suggested that the ATS should be proactive in addressing regulation of Antarctic genetic resources in the area south of the CCAMLR boundary. The Netherlands argued that access to *in situ* and *ex situ* Antarctic genetic resources should be free, subject to relevant provisions of the Antarctic Treaty and its Protocol on Environmental Protection and of CCAMLR, and that appropriate sharing of benefits of Antarctic genetic resources, other than the exchange of scientific observations and results, should be considered.

(297) Chile introduced WP 49 rev. 2 *Bioprospection: Baselines and parameters* providing a basic analysis and history of consideration of bioprospecting within the context of the Antarctic Treaty system, and referencing the role of Antarctic institutions (ATCM, SCAR, CEP, COMNAP and CCAMLR). It further addressed the elements of a possible regime for bioprospecting

including its scope, the issue of entitlement, and external contributions to an Antarctic regime.

(298) The Russian Federation introduced IP 46 *Microbiological monitoring of the expedition infrastructure facilities in the Antarctic*. The paper drew attention to the discovery of the pathogenic non-endemic types of bacteria inside the reactivated Russian Antarctic field bases which had not been visited for nearly 20 years. Apart from a unique scientific significance this fact also served as evidence of potential threats to the lives of Antarctic expeditions personnel.

(299) SCAR introduced IP 65 *Biological prospecting in the Antarctic: An update on the review by SCAR*. At the request of ATCM XXXI, SCAR had commenced a review of published research on biological prospecting in the Antarctic and submitted a questionnaire to its members. SCAR noted the difficulty in identifying biological prospecting activities within the scientific literature. As a result of this and a delay by its members in responding to the questionnaire, SCAR required additional time to complete its review. It requested that Parties encourage their researchers and bioprospecting communities to respond to the questionnaire in a timely and detailed manner.

(300) Sweden, on behalf of six Parties, presented IP 70 *Concepts, Terms and Definitions, including a Comparative Analysis (Biological Prospecting)*. The paper explored definitions used, or proposed, particularly in the context of the Convention on Biological Diversity. It suggested that despite difficulties in defining terms it was possible, e.g. in the context of the ecosystem approach used by CCAMLR, to move forward with implementation and practical work before official definitions were agreed upon.

(301) UNEP introduced IP 91 *Biological Prospecting: An update on recent policy developments at the international level*, noting in particular developments within the framework of the Convention on Biological Diversity relating to the current elaboration of an international regime on access and benefit sharing, United Nations General Assembly work relating to marine genetic resources and the International Treaty on Plant Genetic Resources for Food and Agriculture.

(302) Argentina introduced IP 84 *Update on the activities of the Argentine Antarctic Program on Bioprospecting and Bioremediation in Antarctica*, describing activities carried out by the Microbiology group of the Argentine Antarctic Institute during the last three years.

(303) Brazil introduced IP 115 *Bioprospecting activities of Brazil in Antarctica: a short report following Resolution 7 (2005)*, offering Brazil's view that

regulation of biological prospecting should continue under the Antarctic Treaty system and be encouraged, especially with respect to cooperation and information exchange. Brazil encouraged other Parties to comply with Resolution 7 (2005).

(304) The Meeting expressed its appreciation of the various papers that were presented in support of discussion on biological prospecting.

(305) The Netherlands stated that the collection of biological material in the Antarctic Treaty area should remain unhindered, if the applicable provisions of the Antarctic Treaty system to access such material were complied with. It also expressed the view that biological material following its collection should be made freely available in accordance with Article III of the Antarctic Treaty.

(306) Some Parties observed that the Antarctic Treaty system provides a proper and sufficient framework for dealing with the matter of biological prospecting with a focus on protecting the Antarctic environment. It was underscored further how, consistent with Article III of the Antarctic Treaty, the exchange of scientific information must take pragmatic cognizance of what is both feasible and practical. It was noted that access to genetic resources is already open to the Parties. It was pointed out that any regulation of the collection of biological material should not proceed in a manner that would discourage scientific ingenuity and innovation in developing products which may be beneficial for people.

(307) It was observed that the patenting process was a complicated topic which, while not discussed in any detail at this Meeting, pertained to value added in areas of national jurisdiction and did not confer exclusive use of or exploitation rights over organisms which would still be available for use by the global scientific community. Others argued, however, that scientific observations and results may no longer be freely available or usable when controlled by a patent or some other means. The point was also made that naturally occurring genomes should not be patentable.

(308) The view was expressed that regulation of access to biological material was a complex matter which required further consideration, which should be guided by the Antarctic Treaty including Article IV, while taking into account the United Nations Convention on the Law of the Sea, other applicable international instruments and domestic law. It was also suggested that the International Treaty on Plant Genetic Resources for Food and Agriculture could provide useful guidance for the future consideration of the matter of bioprospecting.

(309) The Meeting emphasised that the issue of genetic resources, given the unique juridical circumstances of Antarctica, needed to be considered carefully and that further regulation, if deemed necessary by the Parties, should be developed under the Antarctic Treaty system.

(310) A number of Parties were of the view that progress had been achieved in the discussions on benefit sharing of genetic resources in other international fora. They therefore expressed the view that there was an urgent need for the ATCM to be pro-active in considering the sharing of monetary and non-monetary benefits in the context of the Antarctic Treaty system in light of those discussions.

(311) Other Parties pointed out that such progress was of a limited nature, if any, and that Parties needed to be cautious when considering whether to borrow concepts from other legal instruments that were not consistent with the principles of the Antarctic Treaty system.

(312) Some Parties said it was difficult to understand why bioprospecting should be treated differently from other kinds of scientific research or other forms of commercial activity such as fishing or tourism. The importance of not discouraging beneficial scientific research was noted.

(313) Argentina stated that research activities on Antarctic genetic resources are generally undertaken by public research institutions together with private enterprise. In this joint venture, industry has access to the results of research undertaken in exchange for financing. Such access to the results ultimately leads to the development of products which are then patented.

(314) Argentina suggested that caution is required at this stage regarding the development of a definition of bioprospecting. This could, in effect, lead to a biased understanding of the issue as such a notion tends to be defined by the commercial purpose, whilst evidence shows that a purely scientific investigation that is undertaken by a non-profit public institution, results in private enterprise making commercial use once it obtains the investigation results. That is, commercial use is not the sought objective by the Party undertaking the research, but the result of such research is indeed ultimately commercial, and in this respect, private enterprise has privileged access to the results of the research. Only once more information is available will the ATCM be in a condition to take up consideration of a regime as such. Otherwise we could find ourselves embarked on a process of elaborating regulation or guidelines which place an incomplete or inadequate focus on the matter.

(315) It also noted that the discussion about biological prospecting must take into account the issue of the deep seabed genetic resources beyond national jurisdiction, as well as the Antarctic Treaty including its Article IV.

(316) ASOC noted the importance of all Parties complying with Resolution 7 (2005), in light of the clear need for accurate information about actual activities of scientists and companies. It saw compliance with Resolution 7 (2005) as an important step in moving forward on this issue.

(317) Given the importance and complexity of the issues associated with biological prospecting, the Meeting agreed to convene an open-ended Intersessional Contact Group (ICG) working until ATCM XXXIII to examine the issue of biological prospecting in the Antarctic Treaty area with the following terms of reference. With the aim of assisting the ATCM, the ICG will consider the following issues:

- definitions;
- scope;
- status;
- access;
- environmental impact;
- commercialization;
- benefit-sharing;
- giving advance notice of and reporting on biological prospecting activities, including those identified in WP 1;
- freedom of scientific investigation;
- free exchange of scientific information;
- applicable intellectual property regimes;
- merits of further regulation; and
- any other issues identified by the ICG.

(318) It was further agreed that:

- Observers and Experts participating in ATCM XXXII will be invited to participate in the ICG;
- The Secretariat would develop an interactive electronic discussion forum and provide assistance to the ICG; and
- The Netherlands would act as convener, and would report to ATCM XXXIII on the progress made in the ICG.

(319) With respect to the issue of definitions, some Parties considered that it would be important to reach agreement on the definitions of biological prospecting terms as a first task in any further discussions under this agenda item. Others noted that, while there was no internationally agreed definition of "biological prospecting" or "bioprospecting" and many related terms, these were discussed in other bodies such as the Convention on Biological Diversity.

Item 18: 50th anniversary: Looking to the future of Antarctica

(320) The Antarctic Treaty's 50th anniversary commemoration that took place as part of the Joint Meeting of the Antarctic Treaty Parties / Arctic Council, held in Washington on 6 April, included an address by the ATCM Chairman (Volume 2, Part III, section 1), and culminated with the adoption of the Washington Ministerial Declaration on the Fiftieth Anniversary of the Antarctic Treaty. In the Ministerial Declaration, the Treaty Parties highlighted the outstanding success of the Antarctic Treaty in the first half-century of its operation and dedicated themselves to the continuing realization of its principles and purposes. The Chairman's remarks emphasised the essential role of the Treaty's basic obligations and governance provisions in its continuing vitality and achievements, including the evolution of the Antarctic Treaty system.

(321) The Russian Federation introduced WP 46 *On the strategic role of the Antarctic Treaty of 1959 in the process of international irelations in the south pPolar region of the earth*, and stressed the importance of the basic elements of the Treaty as the foundation for meeting future challenges in Antarctica. The Meeting also had before it *ATCM XXXII: Possible Themes for a Long-term Agenda* (the Attachment to WP 48 tabled at ATCM XXXI in Kyiv).

(322) Looking five to ten years in the future, there was support for a strategic planning approach to allow ATCMs to more effectively address priority issues. This could take the form of a multi-year work plan.

(323) In support of such an approach, the Meeting considered ways that operation of the ATCMs might be improved. There was no final conclusion, but among the ideas put forward were:

(a) developing more issue-specific, targeted agendas for ATCMs;
(b) revising the frequency and / or duration of ATCMs;

(c) making better use of meetings of experts, workshops (such as the Joint CEP / SC-CCAMLR Workshop), and intersessional work to prepare for ATCMs;

(d) providing input from the ATCMs to other forums addressing important issues of relevance to the Antarctic region;

(e) coordination by ATCPs of their activities in those other forums in pursuing common objectives;

(f) expanding outreach programmes to make the general public and other international bodies aware of the unique features of Antarctica and the Antarctic Treaty system;

(g) use of joint meetings or workshops with other international bodies, both within and outside the Antarctic Treaty system; and

(h) noting, reviewing or addressing as appropriate international developments, including treaties and or other international instruments, which may be of relevance to the Antarctic Treaty system.

(324) With regard to sub-paragraph (g) above, several delegations emphasised in particular the benefits of working with CCAMLR and the Arctic Council.

(325) With respect to themes for a multi-year strategic agenda, it was recognised that the Washington Ministerial Declaration on the 50th Anniversary of the Antarctic Treaty identified several areas for priority attention. Against that backdrop, discussions touched upon a number of issues that might figure in development of a multi-year agenda or work plan, many of which are already before the ATCMs. These included:

(a) climate change;

(b) science;

(c) ecosystems;

(d) marine protected areas;

(e) promotion of the use of renewable energy;

(f) biological prospecting;

(g) cooperation and coordination with other international bodies and agreements;

(h) implementation of, and compliance with, the obligations of the Treaty and measures adopted there under;

(i) liability (implementation of Annex VI to the Protocol on Environmental Protection and addressing issues beyond response action);

(j) shipping and aviation; and

(k) tourism.

(326) There was a wide ranging discussion of these subject areas, recognising from the outset that this was not the forum to seek their substantive resolution and that there were connections between many of them.

(327) It also was recognised that the subject areas discussed were not exhaustive – that is, they did not necessarily include all issues that might be considered in the development of a multiple-year strategic work plan for the ATCMs.

(328) It was generally agreed that development and use of a strategic multiple-year work plan, as done by the CEP, would help the Treaty Parties anticipate and structure both ATCMs and intersessional work to better address issues of priority and timely importance. Such a "strategic" plan would be used as a tool to help the Treaty Parties anticipate matters requiring priority attention, and to decide when, where, and how those matters could best be addressed. It would be used only to assist the ATCMs in formulating targeted agendas for subsequent meetings and determining preparatory work needed to deal effectively with the targeted issues. It would be reviewed at each ATCM and be updated as necessary.

(329) It was recognised that there were both procedural and substantive matters that would have to be considered in developing targeted agendas and a multi-year strategic work plan. Toward this end, it was suggested and agreed that development of targeted agendas and a multi-year strategic work plan for future ATCMs would be placed on the agenda for ATCM XXXIII.

(330) The Meeting adopted Decision 8 (2009) stating that the Chair would send a letter to the President of the Conference of the Parties of the United Nations Framework Convention on Climate Change, forwarding to the UNFCCC the Ministerial Declarations adopted on 6 April 2009 and the SCAR Review Report on Antarctic Climate Change and the Environment (ACCE Review Report) (see Part II, section 2, page 261).

Item 19: Preparation of the 33rd Meeting

a. Date and place

(331) The Meeting welcomed the kind invitation of the Government of the Oriental Republic of Uruguay to host the 33rd ATCM in Punta del Este from 3 to 14 May 2010.

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

- 2011: Argentina (planned for 20 June – 1 July)
- 2012: Australia

b. Invitation of international and non-governmental organizations

(333) In accordance with established practice, the Meeting agreed that the following organizations having scientific or technical interest in Antarctica should be invited to send experts to attend ATCM XXXIII: the ACAP Secretariat, ASOC, IAATO, IHO, IMO, IOC, the Intergovernmental Panel on Climate Change (IPCC), the IPY International Programme Office, IUCN, UNEP, WMO and WTO.

c. Invitation to Malaysia

(334) The Chair reported on informal contact with the Delegation of Malaysia in the margins of ATCM XXXII. Recalling that Malaysia had been invited to observe the ATCM on several occasions, the Meeting looked forward to Malaysia's early decision on accession to the Treaty and thus its formal participation in the Antarctic Treaty system. The Meeting invited Malaysia to observe ATCM XXXIII in Punta del Este. In conveying this invitation, the Chair's letter drew attention to the Washington Ministerial Declaration on the Fiftieth Anniversary of the Antarctic Treaty, in particular the paragraph encouraging other states that are committed to the objectives of the Antarctic Treaty to accede to it.

d. Preparation of the agenda for ATCM XXXIII

(335) The Meeting approved the Preliminary Agenda for ATCM XXXIII (see Part I, Section 3, page 165) and to include as an item "Development of a Multi-Year Strategic Work Plan".

e. Organisation of ATCM XXXIII

(336) Pursuant to Rule 11, the Meeting decided to continue to convene the same working groups at ATCM XXXIII as at this Meeting, with the exception of the 50th Anniversary Working Group.

f. The SCAR Lecture

(337) Taking into account the valuable series of lectures given by SCAR on the occasion of ATCMs, the Meeting decided to invite SCAR to give another lecture on scientific issues relevant to ATCM XXXIII.

Item 20: Any Other Business

(338) The current Executive Secretary of COMNAP Antoine Guichard reminded the ATCM that COMNAP´s Executive Secretary is finishing his term this year. COMNAP announced with great pleasure that Ms Michelle Rogan-Finnemore has been appointed new Executive Secretary of COMNAP. Ms Rogan-Finnemore will take office in September 2009.

(339) The ATCM thanked very especially the Executive Secretary and his devotion to the Treaty.

Item 21: Adoption of the Final Report

(340) The Meeting adopted the Final Report of the 32nd Antarctic Treaty Consultative Meeting.

(341) The Executive Secretary Jan Huber addressed the Parties at the end not only of his term as Executive Secretary of the Antarctic Treaty Secretariat, but also of his ATCM career, which had started in 1994. In his farewell remarks, Mr Huber thanked the ATCM for the opportunity it had given him to make a contribution to the Antarctic Treaty system in establishing and leading the Antarctic Treaty Secretariat in its first five years. He also lamented the lack of progress in the review of the ATCM's past measures, a difficult but urgently needed task, and said that expressions by the Meeting on the importance of this work (see Par. 46 and 268 above) would not be credible unless time was taken either intersessionally or during the meetings to tackle the matter.

(342) The Chair of the Meeting, R. Tucker Scully made closing remarks.

(343) The Meeting was closed on Friday, 17 April 2009 at 16:00.

2. CEP XII Report

Report of the Committee for Environmental Protection (CEP XII)

Baltimore, April 6–9, 2009

Item 1: Opening of the Meeting

(1) The CEP Chair, Dr Neil Gilbert (New Zealand), opened the meeting on Monday 6 April 2009 and thanked the United States for arranging and hosting the meeting.

(2) The Chair remarked on the significance of the CEP meeting in the context of the celebrations of the 50th anniversary of the signing of the Antarctic Treaty. The Chair noted the significant differences between Antarctica in 1959 and Antarctica in 2009, particularly in respect of increased human activity and a changing environment, particularly on the Antarctic Peninsula. The Chair commented that the CEP was likely to play an increasingly important role in advising on and implementing appropriate management in Antarctica if the region's status as a natural reserve devoted to peace and science was to be maintained. Further still, as the pace of change in Antarctica was likely to increase, it would be ever more important for the CEP to be clear about its priorities and objectives and to increasingly cooperate with other elements of the Antarctic Treaty system, notably the Scientific Committee of CCAMLR, as well as expert bodies such as SCAR and COMNAP, in order to achieve its objectives.

(3) The Committee welcomed Belarus as a Committee Member, following its accession to the Environmental Protocol on 15 August 2008.

(4) The Chair summarised the work undertaken during the intersessional period as a result of actions and activities agreed at CEP XI, and circulated in the action plan under CEP Circular 1 / CEP XII in August 2008. The Chair noted that these issues would be dealt with during the course of CEP XII.

Item 2: Adoption of the Agenda

(5) The Committee adopted the following agenda and confirmed the allocation of papers to Agenda Items:

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. 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
    a. Climate Change
    b. Other Environmental Monitoring and Reporting Matters
10. Inspection Reports
11. Cooperation with Other Organisations
12. General Matters
13. Election of Officers
14. Preparation for Next Meeting
15. Adoption of the Report
16. Closing of the Meeting

(6) The Committee considered 37 Working Papers, 49 Information Papers and five Secretariat Papers (Annex 1).

Item 3: Strategic Discussions on the Future of the CEP

(7) No Working Papers were submitted under this agenda item.

(8) The Committee noted the progress it had made in agreeing and beginning to implement its Five-year Work Plan and agreed to draw to the ATCM's attention the usefulness of its prioritised work plan as an effective means of managing its workload.

(9) Members welcomed the list of papers and abstracts against each agenda item that had been circulated in advance of CEP XII. Members noted that this information had greatly assisted their preparation for the meeting and encouraged the inclusion of a brief abstract in all submitted papers.

Item 4: Operation of the CEP

(10) The Secretariat introduced SP 8 *Electronic Information Exchange System: A report on the first operational season*, providing an update on the system's development and use in the past year. The Secretariat noted that completing the EIES fulfils Members' obligations under Article 17 of the Protocol for exchange of environmental information but that, possibly due to the timing of the meeting, many annual reports had not yet been received.

(11) A number of Members thanked the Secretariat for its work on the EIES and noted the system was generally easy to use and a helpful tool for compiling information. Several Members supported the proposals for further development of the EIES as noted in Appendix 1 of SP 8. Specifically, some Members looked forward to the development of tools in the EIES that would facilitate information gathering regarding ASPA visitation permits, particularly multiple use permits.

(12) The Secretariat noted further development of the EIES would be subject to the availability of sufficient funding.

(13) The Committee encouraged 100 per cent usage of the system and requested the Secretariat to send Members a reminder to use the EIES during the intersessional period.

(14) Australia welcomed the Secretariat's advice that, when use of the EIES becomes common practice, reports could be produced summarising information submitted across all Members. It suggested that the Secretariat could be asked to

provide an example of what such a summary of compiled information might look like for consideration at CEP XIII. The CEP supported this suggestion noting such a document would facilitate discussions.

(15) COMNAP mentioned that it was continuing to work with the Secretariat to make sure the COMNAP reporting system and the EIES are compatible and complementary.

(16) The CEP thanked the Secretariat and COMNAP for their efforts in this regard, and looked forward to continued improvement and application of the EIES.

Advice to the ATCM

(17) The CEP called the ATCM's attention to the value of the EIES in facilitating the submission, management and use of environmental information exchanged under Article 17 of the Protocol and encouraged 100 per cent use of the system by all Parties.

(18) Australia introduced WP 7 *Amendments to the Rules of Procedure for the Committee for Environmental Protection*. It noted that the rules had not been updated since their adoption at ATCM XXII in 1998. Australia recalled that there had been several changes to the Committee's work practices since that time, including: the establishment of the Secretariat with its roles and responsibilities for facilitating the Committee's work; the use of online CEP Discussion Forum and other enhancements to the Committee's intersessional work practices; and the ATCM's adoption of guidelines for submission of documents to the ATCM and CEP.

(19) Australia proposed that the Committee consider the amendments to the Rules of Procedure proposed in WP 7, which were intended to reflect the Committee's current practice. It expressed its view that the Rules should be considered a living document to be regularly reviewed and updated as practices continue to improve.

(20) In response to a question about the possible financial implications, the Secretariat noted that the proposed changes reflected its current functions in supporting the CEP and would not require additional resources.

(21) Members thanked Australia for its paper and raised several additional suggestions, including to clarify:

- the CEP's desire to continue meeting annually;
- the benefit of providing for the Chair to establish intersessional work outside of the CEP meeting, to allow the Committee to respond in a timely manner to requests from the ATCM and other emerging issues;
- the Committee's ability and desire to utilise a variety of approaches to its intersessional work, possibly including workshop and video conferences; and
- the benefit of staggering the terms of the CEP Chair and Vice-chairs where possible.

(22) Australia coordinated comments from interested Members and prepared a revised version for consideration by the committee.

(23) The Committee endorsed the amended CEP Rules of Procedure proposed by Australia.

Advice to the ATCM

(24) The Committee reviewed a proposal for revised CEP Rules of Procedure and forwarded a revised version to the ATCM for consideration and adoption by means of a Decision.

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(25) The following papers, submitted to meet the reporting requirements under Article 17 of the Protocol, were also submitted under this agenda item:

- IP 58 *Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Japan)
- IP 59 *Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2008 – 2009* (Uruguay)
- IP 67 *Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2008–2009* (Italy)
- IP 73 *Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty* (Romania)

- IP 97 *Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente – Expedición 2008–2009* (Ecuador)

Item 5: International Polar Year

(26) On behalf of SCAR and the IPY-IPO, Dr David Carlson introduced WP 48 *IPY Report: Accomplishments and Challenges*, and gave a short presentation on the successes of the IPY, highlighting a long list of activities as examples of the kinds of research undertaken. He noted that the real success of the IPY will be judged by how the large amount of data collected will be analysed and synthesized. Dr Carlson anticipated that a new, comprehensive view of the polar regions will result from IPY efforts. Dr Carlson also noted that the Washington Ministerial Declaration on the International Polar Year and Polar Science adopted on 6 April 2009 (see paragraph 32 below) superseded the recommendation proposed in WP 48.

(27) Dr Carlson also noted the challenge of maintaining focus on the polar regions now that the IPY period had passed, referring to four specific needs: the need to develop integrated prediction capabilities, the need to sustain networks of contacts between journalists, scientists and teachers that were established during the IPY, the need to continue support for young polar scientists, and the need to identify, preserve and share data obtained during the IPY.

(28) SCAR advised that the Second International Polar Year Conference will be held in Oslo June 8–10, 2010 and encouraged all Parties to participate. All IPY scientists were urged to submit their data to their national Antarctic data centre or, if one doesn't exist, to establish one to create a repository for data that may then be exchanged with other national Antarctic data centres. SCAR noted its engagement with SCOR (the Scientific Committee on Oceanic Research) in the design for a Southern Ocean Observing System and urged Parties to learn more about this system and to aid in its implementation, when the design is published.

(29) Several Members and ASOC acknowledged the impressive legacy of the IPY.

(30) Belgium encouraged all Members to contribute financial or in-kind support to the SCAR-MarBIN database.

(31) Korea described its polar research programme which includes both an Arctic and an Antarctic research base and informed the meeting of the launching of a new

ice breaking research vessel this year that will contribute to Korea's future polar research efforts.

(32) The Committee welcomed the *Washington Ministerial Declaration on the International Polar Year and Polar Science* agreed by the Treaty Parties on Monday April 6.

(33) The Chair remarked that the success of IPY will depend on how the data and information obtained are used for management purposes as well as on the advances in understanding of the polar regions and how the challenges outlined in WP 48 are overcome.

(34) The following papers were submitted under this Agenda item:

- IP 40 *Brief Introduction on the Third Chinese National Arctic Marine Survey – IPY China Programme* (China), and
- IP 56 *Australian-led research during the International Polar Year* (Australia).

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

(35) No draft CEEs were circulated in advance of CEP XII.

(36) Information Paper 29 *Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica* (India) was submitted under this agenda item.

6b) Other EIA Matters

(37) The Secretariat noted that SP 10 *Annual List of Initial Environmental Evaluations (IEE)* and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2008 and March 31st 2009 was prepared in response to Resolution 1 (2005). The Secretariat noted that most information was uploaded directly into the database under the electronic reporting system.

(38) ASOC noted the large variation in the number of environmental impact assessments submitted by the different Parties with some submitting no EIAs. ASOC questioned whether this was an indication that the EIA provisions of the Protocol were not being adequately implemented or if Parties were simply not fulfilling the information exchange requirements of the Protocol.

(39) Germany also noted the variation in the number of environmental impact assessments and noted some variation in the procedures used by the different Parties to prepare these assessments.

(40) The Committee recalled its lengthy previous discussions regarding the appropriate level of EIA to apply to various activities in Antarctica and its attempts to better define the meaning of the term "minor or transitory". Whilst these matters had not necessarily been resolved, the Committee reiterated the importance of undertaking high quality EIAs for all activities in Antarctica and urged all Members to ensure that this information was made available, where required, in accordance with Resolution 1 (2005).

(41) The Chair introduced WP 12 *Environmental aspects and impacts of tourism and non-governmental activities in Antarctica: Draft project scope* (Australia, France and New Zealand), prepared jointly by the CEP Chair and Vice-chairs. The paper contained a draft project scope to address this issue and a proposed management approach for the study. The Chair noted that this had been developed in accordance with the high priority afforded to environmental impacts of tourism and non-governmental activities in the CEP's five-year work pPlan and the ATCM's interest in seeing this work undertaken (paragraph 203 of ATCM XXXI Final Report).

(42) The Chair indicated that the key objectives of the proposed study were to provide a comprehensive and up-to-date status report on tourism and non-governmental activities in the Antarctic Treaty area; to provide an assessment of actual or potential environmental impacts; to identify and assess the effectiveness of existing management arrangements; to identify and assess the adequacy of ongoing research and monitoring activities, as well as analytical methods to analyse existing data; and to make recommendations for the future management of the environmental aspects of Antarctic tourism and non-governmental activities.

(43) The Chair proposed that the project be developed through a Project Management Group comprising interested CEP Members. This group would be responsible for guiding and coordinating the project and for ensuring the Committee as a whole is kept appraised of the study's progress and findings.

(44) New Zealand indicated its willingness to contract an individual to facilitate the study under the direction of the project management group. There was extensive support for the proposal and New Zealand's offer to take a lead in the process. Many Members also indicated their willingness to participate in the work.

(45) In supporting the initiative, the Committee emphasised the importance of including all aspects of tourism and NGO activities in the scope of the study; ensuring transparency in carrying out the study, and ensuring that input is open to observers and experts. It was also noted that the study will contribute to the Committee's role in advising the ATCM on the state of the Antarctic environment.

(46) ASOC and IAATO also supported the initiative and offered to assist and provide advice and information as required. Several Members emphasised that undertaking the study should not be a deterrent to policy action being taken in the interim. Some Members, supported by IAATO, noted that, in the future, it would be beneficial to conduct a study examining all human activity in Antarctica, not just the impacts of tourism and non-governmental activities.

(47) New Zealand indicated that it would begin the study shortly after the completion of ATCM XXXII with a call for Members to participate in the Management Group. All material would be made available through the CEP website. Regular updates would be provided to all CEP Members to ensure the credibility of the process and to ensure that the best available information and data are used.

(48) ASOC introduced IP 2 *Impacts of local human activities on the Antarctic environment: A review*, presenting a summary of an article co-authored by nine experts in terrestrial and marine biology and contaminated site assessment and remediation. The purpose of this review was to summarise recent research on human impacts on the southern polar environment and to recommend how research can be better fed back to the Environment Protocol and CCAMLR, to inform decisions. Chemical contamination and sewage disposal on the continent have been found to be long-lived. Contemporary sewage management practices at many coastal stations are insufficient to prevent local contamination. Human activities, particularly construction and transport, have affected Antarctic flora and fauna. A small number of non-indigenous plant and animal species have become established. There was little indication of recovery of overexploited fish stocks, and ramifications of fishing activity on bycatch species and the ecosystem could be far-reaching.

(49) The Committee congratulated ASOC on its comprehensive review of the subject, which provided an excellent state of knowledge report on human activity and impacts in the region.

(50) The Committee noted the synergy between the report's recommendations and the Committee's prioritised work plan, and concurred with the following recommendations contained in the paper:

- Initiate long-term monitoring programmes for the verification of impacts on, or early detection of unforeseen effects in relation to:
  - Chemical contamination;
  - Sewage;
  - Floral assemblages;
  - Fauna; and
  - Non-native species;
- Put in place measures to prevent the establishment of non-native species;
- Develop universal standards for the remediation of contaminated sites;
- Ensure the effectiveness of the EIA provisions of the Protocol, particularly with regard to improving the assessment of cumulative impacts; and
- Apply the precautionary approach.

(51) The Committee noted that the joint CEP / SC-CAMLR workshop held before the CEP XII considered some of the issues discussed in the ASOC paper, such as non-native species and monitoring.

(52) ASOC introduced IP 53 *Key elements of a strategic vision for Antarctic tourism* stating that there is an urgent need for Antarctic Treaty Parties to develop a clear vision of tourism in the Antarctic, and to agree on a tourism strategy that delivers step by step on that vision through time. With respect to tourism and EIA, ASOC noted that Antarctic environmental protection should begin at the tourism departure region through the planning, assessment and permitting processes. The impact of tourism activities in Antarctica as assessed in the EIA should demonstrably have no more than a minor or transitory impact on the environment;

consequently, there is a need to assess the effectiveness of EIA through monitoring. A precautionary approach should be used to manage tourism in the absence of conclusive scientific evidence about tourism impacts.

(53) ASOC also introduced IP 23 *Tourism and land based facilities in Antarctica*. It recalled that, at ATCM XXXI, IAATO and ASOC had been invited by Japan to provide information on land-based facilities. Japan thanked ASOC for producing the Information Paper in response to Japan's request at ATCM XXXI and noted that such information would be a good basis for discussions on tourism and non-governmental activities.

(54) Some Members noted that some of the information contained in IP 23 could be misinterpreted, in particular elements related to scientific bases, which some Members considered to be inaccurate. ASOC commented that its paper was fully referenced and noted that IP 23 lists facilities that play a role in tourism even if that is not their principal purpose.

(55) IAATO introduced IP 87 *IAATO Field Operations Manual (FOM)*, noting that it viewed good training and experience as key factors in ensuring best practice in safe and environmentally responsible private-sector travel to Antarctica, and as a way to elevate its standards. As such, IAATO's Field Operation Manual (FOM) includes basic ATS documents and numerous guidelines and operating procedures that have proven to be effective tools over the years for the management of Antarctic travel. The FOM also provides the course material for the IAATO online training and assessment initiative for field staff.

(56) The Committee thanked IAATO for this information.

(57) The following Information Papers were submitted under this agenda item:

- IP 21 *Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Proposed New Indian Research Base at Larsemann Hills, East Antarctica* (India); and
- IP 72 *Initial Environmental Evaluation Law-Racovita Station (Romania)*

Item 7: Area Protection and Management Plans

7a) Management Plans

i. Draft management plans which had been reviewed by the Subsidiary Group on Management Plans

(58) Australia, on behalf of the *Subsidiary Group on Management Plans (SGMP) introduced WP 51 rev. 1 Subsidiary Group on Management Plans* – Report on Terms of Reference #1 to #3: Review of Draft Management Plans. It mentioned that the group had operated in accordance with Terms of Reference agreed by CEP XI and ATCM XXXI, and was convened by one of the CEP Vice-chairs, Mr Ewan McIvor from Australia.

(59) Australia informed the Committee that the group had included seventeen participants and suggested that the high level of participation was an encouraging demonstration of support for this new mechanism for assisting the Committee's work. All participants were thanked for their hard work.

(60) The group had considered the four management plans referred by CEP XI for intersessional review. The SGMP's advice to proponents had been circulated to CEP contact points and was available via the Discussion Forum.

(61) In summary, the SGMP recommended that the CEP:

- Approve:

  – the revised management plan prepared by Chile for ASPA 125 (Fildes Peninsula, King George Island, South Shetland Islands), contained in Attachment A to WP 51;

  – the revised management plan prepared by Chile for ASPA 150 (Ardley Island, Maxwell Bay, King George Island), contained in Attachment B to WP 51; and

  – the revised draft management plan prepared by Korea for a new ASPA at Narębski Point, Barton Peninsula, King George Island, contained in Attachment C to WP 51.

- Note that the United States planned to undertake further field work at ASPA 106 Cape Hallett and to finalise the revised draft management plan in 2010.

(62) Korea introduced some of the key components of its new proposed ASPA at Narębski Point, and highlighted the outstanding flora and fauna at the location as well as the aesthetic values of the site. The ASPA had been proposed in light of the increased number of visitors over the past several years and the ASPA was intended to protect the ecological, scientific, and aesthetic values.

(63) Argentina thanked Korea for incorporating comments made on the draft management plan of the proposed ASPA at Narębski Point.

(64) The Committee endorsed the SGMP's recommendations and agreed to forward the management plans for ASPA 125 (Fildes Peninsula), ASPA 150 (Ardley Island), and ASPA (new): Narębski Point to the ATCM for formal adoption. It also noted the advice from the SGMP regarding ASPA 106 (Cape Hallett), and further noted that the United States would submit the revised management plan for that Area to the SGMP during the intersessional period.

(65) The Chair recalled that, in part, the SGMP had been established to relieve some of the burden of work on the Committee during the CEP meeting. The SGMP was already proving helpful as there had been thorough scrutiny of management plans during the intersessional period, allowing the Committee to review its recommendations efficiently in session.

(66) The Committee looked forward to using the SGMP more in the future to further the work of the CEP, and thanked Mr McIvor for his work to coordinate the SGMP.

ii. Draft revised management plans which had not been reviewed by the Subsidiary Group on Management Plans

(67) The Committee considered revised management plans for the following Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) under this category:

- WP 20 *Revision of Management Plan for Antarctic Specially Protected Area No 152: Western Bransfield Strait* (United States)
- WP 21 *Revision of Management Plan for Antarctic Specially Protected Area No 153: Eastern Dallmann Bay* (United States)
- WP 22 *Revision of Management Plan for Antarctic Specially Protected Area No 121: Cape Royds, Ross Island* (United States)

- WP 24 *Revision of Management Plan for Antarctic Specially Protected Area No 113: Litchfield Island, Arthur Harbor, Anvers Island, Palmer Archipelago* (United States)
- WP 25 *Revision of maps and text for the Management Plan for Antarctic Specially Managed Area No 7: South-west Anvers Island and Palmer Basin* (United States)
- WP 27 *Review of Antarctic Specially Protected Area (ASPA) No 104* (New Zealand)
- WP 40 *Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 136 Clark Peninsula and 162 Mawson's Huts, and Antarctic Specially Managed Area (ASMA) 3 Cape Denison* (Australia)
- WP 42 *Review of the Management Plan for Antarctic Specially Protected Area (ASPA) No 142 – Svarthamaren* (Norway)

(68) In introducing its revised ASPA management plans, the United States noted that:

- no major changes had been made to the management plans for ASPA 113 (Litchfield Island), ASPA 152 (Western Bransfield Strait), ASPA 153 (Eastern Dallman Bay) or ASMA 7 (South-west Anvers Island and Palmer Basin);
- the marine boundary of ASPA 121 (Cape Royds) had been redefined to focus more particularly on the area immediately surrounding the Adélie penguin colony, in order to reflect more accurately the values under special protection and in recognition of site management needs; and
- other minor changes to the text and maps of these plans were outlined in the corresponding Working Papers.

(69) The United States also mentioned that it had included accurate coordinates for certain locations in some of these areas, following a query from Japan. Japan thanked the United States, noted that such information was helpful for implementing management plans in its national legislation, and therefore proposed that all Parties present as precise geographical coordinates as possible.

(70) The Committee encouraged all Members to include coordinates as accurately as possible.

(71) In response to a question from France, the United States advised that tourism takes place in the vicinity of ASPA 153 but not within the Area. Due to the proximity, however, it was important to include a reference to tourist activities in the management plan.

(72) Argentina requested clarification on the Committee's procedures regarding when management plans may be forwarded to the ATCM for direct approval and when management plans would be referred to the SGMP.

(73) The Chair noted that this decision fell to the Committee, and Australia recalled that the current procedure was outlined in the revised *Guidelines for CEP Consideration of New and Revised Draft ASPA and ASMA Management Plans* adopted by CEP XI.

(74) In presenting the draft Management Plan for ASPA 104 (Sabrina Island), which was prepared in the Annex V format, New Zealand noted that the existing Management Plan dated back to 1966 and consisted only of a description of the Area. Following a question from Japan, New Zealand made a minor modification to clarify wording regarding restrictions on hazardous liquids that can be taken into the Area.

(75) Australia introduced the draft Management Plans for ASPA 136 (Clark Peninsula), ASPA 162 (Mawson's Huts), HSM 77 and ASMA 3 (Cape Denison), noting that:

- no major changes had been made to the management plans for ASPA 162 or HSM 77 and ASMA 3;
- it thanked New Zealand for its assistance in the review of these management plans through the report of a New Zealand government official who had visited the Areas on a tourist vessel during the past season;
- in response to the effect of changing ice conditions on the essential access corridor adjacent to ASPA 136, it had conducted an early review of the management plan and realigned a portion of the southern boundary to allow a safe alternative access route that would not impact on the values of the Area; and
- minor changes to these plans were detailed in Working Paper 40.

(76) Australia made minor changes to the management plan for ASPA 136 to more clearly indicate provisions for accessing the Area, in response to a query from Japan.

(77) Norway advised that no major changes had been made to the Management Plan for ASPA 142 and that minor changes were identified in Working Paper 42. Norway had, in its review of the plan, noted the area is classified as a T and U domain which are poorly represented in the Protected Area System.

(78) The Committee agreed to refer each of these management plans to the ATCM for adoption.

(79) The following paper was also submitted under this agenda item: IP 8 *Protected Area Management Plan: Five year review of Beaufort Island – ASPA 105* (New Zealand).

iii. New draft management plans for protected/managed areas

(80) No new proposals were received.

Advice to the ATCM

(81) The Committee had before it 13 new or revised protected or managed area management plans. Three of these had been subject to review by the Subsidiary Group on Management Plans (SGMP) established by CEP XI and 10 revised management plans had been submitted directly to CEP XII.

(82) In reviewing the advice of the SGMP, and following the Committee's assessment of those plans that had not been subject to intersessional review, the Committee agreed to forward each of these management plans to the ATCM, with the recommendation that they be adopted by ATCM XXXII:

#	Name
ASPA new	Narębski Point, Barton Peninsula, King George Island
ASPA 104	Sabrina Island, Balleny Islands
ASPA 113	Litchfield Island, Arthur Harbour Anvers Island, Palmer Archipelago
ASPA 121	Cape Royds, Ross Island
ASPA 125	Fildes Peninsula, King George Island (25 de Mayo), South Shetland Islands

#	Name
ASPA 136	Clark Peninsula, Budd Coast, Wilkes Land
ASPA 142	Svarthamaren, Mühlig-Hofmannfjella, Dronning Maud Land
ASPA 150	Ardley Island, Maxwell Bay, King George Island (25 de Mayo)
ASPA 152	Western Bransfield Strait off Low Island, South Shetland Islands
ASPA 153	Eastern Dallmann Bay off Brabant Island, Palmer Archipelago
ASPA 162	Mawson's Huts, Cape Denison, Commonwealth Bay, George V Land, East Antarctica
ASMA 3	Cape Denison, Commonwealth Bay, George V Land, East Antarctica
ASMA 7	South-west Anvers Island and Palmer Basin

(83) The Committee also noted that, following further field work in the area, the United States would submit a revised management plan for ASPA 106 Cape Hallett to the SGMP during the intersessional period.

iv. Other matters relating to management plans for protected / managed areas

(84) The Secretariat briefly demonstrated the features of the new Antarctic Protected Area online database which had been developed during the intersessional period. This tool, which replaced the former Antarctic Protected Areas Archive, is now linked to a geographical information system (GIS) to provide more accurate geo-referenced information on protected and managed areas and Historic Sites and Monuments. The Secretariat highlighted key features of the online database, including the ability to run queries on protected areas sites and to view detailed maps and site photos. Further, the new database hosts GIS information which includes an overlay of the Environmental Domains Analysis developed by New Zealand, although this GIS component of the database is still under development. The database site is available in all four languages of the Treaty.

(85) The Committee and ASOC commended the Secretariat for this development and noted that the database will be a very useful tool in the future. Australia commented that such a database had been a recommendation of the CEP for the past ten years and thanked the Secretariat for its excellent work in bringing this to fruition. The Chair noted that the database also contributes to the Committee's ongoing work in the strategic development of a more holistic protected areas system.

(86) In commenting on SP 9 *Register of the status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plan*, the Secretariat noted that in future, the register would be linked to the protected areas database, and that this might eliminate the need for a hard copy of this document.

(87) On behalf of the SGMP, Australia presented WP 8 *Subsidiary Group on Management Plans – Report on Term of Reference #4: Improving Management Plans and the Process for their Intersessional Review*. It again thanked all participants, and summarised the main components of the group's work under its fourth Term of Reference.

(88) The Group had added protected area recommendations arising from the 2006 Workshop on Antarctica's Future Environmental Challenges to the list of recommendations appended to the CEP III Final Report, and had conducted a review of the status of these recommendations, as outlined in Attachment A to WP 8. The group wished to bring to the Committee's attention several particularly notable actions and events which had occurred since CEP III and which addressed many of the recommendations, including:

- the entry into force of Annex V;
- the adoption of several Resolutions pertinent to the Parties' implementation of Annex V;
- the establishment of the Secretariat, with its responsibilities for managing the protected areas database and EIES;
- the establishment of the Subsidiary Group on Management Plans;
- the proposal currently before the CEP to conduct a study of the environmental aspects and impacts of Antarctic tourism; and
- the joint workshop held prior to CEP XII that considered improved collaboration between the CEP and SC-CAMLR.

(89) The SGMP had also identified several matters for the Committee's consideration, and suggested that the CEP might wish to:

- consider further work to make the environmental domains analysis accessible, to assist with developing and reviewing new protected area proposals (Recommendation A3 in Attachment A to WP 8);

- reconsider promoting the use of GPS to accurately define protected area boundaries. Such information could be managed in the protected area database and could be used in conjunction with Resolution 3 (2008) to assess representativeness. The CEP might also wish to consider standardising protected area signs where appropriate (Recommendation A8 in Attachment A to WP 8);
- consider whether further work is required to ensure the full "target audience" (e.g. tour operators) is aware that management plans are available via the ATS website (Recommendation A18 in Attachment A to WP 8); and
- consider what information about protected areas could usefully be contained in the ATS protected areas database (Recommendation A18 in Attachment A to WP 8).

(90) New Zealand congratulated the SGMP for its work and expressed general support for the proposals. It asked the SGMP for clarification on what types of other information the group considered might be included in the protected areas database.

(91) Australia suggested that the protected areas database could usefully be expanded to provide the ability to search and reference additional fields of data, such as the primary reason for site designation, values under protection, and the size of the Area, and that such information could usefully inform the assessment of existing or proposed areas and the further development of the protected areas system. IAATO thanked the SGMP for its work and noted that the protected areas database will be referenced in its Field Operations Manual.

(92) The Committee endorsed these points raised by the SGMP.

(93) The other components of the group's work were outlined in points 2 to 5 of WP 8, and related to proposals for further work scheduled in the suggested work plan contained in Attachment C. This included:

- developing suggested standard wording for appropriate components of management plans, as identified in Attachment B to WP 8, while noting that management plans should continue to include sufficient site-specific information, and that standard wording should not impede or discourage proponents from developing creative or innovative approaches to area protection and management;

- preparing a template to help improve consistency between management plans;
- reviewing the Guide to the Preparation of Management plans for Antarctic Specially Protected Areas, and holding a workshop to share best practice on ASMA management and develop guidance for preparing ASMA management plans; and
- giving further consideration to whether the SGMP could usefully consider and provide advice on management plans that are not referred for intersessional review.

(94) With regard to the development of a template for management plans, the United States noted that this would be particularly helpful given the need for consistency and also to provide guidance to new CEP representatives. In response to a question from the Chair, Australia clarified that the proposed template was intended to allow proponents to insert management plan text into a standard format, improving consistency between plans. Regarding consideration by the SGMP of management plans not referred for review, some Members noted that such a holistic review of all plans could assist with consistency and quality control, but could be an overly ambitious workload for the group.

(95) Australia responded on behalf of the SGMP to clarify that the group's present intention was only to further discuss whether such a review would be feasible and how it could be conducted.

(96) The Committee agreed that work outlined in the group's report provided a clear demonstration of the value of establishing the SGMP, particularly for assisting the Committee's meeting work load and for progressing the development Antarctic protected areas system. It endorsed the proposed SGMP work plan.

Advice to the ATCM

(97) The Committee considered the report from the Subsidiary Group on Management Plans (SGMP) on its work, in accordance with its fourth Term of Reference, to improve management plans and the process for their intersessional review.

(98) The group's review of past protected area recommendations indicated several important events and actions since the last review at CEP III, including the entry into force of Annex V, the adoption of several Resolutions on area protection and

management, the establishment of the Secretariat and its protected areas database and information exchange system, the establishment of the SGMP, the CEP's proposal to study the environmental aspects and impacts of Antarctic tourism, and the joint CEP / SC-CAMLR workshop.

(99) The Committee endorsed the SGMP's proposed work plan (Appendix 2), which includes work over the next two years to develop standard wording and a template for management plans, to revise the *Guide to the preparation of management plans for Antarctic Specially Protected Areas*, and to develop similar guidance for the development of ASMA management plans.

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(100) Italy presented IP 61 *The management of Terra Nova Bay (Ross Sea) area: an ASPA or an ASMA?*, noting that the area had scientific and environmental values that should be protected, and included a marine area. Although ASPAs have been designated, science and tourism in the area have increased. Italy expressed its view that a management framework needs to be established for this area under both CCAMLR and the Environment Protocol. Italy solicited advice from other Members on this matter.

(101) Germany thanked Italy for its initial proposals for this site as it is in close proximity to Germany's Gondwana Station. Germany offered to work with Italy and to help in the development of a future proposal of a protected or managed area.

(102) ASOC supported the proposal by Italy, noting it in the context of CCAMLR's bioregionalisation process. ASOC highlighted the protection of marine resources needed by land-based predators and the establishment of a marine protected areas network to protect marine biodiversity.

(103) The Chair welcomed Italy's work to bring the options forward and encouraged those with interest and knowledge in the area to aid Italy in developing a more complete proposal.

(104) The SC-CAMLR Observer confirmed that CCAMLR looked forward to being consulted should further development result in the proposal of a protected or managed area with a marine component that triggered the provisions of Decision 9 (2005). At that time, CCAMLR would do as much as possible to facilitate a timely response.

(105) The following paper was also submitted under this agenda item: IP 66 *Revision of Maps for Antarctic Specially Managed Area No 2: McMurdo Dry Valleys, Victoria Land* (United States).

7b) Historic Sites and Monuments

(106) Chile introduced WP 3 *Antarctic Protected Area System: Revised list of Historic Sites and Monuments – Measure 3 (2003). Guidelines for its application*, recalling the consolidated list of HSMs held under Measure 3 (2003). Chile noted that it might be useful to consolidate the existing provisions and guidelines pertaining to the designation and management of HSMs, in order to maintain and improve the quality of the protection awarded to present and future sites and monuments.

(107) Norway supported the proposal but noted that guidelines should also reflect Resolution 4 (1996), which recommended that, during the preparation for the listing of a Historic Site and Monument or the writing of a Site Management Plan, adequate liaison is accorded by the proposing Party with the originator of the Historic Site or Monument and other Parties, as appropriate.

(108) The Meeting reaffirmed that, when considering designation of a new monument, Parties will need to consider environmental impacts as part of an EIA process.

(109) Argentina encouraged the adoption of clear language in the proposal to note that these proposed guidelines should not impact upon existing Historic Sites and Monuments as this may alter the way that these sites or monuments are managed. Chile responded to the comments of Argentina by pointing out that the text as written refers only to sites designated as Historic Sites and Monuments in the future, however the language does not prevent it from being applied to existing sites and monuments to the extent that the guidelines contain information relating to the preservation of existing sites and monuments.

(110) Following questions and points of clarification from Members on several elements of the draft Guidelines, Chile prepared a further revised draft which the Committee endorsed. The Committee agreed to forward the guidelines to the ATCM with the recommendation that they be adopted by means of a Resolution.

(111) Chile presented WP 50 rev. 1 *Measure 3 (2003) Antarctic Protected Areas System. Revised list of Historic Sites and Monuments (Proposed amendment to the*

Annex) proposing a modification of the text in the description of HSM 37 by adding the names "Cape Legoupil" and "Louis Philippe Peninsula" in the original text contained in the list of Measure 3 (2003). Chile explained that this would follow with the practice of the site guidelines to put multiple names for a site together with a hyphen.

(112) The Committee did not discuss the proposal and simply agreed that it be forwarded to the ATCM's Legal and Institutional Working Group for consideration.

(113) The United Kingdom introduced WP 35 *Proposal to add the British hut (Base W) on Detaille Island, Lallemand Fjord, Loubet Coast to the List of Historic Sites and Monuments, as well as WP 36 Proposal to add the British hut at Damoy Point, Dorian Bay, Wiencke Island to the List of Historic Sites and Monuments*. The United Kingdom informed the Committee that the reason for designation of Base W at Detaille Island as an HSM was based on the fact that, as a relatively unaltered base from the late 1950s, it provided an important reminder of the science and living conditions that existed when the Antarctic Treaty was signed 50 years ago. The British hut at Damoy point and its associated artefacts provided a notable and representative example of the infrastructure required to undertake science and logistic operations in the Antarctic Peninsula.

(114) Following some minor changes to the text of the HSM descriptions, the Committee endorsed the proposals and agreed to recommend to ATCM the inclusion of these two additional sites on the list of Historic Sites and Monuments.

(115) The Meeting noted IP 13 *Antarctic Historic Resources: Ross Sea Heritage Restoration Project – Historic artefacts from ASPAs 155, 157, 158 and 159* (New Zealand).

Advice to the ATCM

(116) The Committee reviewed a proposal for new guidelines for managing the list of HSMs held under Measure 3 (2003), aimed at improving the quality of the protection awarded to present and future sites and monuments.

(117) The Committee commends the guidelines to ATCM with the recommendation that they be adopted by means of a Resolution.

(118) The Committee recommends that the ATCM approves the addition of the following two new sites to the list of Historic Sites and Monuments held under Measures 3 (2003):

- British hut (Base W) on Detaille Island, Lallemand Fjord, Loubet Coast
- British hut at Damoy Point, Dorian Bay, Wiencke Island

7c) Site Guidelines

(119) France introduced WP 9 *Report on informal discussions about the non-specific information contained in the Site Guidelines for Visitors to Antarctica*. France recalled that, after adoption of Resolution 5 (2005), several site guidelines had been prepared and adopted. The informal group had assessed the existing site guidelines with the objective of identifying and differentiating generic guidance that could be applicable to any landing site in Antarctica from those more site-specific elements.

(120) The informal group had concluded that several elements of the current guidelines are not site-specific and should be considered as generic recommendations for all sites in Antarctica. In order to avoid creating new instruments, the group suggested that such generic guidance might be accommodated through a revision of the environmental elements of Recommendation XVIII-1.

(121) France, on behalf of the participants in the informal group, invited the Committee to consider the conclusions of the discussions undertaken during the intersessional period and, if appropriate, to establish an open-ended intersessional contact group (ICG) with agreed terms of reference to continue working on this issue during the upcoming intersessional period.

(122) Australia noted that the environmental elements of Recommendation XVIII-1 have not been reviewed since their adoption and that this may be a good opportunity to make sure that these recommendations are up-to-date so that visitors can easily obtain the most current advice.

(123) Romania emphasised that it is important that such guidance needed to be practical and easily used in the field. The UK indicated its support for the proposal whilst cautioning that such a review should not detract from additional site-specific guidelines being developed and adopted in the meantime. Several

Members expressed their support for the proposal and offered to participate in any Intersessional Contact Group that may be formed.

(124) The Chair thanked France for leading the intersessional work it had undertaken and, noting the agreement to continue the work, the Chair indicated that it may be appropriate to clear the proposal to review Recommendation XVIII-1 with the ATCM to ensure that such action had ATCM support and did not interfere with actions or initiatives underway or planned by the ATCM.

(125) Following the discussions that took place at CEP XI on the possibility of establishing a subsidiary group to assess and review Visitor Site Guidelines, and in response to a comment made by the United States, Australia suggested including a specific item on this issue on the terms of reference of the ICG.

(126) The Committee agreed the following terms of reference for the ICG, subject to any comments by the ATCM:

(127) The group will:

i. Review the environmental elements of Recommendation XVIII-1 (1994) *Guidance for Visitors to the Antarctic, and Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic* and other advice to visitors including in Site Guidelines, Recommendations and Resolutions;

ii. Develop revised and updated guidance for visitors based on Recommendation XVIII-1 in a format that can also be used as a generic cover to accompany site specific guidelines;

iii. Consider options for how the CEP might most effectively assess new site guidelines and periodically review existing guidelines; and

iv. Report to CEP XIII on the outcomes of this work.

(128) The Committee welcomed the offer of VerónicaVallejos from Chile to act as ICG convenor.

(129) Proposals for eight new Visitor Site Guidelines were presented at the Meeting.

(130) The UK, on behalf of its co-authors, introduced WP 28 *Site Guidelines for Baily Head and Telefon Bay, Deception Island, South Shetland Islands* (Argentina,

Chile, Norway, Spain, United Kingdom and United States). The UK noted that visitation of Baily Head had increased from 455 visitors in 1989/90 to 1386 in 2007/08 and visits to Telefon Bay had increased from 492 visitors in 1989/90 to 3068 in 2007/08. The UK also stated that these guidelines would contribute to the framework for protection of environmental values within the Deception Island ASMA 4.

(131) New Zealand introduced WP 13 *Visitor Site Guide for Cape Royds, Ross Island* (New Zealand and United States), noting that Cape Royds was one of the most visited sites in the Ross Sea region, with approximately 900 visitors per year on average. While the key sensitivities at the sites were already protected by ASPA 121 and ASPA 157, the proposed guidelines aimed to further minimise visitor impacts.

(132) Ukraine presented WP 19 *Site Guidelines for Wordie House, Winter Island, Argentine Islands* (Ukraine and United Kingdom). Ukraine noted that Wordie House is the site of the British Base "F", which had been recognised for its historical importance and adopted as HSM 62 in 1995. The UK had carried out a heritage survey in February 2007, including a detailed description of the site with recommendations for its future management. It also informed that Vernadsky station undertook management of the Base F on behalf of the UK. The UK noted that the site guidelines had been voluntarily and successfully implemented by IAATO during the 2008/09 austral summer.

(133) The United Kingdom presented WP 2 *Site Guidelines for Stonington Island, Marguerite Bay, Antarctic Peninsula* (United Kingdom and United States). The United Kingdom thanked IAATO for its assistance in preparing the guidelines and noted that, although visits by tourist vessels or national programmes over the past decade had been infrequent, more tourist vessels were travelling further south into Marguerite Bay, and visits to the island are increasing in number. The guidelines were proposed to better protect HSM 55 (East Base) and HSM 64 (Base "E") whilst allowing for educational and recreational visits by tour operators and National Antarctic Programmes.

(134) The United Kingdom presented WP 11 *Site Guidelines for Horseshoe Island and Detaille Island, Antarctic Peninsula*, and again thanked IAATO for its assistance. These guidelines were intended to improve the protection of HSM 63 (British Base "Y") on Horseshoe Island and Base "E" on Detaille Island, which the United Kingdom had proposed for HSM designation.

(135) Argentina expressed its concerns about WP2, WP 11 and WP19 regarding additional authorisation requirements for entering or visiting an Antarctic Treaty site or monument even for those already holding a permit issued by a Party. In this respect, Argentina further stated it would review the guidelines for Snow Hill Island so as to fully adjust to these criteria and encouraged the other Parties to undertake the same exercise with other already approved guidelines. It also stated that links to a Party website in the guidelines should be avoided as the guidelines should contain all the relevant information.

(136) Spain agreed with Argentina outlining that Article 8 of the Protocol states that the environmental permission to visit any Antarctic site must be issued by a Party. Consequently, it noted that any permission not issued in according with the Protocol must be reviewed.

(137) In response, the UK emphasised that the reference to "prior agreement" was intended to ensure safe and responsible operation and management of these huts. This reflected the UK´s responsibilities as the Party undertaking management of these sites. The UK noted that the discussion had raised an issue of a political rather than an environmental or technical nature, which would better be addressed by the ATCM.

(138) Argentina shared the views expressed by Spain.

(139) Chile presented WP 53 Site *Guidelines for the North-east beach of Ardley Peninsula (Ardley Island), King George Island (25 de Mayo Island), South Shetland Islands* (Argentina and Chile), informing the meeting that the site, adjacent to ASPA 150, was receiving an increasing number of tourist visits, now up to a hundred visitors per season. Chile also noted that personnel from the stations on Fildes Peninsula also visited the area during their rest time. Representatives from Chile and Argentina had completed an on-site assessment to develop the guidelines.

(140) After considering some comments provided by Members, Chile and Argentina decided to further consider the proposed for Site Guidelines during the intersessional period and provide a revised version to CEP XIII.

(141) IAATO thanked Parties for working with it during the development of these new guidelines, noting the importance of ensuring the practical application of the guidelines in the field. IAATO also recorded that, in the intersessional period, it would make available to the Committee information from the 2008-09 season about landing activity at those sites covered by Site Guidelines.

(142) Following minor amendments, the Committee approved the remaining Site Guidelines and agreed to forward them to the ATCM with the recommendation that they be adopted by means of a Resolution.

Advice to the ATCM

(143) The Committee considered the results of informal discussions led by France to review the current Site Guidelines and assess the extent to which these guidelines contained generic versus site-specific advice. Subject to any guidance from the ATCM, the Committee had agreed to establish an ICG to continue this work and to develop generic guidance for visitors, including by reviewing the environmental elements of the guidelines appended to Recommendation XVIII-1.

(144) The Committee reviewed proposals for eight new site-specific guidelines. The proposed guidelines for Ardley Island were to be revised by the proponents and resubmitted for consideration by CEP XIII. The Committee approved the remaining seven guidelines and forwarded them to the ATCM for adoption by means of a Resolution.

(145) The US introduced IP 1 *Monitoring and assessment using Hierarchical Bayesian Modeling: An approach taken by the Antarctic site inventory* and IP 14 *Antarctic Site Inventory: 1994–2009*, relating to the work of the Antarctic Site Inventory, particularly noting the relevance of the methods described in IP 1 to discussions of long-term monitoring of environmental changes and assessing the cause of detected changes.

(146) New Zealand thanked the US for these two papers which will be very useful to the work of the Committee. Australia noted that the information provided in these papers would be useful for the proposed CEP Tourism study (agenda item 6b).

7d) Other Annex V Matters

(147) Germany presented WP 4 *Second Progress Report on the Discussion of the International Working Group about Possibilities for Environmental Management of Fildes Peninsula and Ardley Island*, recalling that, at CEP XI, it had been agreed that the future of Fildes Peninsula would be discussed in the framework of the International Working Group (IWG).

(148) Germany noted that limited intersessional work had been achieved due to sporadic participation of IWG members. Germany also noted that discussions

on Fildes should continue, including via the CEP Discussion Forum, and at an extra meeting in austral winter 2009 to discuss items related to the management scheme.

(149) Chile expressed its appreciation for WP 4, noting that some progress had been made. Chile drew the meeting's attention to its IP 81 *Notes on a Multiple Protection System for some areas of King George Island: Zones under Annex V and their relevance to Fildes Peninsula and adjacent areas*. Chile suggested that IP 81 could help push forward the work of the IWG.

(150) As agreed by the convenors and the members of the International Working Group, the meeting in austral winter 2009 will take place in Punta Arenas in connection with the COMNAP meeting in August 2009.

(151) The Committee welcomed the progress that had been made and encouraged the IWG to continue its efforts to develop appropriate environmental management mechanisms for this important area.

(152) New Zealand introduced WP 31 *Updated analysis of representation of Annex V categories and Environmental Domains in the system of Antarctic Specially Protected and Managed Areas*. New Zealand noted inviolate reference areas and wilderness values in the categories listed in Annex V of the Protocol are still poorly represented. Protected areas are relatively well represented in the most vulnerable ice-free Environmental Domains, although Domains R, T and U are the ice-free environments which are least represented. These analyses provide background information to the topic of human footprint and wilderness which is listed as priority 2 in the CEP's five year plan. This is important, given Article 3 of the Protocol includes the need to protect wilderness and aesthetic values and the value for the conduct of scientific research in relation to the planning and conduct of all activities in the Antarctic Treaty area.

(153) New Zealand stated that it will aim to bring further information on human footprint and wilderness matters to CEP XIII, with support from interested Members and Observers including COMNAP, ASOC and IAATO, as a contribution to the discussions that are planned. SCAR complemented New Zealand on its analysis, and reminded the CEP that it is in the midst of an analysis of the Environmental Domains Analysis (EDA) which it plans to present at CEP XIII. Romania noted the EDA continued to offer many ideas for CEP consideration.

(154) Australia thanked New Zealand for its paper, welcoming the assessment of existing protected areas against the environmental domains analysis, which would assist the Committee's work to further develop the protected areas system. Australia also noted that consideration of the terms *footprint* and *wilderness* was scheduled in the CEP five-year work plan, and indicated its willingness to further discuss this issue with New Zealand.

(155) COMNAP confirmed its readiness to work with the CEP on issues related to wilderness matters, noting it had relevant data on human activity, bases and installations across the continent.

(156) The Committee thanked New Zealand for their excellent paper and recalled that it had considered the issue of wilderness values several times over the last eleven meetings and agreed that it might be useful to, at some point, ask the Secretariat to prepare a topic summary on the matter.

(157) New Zealand indicated that the work set out in its paper would likely take more than a year, but it envisioned presenting some map-based products for the CEP's consideration at CEP XIII, so that a topic summary on footprint and wilderness would be useful at that meeting.

(158) The Chair commented that progress to date was consistent with the goals laid out in the CEP's five-year work plan.

(159) The United Kingdom introduced WP 34 S*patial protection and management of Antarctic marine biodiversity*, noting that it was based on a presentation for the joint CEP/SC-CAMLR workshop. It provided information on the types of marine spatial protection and management that can be implemented in Antarctic waters. This included details on definition of terms, objectives of marine spatial protection and management, examples of measures currently adopted under CCAMLR and the Antarctic Treaty and a summary of principles agreed by the ATCPs and CCAMLR Members with regard to marine spatial protection and management.

(160) The United Kingdom further noted that appropriate tools for marine spatial protection and management are already in place, that scientific information is now adequate to make progress, and that practical means to cooperate with CCAMLR are available through ATCM Decision 9 (2005). It encouraged the Committee to recommend for approval by the ATCM the recommendations that Parties should:

i. Work towards the establishment of effective, representative and coherent spatial protection of marine biodiversity within the Antarctic Treaty Area by 2012, through the designation of Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) under Annex V of the Protocol on Environmental Protection.

ii. Cooperate as far as possible with CCAMLR and SCAR to ensure that such measures are implemented on a scientific basis, and with the aim of achieving harmonised protection for Antarctic marine biodiversity across the Antarctic Treaty system.

(161) The CCAMLR Representative referred to CCAMLR's bioregionalisation of the Southern Ocean, noting that the Scientific Committee and the Commission had approved SC-CAMLR's identification of eleven priority areas for attention within the bioregionalisation. These areas had been identified based on a variety of indicators that highlighted areas of high heterogeneity within the Southern Ocean, predictive of high biodiversity. The bioregionalisation graphic overlain with the eleven priority areas was made available to the Committee.

(162) The Russian Federation congratulated the UK on their paper, noting that this analysis provides a basis on which to build an effective and efficient system of Antarctic marine protected areas. SCAR also expressed support for the paper, confirming its willingness to cooperate on this issue wherever appropriate and feasible.

(163) The Committee agreed that the eleven areas were useful priority areas for ongoing attention, and further agreed to append the CCAMLR figure to its report as a means of lending CEP endorsement to the eleven priority areas and as a means of focussing future CEP work on the issue (Appendix 4). The Committee urged its Members to focus further work on the development of marine spatial protection and management within, but not limited to, those priority areas which fall within the Treaty area.

(164) Belgium indicated that marine protected areas represent a priority for the country. It flagged the recommendation of the CEP/SC-CAMLR workshop to develop a three year strategy to achieve marine protection considering, but not limited to, the priority areas agreed by SC-CAMLR.

(165) The United Kingdom introduced WP 29 *Towards a representative system of marine spatial protection for the South Orkney Islands*, providing details of a pilot study carried out to investigate the utility of a systematic conservation methodology

in identifying important areas for conserving marine biodiversity. The UK noted that both CEP and CCAMLR had identified the establishment of spatial protection of marine biodiversity as a priority issue, that a proposed methodology was presented at CEP XI and that preliminary results were presented to SC-CAMLR's Working Group on Ecosystem Monitoring and Management (WG-EMM) during 2008. The UK noted that the methodology had been endorsed by CCAMLR's Scientific Committee as one possible approach for the selection of marine areas for protection.

(166) The United Kingdom also drew attention to its information paper IP 11 *Pilot study on identifying important marine areas for conservation around the South Orkney Islands*, which provided further information on the methodology used and the results. The UK suggested that methods such as the one demonstrated provided a useful tool to inform decision making on management of protected areas in the region, although they were not sufficient to provide a definitive answer on which areas should be protected. The UK also noted that the full range of management options discussed in its WP 34 could be used in conjunction with this analysis. The UK encouraged other Members to attempt similar trials and indicated that it would bring the results of further studies to future meetings.

(167) Several Members and ASOC praised the UK's efforts to develop these practical procedures, noting that they provided a systematic and logical approach to the selection of sites for protection. Several Members indicated their willingness to work with the UK in further testing and developing the process. The US commended the UK's trial of this process, noting that the study area chosen had been an ideal test case in that it contained multiple uses and interests including fishing activity.

(168) The Russian Federation questioned whether the establishment of such protected areas would place unnecessary restrictions on vessel traffic and the conduct of marine research programmes. In response, the UK, supported by the CCAMLR Observer, suggested that all uses of any marine area would need to be taken into account in the planning stage prior to the designation of marine areas. The UK further noted that there were currently no such restrictions on shipping in protected areas that had already been designated in the Southern Ocean.

(169) In response to a query from Russia regarding the availability of tables and figures to support the trial process, the UK explained that the paper presented the early stages of the analysis, and that it intended to provide the CEP and CCAMLR with detailed information, maps and data as the research progressed.

(170) The Committee endorsed the methodology demonstrated by the UK as one practical method of selecting and designating marine protected areas and encouraged Members to work with scientific and CCAMLR colleagues to trial this and other methods, particularly in the eleven priority areas highlighted by CCAMLR.

Advice to the ATCM

(171) The Committee agreed to:

- Develop a strategy and work towards the establishment of effective, representative and coherent spatial protection of marine biodiversity within the Antarctic Treaty Area within the next three years, through the designation of Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) under Annex V of the Protocol on Environmental Protection.
- Cooperate as far as possible with CCAMLR and SCAR to ensure that such measures are implemented on a scientific basis, and with the aim of achieving harmonised protection for Antarctic marine biodiversity across the Antarctic Treaty System.
- Focus further work on the development of marine spatial protection and management within, but not limited to, those priority areas agreed by CCAMLR (Appendix 4 to this Report) which fall within the Antarctic Treaty Area.

(172) ASOC presented IP 41 *Marine Protected Areas in the Antarctic* outlining the case for establishing a network of protected areas across the Southern Ocean. ASOC commented that the matter required a sense of urgency due to the effects of climate change. ASOC endorsed the use of the eleven priority areas identified by CCAMLR as a reference in establishing the protected area network, and urged the CEP to work with the Scientific Committee and CCAMLR to move this project forward as quickly as possible.

(173) France thanked ASOC for its paper and endorsed the sense of urgency with respect to the designation of a system of protected areas. France noted the progress being made in other world oceans under other international arrangements and indicated that it was timely for the Antarctic Treaty system to make similar progress with respect to the Southern Ocean.

(174) ASOC introduced IP 48 rev. 1 *A Ross Sea MPA: Preservation for Science*, noting that strong marine protection of sufficient scale is needed to understand the indirect effects of human activity and climate change on the Southern Ocean and its food webs. Noting that a recent study had ranked the Ross Sea as the least affected area within the entire world ocean, ASOC proposed that it should be preserved for scientific research values, as well as a global reference site to monitor the capabilities of living marine organisms to adapt to climate change. ASOC urged the comprehensive protection of the Ross Sea in keeping with the environmental values of the Treaty, its Protocol and CCAMLR. ASOC also invited all Members to participate in a seminar on the Ross Sea on 21st May 2009 to be co-hosted by the Marine Conservation Congress. Further information can be found at: *http://www2.cedarcrest.edu/imcc/program.html*.

(175) The US thanked ASOC for its paper and noted that, as an indication of the importance of the Ross Sea, CCAMLR intends to hold a workshop to ensure decision rules and management of toothfish are sufficiently precautionary.

(176) Ukraine briefly introduced IP 62 *Possibilities for broad-scale management of the Vernadsky station area*, noting that several national Antarctic programmes and non-governmental organisations had interests in this area, which is considered an extremely important site for long-term environmental monitoring. Ukraine noted that this proposal was the first of its type for Vernadsky station, and represented an attempt to harmonise current and future management approaches in the region of Vernadsky station. Members were invited to provide comments to Ukraine to assist with further development of this initiative.

(177) The following papers were also submitted under this agenda item:

- IP 50 *Research Project "Current Environmental Situation and Management Proposals for the Fildes Region* (Antarctic)" (Germany)
- IP 54 *Report of the Larsemann Hills Antarctic Specially Managed Area (ASMA) Management Group* (Australia, China, India, Romania, Russian Federation), and
- IP 81 *Notes on a Multiple Protection System for some areas of King George Island: Zones under Annex V and their relevance to Fildes Peninsula and adjacent areas* (Chile).

Item 8: Conservation of Antarctic Fauna and Flora

8a) Quarantine and non-native species

(178) The Secretariat presented SP 11 *Topic Summary of CEP discussions on Non-native species (NNS) in Antarctica*, summarising past discussions by the Committee about non-native species. The Secretariat recalled that this summary had been requested by CEP XI and that the intention was to provide a central resource for the CEP's continuing consideration of this important topic, which received the highest priority in the CEP five-year work plan.

(179) The Committee thanked the Secretariat for the paper, noting that its advanced distribution had facilitated delegates' preparation for scheduled CEP discussions on the matter, and that the embedded hyperlinks to the documents referenced were particularly helpful.

(180) On behalf of its co-authors, Australia introduced WP 5 A *Work Program for CEP Action on Non-native Species* (Australia, France and New Zealand). It recalled the Committee's previous agreement that action to address non-native species concerns was the highest priority for the Committee's attention, and had been identified as a priority 1 issue in the five-year work plan. The paper was intended to build on the general actions identified in the work plan and included a suggested detailed work plan to build on the recommendations arising from the 2006 workshop on *Non-native species in the Antarctic*.

(181) Australia, France and New Zealand recommended that the Committee:

- agree to the programme of work to address non-native species concerns, contained in Attachment A to WP 5, and populate the CEP five-year work plan accordingly;
- initiate intersessional work, following the Terms of Reference contained in Attachment B to WP 5, to commence development of a "quarantine manual"; and
- implement, and annually review progress with, the work program.

(182) Many Members expressed their support for the proposals and indicated their willingness to participate in the proposed work plan. Norway suggested that there were useful synergies with the Arctic and best practices could be usefully replicated in Antarctica.

(183) SCAR noted that there was a lack of data for many areas, particularly regarding terrestrial biodiversity, and that it would be difficult to develop a surveillance plan for an area without baseline biodiversity information. SCAR indicated that it was willing to report to the next Committee meeting on high risk areas and to propose a set of research needs that address the lack of appropriate data.

(184) The Committee welcomed SCAR's offer to develop a list of research needs for consideration by the Committee.

(185) Belgium supported SCAR's remark and noted that, three years after the 2006 workshop, no study has yet focused on microbial communities.

(186) Several Members highlighted the importance of conducting the work in an inclusive manner, involving a broad spectrum of Members, as well as other relevant experts. It was also noted that any recommendations arising should be practical and able to be implemented, which would be aided by the involvement of participants with operational experience. SCAR and IAATO indicated their willingness to be involved.

(187) The United States suggested that robust participation by Members could be facilitated through a variety of methods, including online forums, workshops, intersessional groups. It noted that it could also be useful to provide regular progress reports to all Members.

(188) Romania emphasised the need to promote education and awareness, and to focus on both introduction of species from outside Antarctica and transfer of Antarctic species from their home ranges into areas where they had not previously been found.

(189) Spain noted that the intentional introduction of species for approved purposes was addressed in the Protocol. France remarked that, based on past experience, prevention was much cheaper and easier than eradication.

(190) Australia welcomed Members' comments and support, agreeing that it would be useful to draw on experience in the Arctic, to promote broad participation by Members, and to involve other components of the Antarctic Treaty system. It noted that the proposed work programme prioritised the development of preventive measures, but that surveillance was of course an important component of the "Prevention / Surveillance / Response" approach.

(191) Australia noted that the joint CEP / SC-CAMLR workshop had agreed that the CEP could take the lead on the development of measures to prevent marine introductions, while noting that the workshop's report and its recommendations would need to be approved by both the CEP and the Scientific Committee. Australia also mentioned WP 39, submitted for consideration by the ATCM, which proposed amendments to Annex II to incorporate provisions to address the unintentional introduction of non-native species. Australia encouraged Members to show their support for those amendments.

(192) The Committee endorsed the establishment of an ICG, led by Dr Yves Frenot, and agreed the following Terms of Reference:

With reference to the final report of the 2006 workshop on Non-native Species in the Antarctic (ATCM XXIX / WP13), papers submitted to previous CEP meetings on this issue (as outlined in SP11) and those submitted to CEP XII, the ICG will:

i. Develop a suggested overall objective and key guiding principles for Parties' actions to address non-native species concerns.

ii. Develop a suggested set of generally applicable measures to prevent the introduction of non-native species, including the transfer of species between sites in Antarctica.

iii. Identify particular aspects of Antarctic operations for which further work might be required in order to develop specific guidance.

iv. Report to CEP XIII on progress with the above.

(193) The Committee also endorsed the program of work contained in Attachment A to WP 5 and agreed to incorporate these actions into its five-year work plan.

(194) South Africa introduced WP 23 *Propagule transport associated with logistic operations: a South African appraisal of a regional issue*, informing the meeting that, between 2006 and 2008, it had undertaken surveys to assess the seed propagule load associated with resupply of its stations on Marion and Gough Islands and SANAE IV. The survey involved quantifying propagule pressure both in cargo and in expeditioner luggage. Cost-effective changes to operational procedures had been developed to reduce propagule transfer to the Antarctic region in cargo and on clothing. South Africa invited members to participate and noted that further research on intra-regional propagules was also needed.

(195) Several Members noted that the data arising from South Africa's research would be very useful for the Committee's work. The Netherlands also noted that this research was compatible with similar work conducted under the IPY Aliens in Antarctica project.

(196) The United Kingdom presented WP 32 *Procedures for vehicle cleaning to prevent transfer of non-native species into and around Antarctica* on practical guidelines to prevent the transport, via vehicles, of non-native species into and within the Antarctic Treaty area. It stated that vehicles are transported into Antarctica by ship and aircraft from a wide range of locations, and could have biological material and soil attached to them. The UK stated that these guidelines demonstrate the level of detail required for Antarctic personnel to implement effective biosecurity.

(197) Recognising that other Parties had developed various guidelines, the United Kingdom asked the CEP to consider the proposal and develop a single set of guidelines for wider use and adoption by the ATCM. The UK volunteered to coordinate drafting of proposed guidelines on vehicle cleaning intersessionally.

(198) Several Members expressed support for the procedures outlined in WP 32 and noted that they already implement similar practices. ASOC thanked the UK for its proposal and highlighted the need for taking a precautionary approach while a long-term strategy is being developed

(199) The Committee welcomed the UK's offer to coordinate comments from interested Members during the intersessional period, in conjunction with the ICG to develop guidance on non-native species.

(200) The United Kingdom introduced WP 33 *Review of provisions relating to non-native species introductions in ASPA and ASMA management plans*. Additional information was provided in IP 12 A*SPA and ASMA management plans: review of provisions relating to non-native species introductions*. The review indicated that, although most management plans include some provisions for preventing non-native species introductions, these were not consistent across areas, and that management plans for marine areas did not include biosecurity measures.

(201) The UK proposed that the SGMP update the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas* to include more consistent procedures for controlling non-native species introductions and translocation, and recommended that site specific biosecurity measures be

implemented where necessary. It also noted that protected areas would benefit from the development and implementation of a more standardised biosecurity procedure across Antarctica, and that consideration be given to developing measures to prevent marine introductions.

(202) SCAR noted that inter-site transfer of non-native species is also a concern because it introduces the possibility of genetic contamination, which is an issue deserving careful thought. SCAR offered help if needed.

(203) Australia noted similarities between the work proposed by the United Kingdom and the work to be undertaken by the SGMP to develop standard wording for management plan provisions regarding "restrictions on materials and organisms which may be brought into the site". It also noted that the SGMP could usefully consult with the ICG to develop guidance on non-native species for inclusion in management plans, while noting the SGMP's view that proponents should continue to develop site-specific provisions as appropriate.

(204) SCAR presented IP 4 *SCAR's environmental code of conduct for terrestrial scientific field research in Antarctica*, providing a guidance for scientists undertaking terrestrial scientific field research in Antarctica. SCAR advised that this new version of the code had been reviewed by the SCAR community and by COMNAP and that it had been approved by the 30th SCAR Delegates Meeting in 2008. SCAR noted that measures for preventing the introduction of alien propagules had been unified, using common terminology, for field work in Antarctica, including Protected Areas. SCAR encouraged all Parties to implement the code.

(205) SCAR introduced IP 10 rev. 1 *The IPY Aliens in Antarctica Project*, which gave a preliminary report on one aspect of the project conducted by Dutch scientists. SCAR noted that a comprehensive report on all aspects of the project would be provided to the next CEP meeting.

(206) New Zealand introduced IP 36 *A framework for analysing and managing non-native species risks in Antarctica* on development of guiding principles and a framework for analysing non-native species risks for its national Antarctic programme. It noted that an understanding of risk was fundamental to managing the issue of non-native species in Antarctica and that the analysis of risk allowed management efforts to be focussed where it would be most effective.

(207) Australia presented IP 55 *Improvements to the Alien Species Database*, which had been co-authored by SCAR. The paper recalled the Committee's agreement at

CEP XI to use the Biodiversity Database maintained by the Australian Antarctic Data Centre (AADC) as the central database of non-native species occurrences in the Antarctic region. The AADC was considering ways to modify the database to improve the management of non-native species records, including by allowing for images to be associated with species records to assist with species identification and by developing an online data entry form to provide a consistent format for entering and distributing new species records. Australia encouraged Members to submit alien species records to the database, and welcomed feedback from Members on the proposed enhancements.

(208) The Committee recognised the importance of a centralised data repository and encouraged all Parties to input data to the Alien Species database. It was also noted that the five-year work plan was guiding the work of the CEP, as reflected in the substantive papers submitted to the meeting on the subject of non-native species.

(209) The following paper was submitted under this agenda item: IP 12 *ASPA and ASMA management plans: review of provisions relating to non-native species introductions* (United Kingdom).

Advice to the ATCM

(210) Noting that the issue of non-native species in Antarctica is placed as a high priority issue on the CEP's five-year work plan, the Committee wishes to draw the ATCM's attention to the CEP's agreed programme of work on non-native species, to be conducted by an intersessional contact group over the next two years.

8b) Specially protected species

(211) On behalf of ACAP, the Chair introduced IP 30 *Standardised methodology for counting southern giant petrels* which presented ACAP's response to the Committee's request for advice on standardised methodology for undertaking population counts of southern giant petrels. ACAP had noted that the use of standardised methods would greatly add to the value of population data by improving its comparability.

(212) The paper also contained the *ACAP Species Assessment for the southern giant petrel*, which collated and summarized information on taxonomy, conservation listings and plans, breeding sites, population numbers and trends, as well as demographic data, threats, foraging ecology and distribution, and any data gaps for the species that still need to be addressed. ACAP had noted that its population

dataset was incomplete and that some of the population data for southern giant petrels breeding in Antarctica and used by SCAR during its May 2008 workshop to review the status of the species had not been made available to ACAP.

(213) France expressed some concern about the reference in Footnote 2 of Annex 7 to potential conduct of census work by inexperienced personnel, noting the difficulty of performing such work on particularly sensitive species such as the southern giant petrel. SCAR welcomed this information from ACAP and supported the continued provision of advice by ACAP.

(214) Australia noted its support for the proposed methodology, and felt that it would be appropriate for Parties to support regular population counts using standardised methodology, with priority given to sites where current data were insufficient. Australia also recalled the Committee's previous agreement that there was a need to take further steps to prevent disturbance to this species and to make status and trend data available to ACAP.

(215) Australia suggested that it might be appropriate to update Resolution 2 (2007) on Conservation of the Southern Giant Petrel, which had been adopted before the 2008 SCAR workshop and the recent advice from ACAP.

(216) The Committee welcomed Australia's suggestion, and agreed to forward to the ATCM for adoption a proposed Resolution on Conservation of the Southern Giant Petrel. The Committee also agreed to convey to ACAP its concern about the reference to inexperienced personnel in the suggested standardised monitoring methodology.

Advice to the ATCM

(217) The Committee noted the progress that had been made in the assessment of the status of the southern giant petrel. In light of the current state of knowledge of this species, the Committee recommends to the ATCM the adoption of a Resolution on the Conservation of Southern Giant Petrels as an update to Resolution 2 (2007).

8c) Marine acoustics

(218) IP 51 *Strategic assessment of the risk posed to marine mammals by the use of airguns in the Antarctic Treaty area* (Germany) was submitted under this agenda item.

8d) Other matters relating to the conservation of Antarctic fauna and flora

(219) The United States briefly introduced IP 15 *Cumulative impacts from walking in the Dry Valleys* and IP 80 *Distinguishing human impacts at Palmer Station, Antarctica,* noting that these papers represent examples of the use of science to address issues of interest to the CEP and the ATCM's Tourism Working Group.

Item 9: Environmental Monitoring and Reporting

9a) Climate Change

(220) The United Kingdom presented WP 38 *Climate change and the Antarctic environment: Management implications,* highlighting some of the implications of regional and global climate change in Antarctica and the Southern Ocean and how these may direct the future work and priorities of the CEP. The UK suggested that, for the CEP to undertake management effectively, it will be essential to determine the absolute risks, uncertainties, impacts and timescales of various processes which are implications of climate change. Given potential overlaps and finite resources, it was important that the CEP, SC-CAMLR and SCAR continue to work closely together on issues of common interest.

(221) SCAR introduced IP 5 *SCAR's Antarctic Climate Change and the Environment (ACCE) Review Report*, noting that the effects of increased greenhouse gases were already evident. SCAR summarised a variety of scientific research conducted in Antarctica pointing to atmospheric and marine warming and consequences for terrestrial and marine physical environments. Effects could be expected to increase, given the expected further increase in greenhouse gases over the next century. SCAR showed how the latest numerical models project change into the future and proposed to facilitate annual updates on the State of the Climate and Environment. SCAR reiterated the importance of examining these issues in conjunction with increased human activities in Antarctica, including the emissions generated by operations conducted in Antarctica.

(222) SCAR recommended CEP Members:

- take note of the latest scientific findings and notify SCAR on the latest research results from national Antarctic programs;
- support and foster research on Antarctic climate change focusing on those aspects that are least understood;

- support research on the distribution of terrestrial species and the spatial distribution of genetic diversity, especially in rapidly warming areas and areas that seem prone to an elevated risk of biological invasion owing to climate change; and
- assess the contributions that their Antarctic operations make to global warming with a particular regard to greenhouse gas emissions, and adopt suitable mitigating protocols commensurate with the potential for impact.

(223) The CCAMLR representative acknowledged the collaboration alluded to by SCAR and noted that CCAMLR had identified climate change as an area of high priority for research and management, particularly in relation to target species that are likely to be affected.

(224) Norway welcomed the report from SCAR and underlined the need to consider the management implications of climate change in Antarctica. Norway proposed that the ATCM should agree to convene an Antarctic Treaty Meeting of Experts to discuss implications of climate change for management and governance of the Antarctic region, and noted its willingness to host such a meeting in 2010.

(225) Many Members thanked Norway for the offer, agreeing, particularly in the context of the recent Ministerial meeting, that a meeting of climate change experts would be a substantive step in discussing these issues. Germany and Sweden noted the proposed meeting as an opportunity to discuss and compare northern and southern polar sciences and in relation to the Copenhagen meeting in 2009.

(226) Russia considered that further research is necessary and noted that the Arctic Council's Antarctic Climate Impact Assessment (ACIA) report might serve as an example for the Antarctic Committee Members. The United Kingdom agreed with Russia that all information relevant to global climate change, particularly that compiled by the IPY, should be used to inform decisions. The United Kingdom reiterated that work detailing current and anticipated scientific progress on climate change would be useful in addressing gap areas.

(227) New Zealand agreed that the risk assessment proposed by the United Kingdom in WP 38 would be useful for identifying further research and monitoring needs. New Zealand commended Australia and other Members on their use of wind power as an energy resource with reduced greenhouse emissions and noted its imminent installation of three such generators in collaboration with the United States.

(228) ASOC introduced IP 35 *Policy implications arising from SCAR's report: Antarctic climate change and the environment*, noting the policy implications arising from the SCAR Review Report (ACCE). ASOC urged Members to consider those implications and ask them to take concrete action at local-regional level in Antarctica to assist mitigation of the effects of climate change in Antarctica.

(229) Korea noted the importance of SCAR's report and encouraged SCAR to be actively involved in the UNFCCC activities, by emphasising the important role of the Antarctic in the global climate system.

(230) SCAR offered its services in deciding where to conduct climate change monitoring and how best to evaluate the most effective indicators of climate change. As such, SCAR offered to provide a review paper as suggested by the United Kingdom by next year, or in two years at the latest, following consultation with other interested Parties. The United Kingdom gratefully accepted SCAR's offer.

(231) Australia noted that the United Kingdom's suggestion to assess the implications of climate change impacts for management of the Antarctic environment was consistent with the CEP's five-year work plan, and agreed that it would be appropriate to initiate a risk assessment for the purposes of informing the CEP's deliberations. Australia also noted that it would report to the CEP on a workshop on *Monitoring climate change impacts: establishing a Southern Ocean Sentinel program*, to be held in Hobart shortly following the CEP meeting, which would consider what needs to be done to develop an integrated scientific programme to estimate the rates of change in Southern Ocean ecosystems as a result of climate change.

Advice to the ATCM

(232) The Committee strongly endorsed the recommendations made by SCAR with regard to scientific research to identifying gaps in knowledge about climate change and its impacts. Additionally, the Committee appreciated SCAR's offer to help with these efforts and welcomed the proposed annual updates.

(233) The Committee supported the United Kingdom's risk assessment approach to management and welcomed suggestions on how that might be taken forward.

(234) The Committee supported Norway's suggestion that an Antarctic Treaty Meeting of Experts to discuss the implications of climate change for management and governance of the Antarctic region should be held, and welcomed Norway's willingness to host such a meeting in 2010 with appreciation.

9b) Other Environmental Monitoring and Reporting Matters

(235) The UK presented WP 41 *Development of Environmental Data Services to inform the Environmental Impact Assessment (EIA)*, which proposed that the CEP work with SCAR and other bodies as appropriate (in particular COMNAP and CCAMLR) in order to facilitate easier access to, and ensure better co-ordination of, environmental monitoring data and information for development of EIAs.

(236) SCAR indicated that it would be happy to assist, and noted that the list of all SCAR database was available on its website.

(237) The Secretariat recalled that Members were obliged to submit some monitoring information under the information exchange requirements of the Protocol. Argentina suggested that the Secretariat might consider adding a link from the CEP website to the page on the SCAR website listing the SCAR databases.

(238) Australia noted that the need to effectively manage environmental data had been raised in many earlier ATCM and CEP discussions as important to underpinning the environmental practices and the functions of the CEP, with benefits extending to the EIA process and beyond. Australia noted that it had held informal discussions with some representatives of the Standing Committee on Antarctic Data Management (SC-ADM), and suggested that it might be useful to request that group to provide a report to the Committee, through SCAR, on how it could assist the CEP's work.

(239) The Committee agreed with this suggestion, and SCAR indicated its willingness to provide such a report for the next meeting.

(240) New Zealand introduced IP 37 *Joint VISTA – Oceanites Antarctic Project*, noting that both monitoring schemes were very similar in aims and objectives and worked together to standardise opportunistic monitoring programs. New Zealand noted the link between this work and the proposed tourism study as relates to the United States' IP 1 on the use of statistical methods. New Zealand recommended a coordinated approach with monitoring in other Antarctic regions, particularly the Oceanites approach in the Antarctic Peninsula. It also informed that representatives from the two programmes had been working together in order to share ideas and work towards standard approaches to site monitoring.

(241) IAATO welcomed this work, expressed its pleasure in working with Oceanites and anticipated the expansion of a similar study to the Ross Sea area.

IAATO noted that the Polar View programme mentioned in IP 42 *An Update on the Antarctic Polar View programme – Information from satellite observations for safer and efficient sea ice navigation* (United Kingdom) was an important source of sea ice information promoting save and efficient navigation.

(242) With regard to IP 68 *Antarctica – An overview of 50 years of British scientific monitoring (1959–2009)*, the United Kingdom noted the brochures would be made available to Members during the meeting.

(243) SCAR introduced IP 69 *Persistent organic pollutants in the Antarctic: an Update*, recalling that the Stockholm Convention Secretariat had requested advice from the Antarctic Treaty Parties on information about persistent organic pollutants (POPs) in the Antarctic region. SCAR advised that the newly formed SCAR Action Group on Environmental Contamination in Antarctica (ECA) had undertaken this task and produced a lengthy report, the full edited version of which would be completed shortly after the meeting.

(244) The Committee thanked SCAR for its work and requested that SCAR forward the final report to the Chair once completed.

Advice to the ATCM

(245) The Committee welcomed SCAR's advice about its report on persistent organic pollutants (POPs) in the Antarctic region, prepared in response to a request from the Stockholm Convention Secretariat in 2008. The final edited report would be available shortly after the meeting. The ATCM might wish to consider the process for conveying this information to the Stockholm Convention Secretariat.

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(246) Ecuador presented IP 104 *Proyecto para el Estudio de Contaminantes Orgánicos Persistentes (COPS) y Mercurio en la Red Trófica de la Antártida* (Ecuador and Canada) noting that global distillation patterns of organic contaminants make Antarctica vulnerable to pollutant deposition. Ecuador and Canada were undertaking further research on the transport and fate of such contaminants in terrestrial and marine areas of Antarctica, including the biosphere, and would report on the results of this work.

(247) IP 100 *Two new Antarctic Related National Institutes recently established in Brazil* (Brazil) was also submitted under this agenda item.

Item 10: Inspection Reports

(248) Japan noted that it is planning to undertake a formal Treaty inspection in the near future.

(249) Norway informed the Committee that it would submit a report to the next meeting summarising findings from the inspection carried out by Norway in February 2009.

Item 11: Cooperation with Other Organisations

(250) Belgium presented WP 52 *Report of the CEP Observer to the XXX SCAR Delegates Meeting held in Moscow, 14–16 July 2008*, summarising the reports and conclusions made during the 30th SCAR meeting. Belgium noted that several parts of the report related to matters of direct interest to the CEP and the ATCM, notably SCAR's development of a code of conduct for scientific fieldwork, coordination of scientific research in King George Island, a code of conduct for sub-glacial exploration and, in particular, the report of the Standing Committee on the Antarctic Treaty System (SC-ATS). SC-ATS provides the operational linkage with the CEP and ATCM and coordinates the development of papers for the annual Treaty and CEP meetings.

(251) Belgium noted that a recent review of SC-ATS had made a series of recommendations, including increasing the resources available to the standing committee. These recommendations had all been endorsed by the SCAR Delegates. Belgium further noted that the five major groups of SCAR were reviewed as "excellent" in an external audit of SCAR. In addition, Belgium noted the positive trend in increased communication between ATS bodies and commented that having a CEP Observer invited to the SCAR Delegates Meeting is one example.

(252) Noting that this was the first time a CEP observer attended the SCAR Delegates Meeting, the Chair noted the benefit to the Committee of this cooperation. The Committee thanked Hugo Decleir for his role as CEP's first observer to the SCAR Delegates Meeting and welcomed this as a sign of increasing cooperation between CEP and SCAR. As there is not a SCAR Delegates Meeting in the coming intersessional period, no CEP observer is required to be nominated at CEP XII.

(253) SCAR presented IP 7 *SCAR's role in the Antarctic Treaty system* as a means of conveying a clear and common understanding of SCAR's current role within the current Antarctic Treaty system framework. SCAR reaffirmed its advisory role

to the CEP, its independence, and its commitment to bring important information to Members. SCAR highlighted its six guiding principles of operation as being:

- Commitment to giving the best, most accurate and up-to-date advice to the ATPs.
- Assessments of scientific data and information are works in progress and any and all conclusions are tempered and qualified as being to the "best of our knowledge" at the time they are issued.
- SCAR has a yearly obligation to the ATCM/CEP to provide new or updated advice. Deadlines are inevitable and may be beyond the control of SCAR so a "best effort" is the goal within time constraints, but not at the sacrifice of quality.
- SCAR has elected to rely primarily, if not exclusively, on peer-reviewed, publicly available science and information as a quality control/quality assurance mechanism.
- Broad, inclusive, and open consultation is the basis for producing SCAR advisory documents.
- SCAR has ultimate responsibility for the quality and accuracy of its advice, accepts this responsibility, and highly values its reputation as an objective, authoritative and independent source of advice, as this is fundamental to what SCAR is as an organization.

(254) SCAR encouraged all Members to review IP 7 in order to better understand and establish realistic expectations for SCAR's role in contributing to the work of the CEP.

(255) The Committee thanked SCAR for its paper and welcomed the ongoing and developing relationship between SCAR and the CEP. The Chair further noted that the CEP is reliant upon external sources, including SCAR, for the provision of high quality and timely scientific advice that is outside the expertise of the Committee to inform the Committee's work.

(256) To improve communication and ensure common expectations, the CEP chair agreed to write to SCAR following each CEP meeting, outlining those actions requested to SCAR by the CEP.

(257) The Chair introduced WP 14 *Report of the CEP Observer to the twenty-seventh meeting of the Scientific Committee to CCAMLR; 27 – 31 October 2008*. The Chair drew the Committee's attention to several matters arising from SC-CAMLR XXVI, noting in particular:

- The CCAMLR Performance Review, which was submitted to CCAMLR and contained 107 recommendations from the review panel and in which the CEP Chair had participated.
- The Scientific Committee's Working Group on Ecosystem Monitoring and Management (WG-EMM) continues to give attention to marine spatial management and further development of the Southern Ocean bioregionalisation. WG-EMM had also established a new subgroup on the status and trends of predator populations.
- The Scientific Committee had also made significant progress in addressing the issue of bottom fishing and identification and mitigation of impacts to vulnerable marine ecosystems (VMEs) in accordance with UNGA Resolution 61/105.
- CCAMLR's ongoing success in minimising or eliminating seabird and seal by-catch in all high seas fisheries within the Convention area.
- CCAMLR's consideration of a range of issues related to climate change, many of which overlap with the CEP's consideration of this issue.

(258) The CCAMLR Observer noted with appreciation the significant contribution that the CEP Chair had made to the CCAMLR Performance Review, and that this review had amongst other matters encouraged the holding of the joint workshop between the CEP and SC-CAMLR.

(259) The CCAMLR Observer further commented on the significance of SC-CAMLR's timely and expeditious work on the issue of VMEs in response to the 31 December 2008 deadline imposed by UNGA Resolution 61/105 as described in IP 3 (ATCM agenda item 4). In a very short period of time, CCAMLR had developed procedures, identified areas, and engaged fishermen in data collection resulting in five closed areas prior to the UN deadline. In this regard, CCAMLR was well in advance of RFMOs.

(260) The Committee thanked the Chair and the CCAMLR Observer for this information and requested that the Chair attend the next SC-CAMLR meeting as its observer.

(261) Russia, as one of the four workshop convenors, introduced WP 55 R*eport of the Joint CEP/SC-CAMLR Workshop*, noting the symbolism of the first meeting of the CEP and SC-CAMLR on the 50th Anniversary of the signing of the Antarctic Treaty. Russia commented that the joint workshop was a clear indication that the conservation of Antarctica and its wildlife are of critical importance to both bodies. Russia further noted that the joint workshop had provided a significant step towards generating greater cooperation. Outcomes of the workshop were an improved shared understanding of differences, similarities and overlaps in the objectives and functions of the two committees.

(262) The workshop report also provided a series of recommendations around five key topics with regard to establishing common interests, identifying mechanisms to address these interests, and identifying lead bodies for action on key issues of mutual interest. The workshop had also highlighted the importance of science and strong data quality in policy as a significant outcome of the joint workshop.

(263) Australia called the Committee's attention to the joint workshop's benefit in understanding SC-CAMLR's work and the resulting opportunities for cooperation between SC-CAMLR and the CEP. Australia noted that the joint workshop suggested the CEP take the lead on non-native species, already part of the CEP Five-Year Work Plan, and the special protection of "overlap species" in the Antarctic Treaty area, namely seals, penguins, and seabirds.

(264) Uruguay further commented that, in the past, the CEP has not always had the chance to engage the expertise it would like and that more and better science would be beneficial in the future through the help of SCAR, SC-CAMLR, and independent groups. France also stressed the importance for the CEP of workshops in general, noting the benefit of the in-depth work such a forum provides. France recalled the workshop preceding CEP IX in Edinburgh in outlining the CEP Five-Year Work Plan and the joint CEP/SC-CAMLR workshop in outlining future collaboration between the CEP and SC-CAMLR.

(265) The United States echoed support for future workshops and suggested that adding a workshop to the days preceding a regularly scheduled meeting was an agreeable arrangement. ASOC expressed its support of the joint workshop. In particular, ASOC saw the workshop as a positive step toward protecting the marine environment and managing a system of marine protected areas.

(266) The Chair also noted a recommendation by the joint workshop to give further consideration to the structure of the information exchange report between the CEP

and SC-CAMLR. The Chair offered to look at this and to develop a format focusing on key issues and avoiding information pertinent only to one of the bodies.

(267) The Committee welcomed the workshop report and endorsed the recommendations. In doing so, the Committee commended the report and its recommendations to SC-CAMLR and stressed the importance of maintaining momentum on the issues identified by the workshop.

(268) The Committee and the CCAMLR observer regretted that the CCAMLR Chair, Dr Carlos Moreno, could not attend the joint workshop due to current ill-health. Dr Moreno's presence was missed and the Committee conveyed its best wishes to him. Chile thanked the Committee for its concern and offered to relay this sentiment to Dr Moreno.

(269) ASOC introduced IP 52 *Protecting the Antarctic Marine Ecosystem: A Role for the ATCM*, urging the ATCM to become more involved in issues related to the protection of the Antarctic marine ecosystem. ASOC noted that, whilst recognising the role of CCAMLR, the ATCM had ultimate responsibility for the protection of the Antarctic environment as a whole. ASOC emphasised that the ATCM and CCAMLR should increase their efforts to address the threats of climate change, fishing, marine pollution, and bioprospecting. ASOC further noted that the ATCM should support CCAMLR to protect krill and thus protect predators under Annex II.

(270) Australia noted that ACAP's paper, IP 31 *Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels*, had been introduced under ATCM Agenda Item 4.

Item 12: General Matters

(271) No papers were received under this Agenda Item.

Item 13: Election of Officers

(272) The Committee expressed its warm appreciation to Dr Yves Frenot whose term as first Vice-chair would conclude at the end of CEP XII. The Committee recognised with gratitude the significant contribution that Dr Frenot had made to the work of the Committee during his term as Vice-chair.

(273) The Committee elected Ms. Verónica Vallejos from Chile to the position of Vice-chair and warmly congratulated Ms. Vallejos on her appointment.

Item 14: Preparation for CEP XII

(274) The Committee adopted the provisional agenda for CEP XIII (Appendix 3).

(275) The Committee made further changes and updates to its prioritised five-year work plan in accordance with the outcomes to CEP XII (Appendix 1).

Item 15: Adoption of the Report

(276) The Committee adopted the draft Report.

Item 16: Closing of the Meeting

(277) The Chair closed the meeting on Thursday 9 April 2009.

ANNEX 1

CEP XII Agenda and Final List of Documents

Paper No	*Title*	*Submitted By*

Item 1: Opening of the Meeting

SP 1	ATCM XXXII – CEP XII Agenda and Schedule	Secretariat

Item 2: Adoption of the Agenda

Item 3: Strategic Discussion on the Future of the CEP

Item 4: Operation of the CEP

WP 7	Amendments to the Rules of Procedure for the Committee for Environmental Protection	Australia
IP 58	Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Japan
IP 59	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2008 – 2009	Uruguay
IP 67	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2008-2009	Italy
IP 73	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Romania
IP 97	Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente – Expedición 2008-2009	Ecuador
SP 8	Electronic Information Exchange System: A report on the first operational season	Secretariat

Item 5: International Polar Year

WP 48	IPY Report: Accomplishments and challenges	SCAR
IP 20	Antarctic Treaty Summit: Science-Policy Interactions in International Governance	SCAR
IP 40	Brief Introduction on the Third Chinese National Arctic Marine Survey – IPY China Programme	China
IP 56	Australian-led Research During the International Polar Year	Australia

Item 6: Environmental Impact Assessment

6a) Draft comprehensive environmental evaluations

IP 29	Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica	India

Paper No	Title	Submitted By

6b) Other EIA matters

WP 12	Environmental Aspects and Impacts of Tourism and Non-governmental Activities in Antarctica: Draft Project Scope	Australia, France & New Zealand
IP 2	Impacts of local human activities on the Antarctic environment: A review	ASOC
IP 21	Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Proposed New Indian Research Base at Larsemann Hills, East Antarctica	India
IP 23	Tourism and Land-based Facilities in Antarctica	ASOC
IP 53	Key Elements of a Strategic Vision for Antarctic Tourism	ASOC
IP 72	Initial Environmental Evaluation Law-Racovita Station	Romania
IP 87	IAATO Field Operations Manual (FOM)	IAATO
SP 10	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2008 and March 31st 2009	Secretariat

Item 7: Area Protection and Management Plans

7a) Management Plans

WP 8	Subsidiary Group on Management Plans – Report on Term of Reference 4: Improving Management Plans and the Process for their Intersessional Review	Australia
WP 20	Revision of Management Plan for Antarctic Specially Protected Area No 152: Western Bransfield Strait	United States
WP 21	Revision of Management Plan for Antarctic Specially Protected Area No 153: Eastern Dallmann Bay	United States
WP 22	Revision of Management Plan for Antarctic Specially Protected Area No 121: Cape Royds, Ross Island	United States
WP 24	Revision of Management Plan for Antarctic Specially Protected Area No 113: Litchfield Island, Arthur Harbor, Anvers Island, Palmer Archipelago	United States
WP 25	Revision of maps and text for the Management Plan for Antarctic Specially Managed Area No 7: South-west Anvers Island and Palmer Basin	United States
WP 27	Review of Antarctic Specially Protected Area (ASPA) No 104	New Zealand
WP 40	Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 136 Clark Peninsula and 162 Mawson's Huts, and Antarctic Specially Managed Area (ASMA) 3 Cape Denison	Australia
WP 42	Review of Antarctic Specially Protected Area (ASPA) No 142 – Svarthamaren	Norway
WP 51	Subsidiary Group on Management Plans – Report on Terms of Reference #1 to #3: Review of Draft Management Plans	Australia
IP 8	Protected Area Management Plan: Five year review of Beaufort Island – ASPA 105	New Zealand

Paper No	Title	Submitted By
IP 61	The management of Terra Nova Bay (Ross Sea) area: an ASPA or an ASMA?	Italy
IP 66	Revision of Maps for Antarctic Specially Managed Area No 2: McMurdo Dry Valleys, Victoria Land	United States
SP 9	Register of the status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	Secretariat

7b) Historic Sites and Monuments

WP 3	Antarctic Protected Area System: Revised list of Historic Sites and Monuments – Measure 3 (2003). Guidelines for its application	Chile
WP 35	Proposal to add the British hut (Base W) on Detaille Island, Lallemande Fjord, Loubert Coast to the List of Historic Sites and Monuments	United Kingdom
WP 36	Proposal to add the British hut at Damoy Point, Dorian Bay, Wiencke Island to the List of Historic Sites and Monuments	United Kingdom
WP 50 rev. 1	Measure 3 (2003) Antarctic Protected Areas System. Revised list of Historic Sites and Monuments (Proposed amendment to the Annex)	Chile
IP 13	Antarctic Historic Resources: Ross Sea Heritage Restoration Project – Historic artefacts from ASPAs 155, 157, 158 and 159	New Zealand

7c) Site Guidelines

WP 2	Site Guidelines for Stonington Island, Marguerite Bay, Antarctic Peninsula	United Kingdom & United States
WP 9	Report on informal discussions about the non-specific information contained in the Site Guidelines for Visitors to Antarctica	France
WP 11	Site Guidelines for Horseshoe Island and Detaille Island, Antarctic Peninsula	United Kingdom
WP 13	Visitor Site Guide for Cape Royds, Ross Island	New Zealand & United States
WP 19	Site Guidelines for Wordie House, Winter Island, Argentine Islands	Ukraine & United Kingdom
WP 28	Site Guidelines for Baily Head and Telefon Bay, Deception Island, South Shetland Islands	Argentina, Chile, Norway, Spain, United Kingdom & United States
WP 53	Site Guidelines for the North-east beach of Ardley Peninsula (Ardley Island), King George Island (25 de Mayo Island), South Shetland Islands	Argentina & Chile
IP 1	Monitoring and assessment using Hierarchical Bayesian Modeling: An approach taken by the Antarctic site inventory	United States
IP 14	Antarctic Site Inventory: 1994–2009	United States

Paper No	Title	Submitted By

7d) Other Annex V Matters

WP 4	Second Progress Report on the Discussion of the International Working Group about Possibilities for Environmental Management of Fildes Peninsula and Ardley Island	Chie & Germany
WP 29	Towards a representative system of marine spatial protection for the South Orkney Islands	United Kingdom
WP 31	Updated analysis of representation of Annex V categories and Environmental Domains in the system of Antarctic Specially Protected and Managed Areas	New Zealand
WP 34	Spatial protection and management of Antarctic marine biodiversity	United Kingdom
IP 11	Pilot study on identifying important marine areas for conservation around the South Orkney Islands	United Kingdom
IP 41	Marine Protected Areas in the Antarctic	ASOC
IP 48 rev. 1	A Ross Sea MPA: Preservation for science	ASOC
IP 50	Research Project "Current Environmental Situation and Management Proposals for the Fildes Region (Antarctic)"	Germany
IP 54	Report of the Larsemann Hills Antarctic Specially Managed Area (ASMA) Management Group	Australia, China, India, Romania & Russian Federation
IP 62	Possibilities for broad-scale management of the Vernadsky station area	Ukraine
IP 81	Notes on a Multiple Protection System for some areas of King George Island: Zones under Annex V and their relevance to Fildes Peninsula and adjacent areas	Chile

Item 8: Conservation of Antarctic Flora and Fauna

8a) Quarantine and non-native species

WP 5	A work program for CEP action on non-native species	Australia, France & New Zealand
WP 23	Propagule transport associated with logistic operations: a South African appraisal of a regional issue	South Africa
WP 32	Procedures for vehicle cleaning to prevent transfer of non-native species into and around Antarctica	United Kingdom
WP 33	Review of provisions relating to non-native species introductions in ASPA and ASMA management plans	United Kingdom
IP 4	SCAR's environmental code of conduct for terrestrial scientific field research in Antarctica	SCAR
IP 10 rev. 1	The IPY Aliens in Antarctica Project	SCAR
IP 12	ASPA and ASMA management plans: review of provisions relating to non-native species introductions	United Kingdom
IP 36	A framework for analysing and managing non-native species risks in Antarctica	New Zealand
IP 55	Improvements to the Alien Species Database	Australia & SCAR
SP 11	Topic Summary of CEP discussions on Non-native species (NNS) in Antarctica	Secretariat

Paper No	Title	Submitted By

8b) Specially protected species

IP 30	Standardised methodology for counting Southern giant petrels	ACAP

8c) Marine acoustics

IP 51	Strategic assessment of the risk posed to marine mammals by the use of airguns in the Antarctic Treaty area	Germany

8d) Other Annex II Matters

IP 15	Cumulative impacts from walking in the Dry Valleys	United States
IP 80	Distinguishing human impacts at Palmer Station, Antarctica	United Sattes

Item 9: Environmental Monitoring and Reporting

9a) Climate Change

WP 38	Climate change and the Antarctic environment: Management implications	United Kingdom
IP 5	SCAR's Antarctic Climate Change and the Environment (ACCE) Review Report	SCAR
IP 35	Policy implications arising from SCAR's report: Antarctic climate change and the environment	ASOC

9b) Other Environmental Monitoring and Reporting Matters

WP 41	Development of environmental data services to inform the Environmental Impact Assessment (EIA) process	United Kingdom
IP 37	Joint VISTA-Oceanites Antarctic Project	New Zealand
IP 42	An Update on the Antarctic Polar View programme. Information from satellite observations for safer and efficient sea ice navigation	United Kingdom
IP 68	Antarctica – 50 Years of Scientific Monitoring	United Kingdom
IP 69	Persistent organic pollutants in the Antarctic	SCAR
IP 100	Two new Antarctic Related National Institutes recently established in Brazil	Brazil

Item 10: Inspection Reports

Paper No	Title	Submitted By

Item 11: Cooperation with Other Organisations

WP 14	Report of the CEP Observer to the twenty-seventh meeting of the Scientific Committee to CCAMLR; 27–31 October 2008	New Zealand
WP 52	Report of the CEP Observer to the XXXth SCAR Delegates Meeting held in Moscow, 14–16 July 2008	Belgium
WP 55	Report of the Joint CEP/SC-CAMLR Workshop	France, New Zealand, Russian Federation, United States
IP 7	SCAR's Role in the Antarctic Treaty System	SCAR
IP 31	Progress with the Implementation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP)	ACAP
IP 52	Protecting the Antarctic Marine Ecosystem: A Role for the ATCM	ASOC

Item 12: General Matters

Item 13: Election of Officers

Item 14: Preparation for CEP XII

Item 15: Adoption of the Report

Item 16: Closing of the Meeting

Appendix 1

Five-year work plan for the CEP

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)									
			Interses. period	**CEP XIII 2010**	***Interses. period***	**CEP XIV 2011**	***Inters. period***	**CEP XV 2012**	***Interses. Period***	**CEP XVI 2013**	***Interses. period***	**CEP XVII 2014**
Introduction of non-native species	**1**	1. Review Workshop recommendations 2. Develop practical guidelines / standards / norms for all Antarctic operators. 3. Establish a database of non-native species occurrences in Antarctica.	ICG as per the work plan	Consideration of results of Aliens in Antarctic IPY project. Report from the ICG	ICG as per the work plan	Report from the ICG						
Tourism and NGO activities	**1**	1. Provide advice to ATCM as requested.	*Tourism study overseen by project mngmt group*	Tourism study reviewed and forwarded to the ATCM								

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)									
			Interses. period	**CEP XIII 2010**	*Interses. period*	**CEP XIV 2011**	*Inters. period*	**CEP XV 2012**	*Interses. Period*	**CEP XVI 2013**	*Interses. period*	**CEP XVII 2014**
Global Pressure: Climate change	**1**	1. Consider implications of climate change for management of Antarctic environment 2. SCAR currently undertaking a Review of Antarctic Climate and Environment.		Full SCAR report presented to CEP – dedicated time for discussion	ATME	Dedicated time for discussion of ATME outcomes		Standing sub-item		Standing sub-item		Standing sub-item
Global Pressure: Pollution	**1**	1. Maintain a watching brief on pollution monitoring	SCAR to compile information about POPs and transmit to CEP. CEP Chair to forward report to ATCM	Consideration of SCAR report in light of the Stockholm Convention request for information								
Processing new and revised protected / managed area management plans	**1**	1. Refine the process for reviewing new and revised management plans. 2. Update existing guidelines.	Review of draft management plans by SGMP as per its work plan	Consideration of SGMP report Review of effectiveness of SGMP	*SGMP / conducts work as per agreed work plan*	Consideration of SGMP / report.	*SGMP / conducts work as per agreed work plan*	Consideration of SGMP / report.	*SGMP / conducts work as per agreed work plan*	Consideration of SGMP / report.	*SGMP / conducts work as per agreed work plan*	

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)										
			Interses. period	**CEP XIII 2010**	***Interses. period***	**CEP XIV 2011**	***Inters. period***	**CEP XV 2012**	***Interses. Period***	**CEP XVI 2013**	***Interses. period***	**CEP XVII 2014**
Marine spatial protection and management	**1**	1. Cooperate with CCAMLR on Southern Ocean bioregionalisation. 2. Identify processes for MPA designation.		Review outcomes and consider further CEP action								
Operation of the CEP and Strategic Planning	**1**	1. Keep the 5 year plan up to date based on changing circumstances and ATCM requirements. 2. Identify opportunities for improving the effectiveness of the CEP. 3. Consider long-term objectives for Antarctica (50–100 years time)		Standing item		Standing item		Standing item		Standing item		Standing item
Human footprint / wilderness management	**2**	1. Develop an agreed understanding of the terms "footprint" and "wilderness".	Consideration by interested Parties	Review future actions based on intersessional work.								

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)									
			Interses. period	**CEP XIII 2010**	*Interses. period*	**CEP XIV 2011**	*Inters. period*	**CEP XV 2012**	*Interses. Period*	**CEP XVI 2013**	*Interses. period*	**CEP XVII 2014**
Maintain the list of Historic Sites and Monuments	2	1. Maintain the list and consider new proposals as they arise.	Intersessional discussion of guidelines for HSMs			Standing item		Standing item		Standing item		Standing item
Monitoring and state of the environment reporting	2	1. Identify key indicators of human impacts. 2. Establish a process for reporting to the ATCM	Links to SCAR website (list of databases) from CEP website established	Report from SCAR regarding SC-ADM support for CEP work								
Exchange of Information	2	Assign to the Secretariat	Commence 100% use of EIES	Secretariat Report on summary information available from EIES		Secretariat Report		Secretariat Report		Secretariat Report		Secretariat Report
Biodiversity loss	2	1. Maintain awareness of threats to existing biodiversity										

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)								
			Interses. period	**CEP XIII 2010**	*Interses. period*	**CEP XIV 2011**	*Inters. period*	**CEP XV 2012**	*Interses. Period*	**CEP XVI 2013**	*Interses. period*	**CEP XVII 2014**
Site specific guidelines for tourist-visited sites	**2**	1. Review site specific guidelines as required. 2. Provide advice to ATCM as required.	ICG to review Rec XVVV-1	Review ICG work. Make recommendations to ATCM. Plan future work on basis of ICG work.	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required
Implementing and improving the EIA provisions of Annex I	**3**	1. Refine the process for considering CEEs and advising the ATCM accordingly. 2. Develop guidelines for assessing cumulative impacts. 3. Keep the EIA Guidelines under review. 4. Consider application of strategic environmental assessment in Antarctica.	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required								
Specially protected species	**3**	1. Consider listing / de-listing proposals as required.										

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)									
			Interses. period	CEP XIII 2010	*Interses. period*	CEP XIV 2011	*Inters. period*	CEP XV 2012	*Interses. Period*	CEP XVI 2013	*Interses. period*	CEP XVII 2014
Overview of the protected areas system / SEGF	**3**	1. Apply the domains analysis (SEGF) to the existing system – undertake a gap analysis.		SCAR report on fit of biological data. Discuss possible implications of an updated gap analysis based on EDA.								
Emergency response action and contingency planning	**3**	To be determined										
Updating the Protocol and reviewing Annexes	**3**	1. Complete review of Annex II (currently with the ATCM). 2. Prepare a prioritized timetable for the review of the remaining annexes.		Requires CEP discussion on the need and aims for reviewing Protocol annexes.								
Inspections (Article 14 of the Protocol)	**3**	1. Review inspection reports as required. 2. Review environmental component of inspection checklists as required.	If required, ICG to review of Checklist A	Standing item Consideration of ICG report		Standing item		Standing item		Standing item		Standing item

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)									
			Interses. period	CEP XIII 2010	*Interses. period*	CEP XIV 2011	*Inters. period*	CEP XV 2012	*Interses. Period*	CEP XVI 2013	*Interses. period*	CEP XVII 2014
Shipping Guidelines	**4**					Review status of guidelines within IMO				Establish Expert Group to review guidelines		
Ballast water guidelines	**4**	1. Guidelines already approved by the ATCM. May need reviewing in due course.				Review status of guidelines within IMO				Establish Expert Group to review guidelines		
Energy management	**4**	1. Develop best-practice guidelines for energy management at stations and bases.						COMNAP report requested		COMNAP report presented to CEP – dedicated time for discussion		

Issue / Environmental Pressure	Priority for CEP	Actions	Timetable for actions to be addressed at CEP meetings and during the Intersessional periods (subject to annual review)										
			Interses. period	CEP XIII 2010	*Interses. period*	CEP XIV 2011	*Inters. period*	CEP XV 2012	*Interses. Period*	CEP XVI 2013	*Interses. period*	CEP XVII 2014
Outreach and education	**4**	1. Review current examples and identify opportunities for greater education and outreach.								Dedicated time for discussion		
Marine acoustics	**5**	1. Develop guidelines for use of noise-emitting devices. 2. Maintain a watching brief on the issue.		Report by Germany on marine acoustics risk assessment (para 261)								
Waste	**5**	1. Develop guidelines for best practice disposal of waste including human waste.								COMNAP report requested		COMNAP report presented to CEP – dedicated time for discussion
Clean up of sites of past activity	**5**	1. Establish Antarctic-wide inventory of sites of past activity. 2. Develop guidelines for best practice approach to clean up.										Secretariat requested to develop and maintain an inventory COMNAP report on best practice requested

Appendix 2

SGMP three-year work plan

Year 1 (08/09) Tasks completed	Year 2 (09/10) Suggested tasks	Year 3 (10/11) Suggested tasks
Review draft management plans referred by CEP for intersessional review and provide advice to proponents	Review draft management plans referred by CEP for intersessional review and provide advice to proponents	Review draft management plans referred by CEP for intersessional review and provide advice to proponents
Develop SGMP work plan, for consideration by CEP	Review and update SGMP work plan	Review and update SGMP work plan
Review progress with existing protected area recommendations, for consideration by CEP	Develop recommended standard wording for suitable management plan components, for consideration by CEP	Workshop to share best practice in ASMA management and to consider development of Guide to the Preparation of Management Plans for Antarctic Specially Managed Areas
Identify management plan components suited to recommended standard wording, for consideration by CEP	Examine approaches to reviewing plans other than those referred for intersessional review, for consideration by CEP	Finalise development of standard template for management plans
	Commence development of standard template for management plans	Review Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas, taking into account work on standard wording and a standard template, and develop advice for consideration by CEP
Prepare report for CEP against SGMP Terms of Reference 1–3	Prepare report for CEP against SGMP Terms of Reference 1–3	Prepare report for CEP against SGMP Terms of Reference 1–3
Prepare report for CEP against SGMP Term of Reference 4	Prepare report for CEP against SGMP Term of Reference 4	Prepare report for CEP against SGMP Term of Reference 4

Appendix 3

Provisional Agenda for CEP XIII

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. Progress to the 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. Human footprint and wilderness values
    e. Marine Spatial Protection and Management
    f. Other Annex V Matters
8. Conservation of Antarctic Flora and Fauna
    a. Quarantine and Non-native Species
    b. Specially Protected Species
    c. Other Annex II Matters
9. Environmental Monitoring and Reporting
    a. Climate Change
    b. Other Environmental Monitoring and Reporting Matters
10. Inspection Reports
11. Cooperation with Other Organisations
12. General Matters
13. Election of Officers
14. Preparation for Next Meeting
15. Adoption of the Report
16. Closing of the Meeting

Appendix 4

Southern Ocean Bioregionalisation with CCAMLR priority areas identified

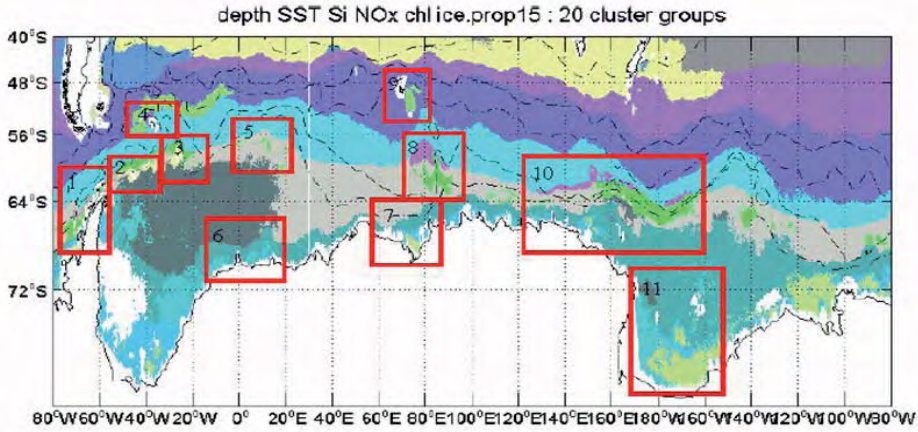

Figure 12: Secondary regionalisation agreed by the CCAMLR Bioregionalisation Workshop (2007) (analysis based on depth, SST, silicate concentration, nitrate concentration, surface chlorophyll-*a* and ice concentration). Red boxes show areas of highest heterogeneity, which have been identified by the Working Group as priority areas for identifying MPAs as part of a representative system (numbers refer to area descriptions, and are not in any order of priority). 1 = Western Antarctic Peninsula, 2 = South Orkney Islands, 3 = South Sandwich Islands, 4 = South Georgia, 5 = Maud Rise, 6 = Eastern Weddell Sea, 7 = Prydz Bay, 8 = BANZARE Bank, 9 = Kerguelen, 10 = Northern Ross Sea / East Antarctica, 11 = Ross Sea shelf. (This figure is available in colour on the CCAMLR website.)

3. Appendices

Appendix 1

Antarctic Treaty Consultative Meeting XXXII Washington Ministerial Declaration on the Fiftieth Anniversary of the Antarctic Treaty

In the year of the fiftieth anniversary of the signing of the Antarctic Treaty (the "Treaty") in Washington on December 1, 1959, the Consultative Parties to the Antarctic Treaty,

Recognizing the historic achievements of the Treaty in promoting peace and international cooperation in the Antarctic region over the past half century,

Recognizing that it is in the interest of all humankind that Antarctica continue to be used exclusively for peaceful purposes and shall not become the scene or object of international discord,

Recognizing the integrated and mutually supportive nature of the Antarctic Treaty system, encompassing, inter alia, the Protocol on Environmental Protection to the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources and the Convention for the Conservation of Antarctic Seals, and the central role of the Treaty within that system,

Recalling their commitment to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, and the designation of Antarctica as a natural reserve, devoted to peace and science,

Mindful that freedom of scientific investigation is and continues to be a cornerstone of the Treaty,

Recalling that this anniversary takes place following the latest International Polar Year, a multidisciplinary scientific endeavor that was supported by all Parties and endorsed in the 2006 Edinburgh Antarctic Declaration on the International Polar Year,

Acknowledging the key role that Antarctic science plays in understanding the world's climate system,

Concerned about the implications of global environmental change, in particular climate change, for the Antarctic environment and dependent and associated ecosystems,

Mindful to ensure that human activity in Antarctica, including tourism, is conducted in a manner that effectively promotes the continued protection of the Antarctic environment and minimizes cumulative impacts,

Hereby:

1. Reaffirm their continued commitment to the objectives and purposes of the Antarctic Treaty and the other elements of the Antarctic Treaty system;
2. Reaffirm the importance of the Treaty's provisions guaranteeing freedom of scientific investigation and reserving Antarctica exclusively for peaceful purposes, free from measures of a military nature;
3. Reaffirm the importance they attach to the contribution made by the Treaty, and by Article IV in particular, to ensuring the continuance of international harmony in Antarctica;
4. Underscore the importance of the Protocol on Environmental Protection to the Antarctic Treaty;
5. Reaffirm their commitment to Article 7 of the Environmental Protocol, which prohibits any activity relating to mineral resources, other than scientific research;
6. Underline the importance of cooperation related to the conservation of living marine resources and strengthened implementation under the Convention on the Conservation of Antarctic Marine Living Resources;
7. Pledge to strengthen their efforts to preserve and protect the Antarctic terrestrial and marine environments;
8. Welcome the increase in Parties to the Antarctic Treaty, from the original twelve signatories in 1959 to forty-seven Parties at the time of this anniversary, and encourage other States that are committed to the objectives of the Antarctic Treaty to accede in accordance with its terms;
9. Encourage Parties to work through other appropriate international organizations that have expertise in respect of certain activities that may also take place in the Antarctic Treaty area, in particular those relating to maritime and aviation activities, to give special consideration to the development, adoption and effective implementation of measures to promote safety and environmental protection in Antarctica;
10. Confirm their intention to work together to better understand changes to the Earth's climate and to actively seek ways to address the effects of climate and environmental change on the Antarctic environment and dependent and associated ecosystems;
11. Commit to support and build upon the innovative scientific programmes relating to Antarctica initiated as part of the International Polar Year 2007-08, and promote education and outreach programmes to enhance global understanding and commitment to protecting the Antarctic environment; and
12. Decide to continue and extend for the benefit of all humankind their cooperation established in the Treaty and in the Treaty system over the last fifty years.

Adopted at Washington, April 6, 2009

Appendix 2

Antarctic Treaty-Arctic Council Joint Meeting Washington Ministerial Declaration on the International Polar Year and Polar Science

On the occasion of the conclusion of the fourth International Polar Year (IPY), the Member States of the Arctic Council and the Consultative Parties to the Antarctic Treaty,

Observing that the IPY occurred against a backdrop of rapid and significant climate and environmental change in the polar regions,

Acknowledging the unique scientific importance of the polar regions, both as actors and barometers of these changes, which are vital to the functioning of the earth's terrestrial, biological, climate, ocean and atmospheric systems,

Recognizing the need to improve the modeling and prediction of change on a regional basis,

Recognizing the significant work of the Intergovernmental Panel on Climate Change in assessing documented and predicted changes in polar regions and in relating them to larger global systems,

Affirming the importance of the IPY's findings to the scientific community, Arctic residents, including indigenous peoples, and to humanity as a whole,

Observing the success of participants in forming IPY collaborations that integrate the human, physical, and biological aspects of their research to achieve system-scale knowledge,

Recognizing the vital contributions toward understanding the characteristics and dynamics of polar regions and their roles for the world's ecosystems made by scientists and other participants from over sixty countries,

Noting the extensive efforts of the International Council for Science (ICSU), the World Meteorological Organization (WMO), the many IPY National Committees, and the scientists and other participants around the globe whose research made IPY a great success,

Recalling the goals for the IPY set forth in the 2006 Edinburgh Antarctic Declaration on the International Polar Year 2007-2008, and the strong support for IPY expressed by the Arctic Council in the 2006 Salekhard Declaration,

Expecting that the legacy of the IPY will continue well beyond its formal conclusion,

Hereby:

1. Urge states, national and international scientific bodies, and other interested parties to cooperate to deliver a lasting legacy from the IPY, and to support appropriate infrastructures to achieve this;
2. Commit themselves to reviewing key issues related to scientific cooperation and recent scientific findings at the biennial Ministerial Meetings of the Arctic Council and annual Antarctic Treaty Consultative Meetings, and further commit to using science to help inform the cooperative development of measures to address the threats to the polar regions;
3. Call upon IPY participants to continue to make data collected under IPY 2007-2008 and its legacy programmes available in an open and timely manner, recall the obligations related to exchange of scientific information to this effect in the Antarctic Treaty, and encourage the same spirit of scientific openness among Arctic researchers;
4. Endorse the goal of strengthening international cooperation at all levels in polar regions among States, scientists, Arctic residents, including indigenous peoples, and their institutions in areas such as educational outreach, human and ecosystem health, environmental protection, and scholarships for young scientists;
5. Encourage the development of coordinated research and scientific observations at both poles to compare the current dynamics of polar areas and their contributions to the Earth's processes and changes;
6. Recommend that governments continue their support for efforts initiated during IPY to create and link observational systems in order to improve the modeling and prediction of climate change on both regional and temporal scales;
7. Encourage states and international bodies to use the scientific understandings derived from IPY research to support the development of concrete steps to protect the environment in the polar regions;
8. Support the analysis and use of scientific data and information collected from the polar regions as a result of IPY to contribute to future assessments by the Intergovernmental Panel on Climate Change, as well as other efforts to address climate change, and future Arctic Council assessments;
9. Call upon states, organizations, scientists, and other stakeholders to continue to engage with young people to cultivate the next generation of polar scientists, and to communicate with the general public to develop an awareness of the importance of polar research for life in all regions of the world; and
10. Affirm the value of collaboration and coordination between states and Arctic residents, including indigenous peoples, for the benefit of polar research.

Adopted at Washington, April 6, 2009

Appendix 3

Preliminary Agenda for ATCM XXXIII

1. Opening of the Meeting
2. Election of Officers and Creation of Working Groups
3. Adoption of the Agenda and Allocation of Items
4. Operational 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, Including Climate-related Research, Scientific Cooperation and Facilitation
14. Operational Issues
15. Education Issues
16. Exchange of Information
17. Biological Prospecting in Antarctica
18. Development of a Multi-Year Strategic Work Plan
19. Preparation of the 34th Meeting
20. Any Other Business
21. Adoption of the Final Report

PART II

Measures, Decisions and Resolutions

1. Measures

Antarctic Specially Managed Area No 3
(Cape Denison, Commonwealth Bay, George V Land, East Antarctica): revised Management Plan

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

- Measure 1 (2004), which designated Cape Denison, Commonwealth Bay, George V Land, as Antarctic Specially Managed Area No 3 and annexed a Management Plan for the site;
- Measure 3 (2004), which added Historic Site and Monument No 77: Cape Denison, located within ASMA 3, to the List of Historic Sites and Monuments;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASMA 3;

Noting Measure 12 (2009), dealing with Antarctic Specially Protected Area No 162 (Mawson's Huts, Cape Denison, Commonwealth Bay, George V Land, East Antarctica), which is located within ASMA 3;

Desiring to replace the existing Management Plan for ASMA 3 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Managed Area No 3 (Cape Denison, Commonwealth Bay, George V Land, East Antarctica), which is annexed to this Measure, be approved;
2. the Management Plan for ASMA 3 annexed to Measure 1 (2004) shall cease to be effective.

Measure 2 (2009)

Antarctic Specially Managed Area No 7
(South-west Anvers Island and Palmer Basin): revised Management Plan

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 Measure 1 (2008), which designated South-west Anvers Island and Palmer Basin as Antarctic Specially Managed Area No 7 and annexed a Management Plan for the site;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASMA 7;

Noting Measure 4 (2009), dealing with Antarctic Specially Protected Area No 113 (Litchfield Island, Arthur Harbour, Anvers Island, Palmer Archipelago), which is located within ASMA 7;

Desiring to replace the existing Management Plan for ASMA 7 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Managed Area No 7 (South-west Anvers Island and Palmer Basin), which is annexed to this Measure, be approved;
2. the Management Plan for ASMA 7 annexed to Measure 1 (2008) shall cease to be effective.

Measure 3 (2009)

Antarctic Specially Protected Area No 104
(Sabrina Island, Balleny Islands): Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

*Recallin*g

- Recommendation IV-4 (1966), which designated Sabrina Island, Balleny Islands, as Specially Protected Area ("SPA") No 4 and annexed a map for the site;
- Decision 1 (2002), which renamed and renumbered SPA 4 as Antarctic Specially Protected Area No 104;

Noting that the Committee for Environmental Protection has endorsed a Management Plan for ASPA 104;

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. the Management Plan for Antarctic Specially Protected Area No 104 (Sabrina Island, Balleny Islands), which is annexed to this Measure, be approved.
2. Recommendation IV-4: Sabrina Island, Balleny Islands shall cease to be effective.

Measure 4 (2009)

Antarctic Specially Protected Area No 113
(Litchfield Island, Arthur Harbour, Anvers Island, Palmer Archipelago): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation VIII-1 (1975), which designated Litchfield Island, Arthur Harbour, Palmer Archipelago, as Specially Protected Area ("SPA") No 17 and annexed a map for the site;
- Decision 1 (2002), which renamed and renumbered SPA 17 as Antarctic Specially Protected Area No 113;
- Measure 2 (2004), which adopted a Management Plan for ASPA 113;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 113;

Noting Measure 2 (2009), dealing with ASMA 7 (South-west Anvers Island and Palmer Basin), in which ASPA 113 is located;

Desiring to replace the existing Management Plan for ASPA 113 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 113 (Litchfield Island, Arthur Harbour, Anvers Island, Palmer Archipelago), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 113 annexed to Measure 2 (2004) shall cease to be effective;
3. Recommendation VIII-1 (1975): Litchfield Island, Arthur Harbour, Palmer Archipelago shall cease to be effective.

Measure 5 (2009)

Antarctic Specially Protected Area No 121
(Cape Royds, Ross Island): revised Management Plan

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 (ASPA) and approval of Management Plans for those Areas;

Recalling

- Recommendation VIII-4 (1975), which designated Cape Royds, Ross Island as Site of Special Scientific Interest ("SSSI") No 1 and annexed a Management Plan for the site;
- Recommendation X-6 (1979), which extended the expiry date of SSSI 1 from 30 June 1981 to 30 June 1985;
- Recommendation XII-5 (1983), which extended the expiry date of SSSI 1 from 30 June 1985 to 31 December 1985;
- Recommendation XIII-9 (1985), which annexed a revised Management Plan for SSSI 1;
- Resolution 7 (1995), which extended the expiry date of SSSI 1 from 31 December 1995 to 31 December 2000;
- Measure 2 (2000), which extended the expiry date of SSSI 1 from 31 December 2000 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 1 as Antarctic Specially Protected Area No 121;
- Measure 1 (2002), which adopted a revised Management Plan for ASPA 121;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 121;

Desiring to replace the existing Management Plan for ASPA 121 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 121 (Cape Royds, Ross Island), which is annexed to this Measure, be approved;
2. all prior Management Plans for ASPA 121, namely those annexed to:
   - Recommendation XIII-9 (1985) and
   - Measure 1 (2002)

   shall cease to be effective; and
3. Measure 2 (2000), which is not yet effective, be withdrawn.

Measure 6 (2009)

Antarctic Specially Protected Area No 125
(Fildes Peninsula, King George Island, South Shetland Islands): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation IV-12 (1966), which designated Fildes Peninsula, King George Island, South Shetland Islands as Specially Protected Area ("SPA") No 12;
- Recommendation V-5 (1968), which revised the description of SPA 12;
- Recommendation VIII-2 (1975), which terminated Recommendation V-5 and Recommendation IV-12;
- Recommendation VIII-4 (1975), which renamed and renumbered SPA 12 as Site of Special Scientific Interest (SSSI) No 5 and annexed a Management Plan for the site;
- Recommendation X-6 (1979), which extended the expiry date of SSSI 5 from 30 June 1981 to 30 June 1985;
- Recommendation XII-5 (1984), which extended the expiry date of SSSI 5 from 30 June 1985 to 31 December 1985;
- Recommendation XIII-7 (1985), which extended the expiry date of SSSI 5 from 31 December 1985 to 31 December 1991;
- Recommendation XVI-7 (1991), which extended the expiry date of SSSI 5 until 31 December 2001;

- Measure 3 (2001), which extended the expiry date of SSSI 5 from 31 December 2001 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 5 as Antarctic Specially Protected Area No 125;
- Measure 4 (2005), which extended the expiry date of ASPA 125 from 31 December 2005 to 31 December 2010;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 125;

Desiring to replace the existing Management Plan for ASPA 125 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 125 (Fildes Peninsula, King George Island, South Shetland Islands), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 125 annexed to Recommendation VIII-4 (1975) shall cease to be effective.

Antarctic Specially Protected Area No 136 (Clark Peninsula, Budd Coast, Wilkes Land): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation XIII-8 (1985), which designated Clark Peninsula, Budd Coast, Wilkes Land, as Site of Special Scientific Interest ("SSSI") No 17 and annexed a Management Plan for the site;
- Resolution 7 (1995), which extended the expiry date of SSSI 17 from 31 December 1995 to 31 December 2000;
- Measure 1 (2000), which adopted a revised Management Plan for SSSI 17;
- Decision 1(2002), which renamed and renumbered SSSI 17 as Antarctic Specially Protected Area No 136;
- Measure 1 (2006), which adopted a revised Management Plan for ASPA 136;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 136;

Desiring to replace the existing Management Plan for ASPA 136 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 136 (Clark Peninsula, Budd Coast, Wilkes Land), which is annexed to this Measure, be approved;
2. the prior Management Plans for ASPA 136 annexed to:
   - Recommendation XIII-8 (1985) and
   - Measure 1 (2006)

   shall cease to be effective; and
3. the Management Plan for SSSI 17 annexed to Measure 1 (2000), which is not yet effective, be withdrawn.

Measure 8 (2009)

Antarctic Specially Protected Area No 142 (Svarthamaren): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation XIV-5 (1987), which designated Svarthamaren, Mühlig-Hofmannfjella, Dronning Maud Land, as Site of Special Scientific Interest ("SSSI") No 23 and annexed a Management Plan for the site;
- Resolution 3 (1996), which extended the expiry date of SSSI 23 from 31 December 1997 to 31 December 2000;
- Measure 1 (1999), which adopted a revised Management Plan for SSSI 23;
- Decision 1(2002), which renamed and renumbered SSSI 23 as Antarctic Specially Protected Area No 142;
- Measure 2 (2004), which adopted a revised Management Plan for ASPA 142;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 142;

Desiring to replace the existing Management Plan for ASPA 142 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 148 (Svarthamaren), which is annexed to this Measure, be approved;
2. all prior Management Plans for ASPA 142, namely those annexed to:
   - Recommendation XIV-5 (1987) and
   - Measure 2 (2004)

   shall cease to be effective; and
3. Measure 1 (1999), which is not yet effective, be withdrawn.

Measure 9 (2009)

Antarctic Specially Protected Area No 150
(Ardley Island, Maxwell Bay, King George Island): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation XVI-2 (1991), which designated Ardley Island, Maxwell Bay, King George Island as Site of Special Scientific Interest ("SSSI") No 33 and annexed a Management Plan for the site;
- Measure 3 (2001), which extended the expiry date of SSSI 33 from 31 December 2001 to 31 December 2005;
- Decision 1 (2002) which renamed and renumbered SSSI 33 as Antarctic Specially Protected Area No 150;
- Measure 4 (2005), which extended the expiry date of ASPA 150 until 31 December 2010;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 150;

Desiring to replace the existing Management Plan for ASPA 150 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 150 (Ardley Island, Maxwell Bay, King George Island), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 150 annexed to Recommendation XVI-2 (1991), which is not yet effective, be withdrawn.

Measure 10 (2009)

Antarctic Specially Protected Area No 152
(Western Bransfield Strait): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation XVI-3 (1991), which designated Western Bransfield Strait, off Low Island, South Shetland Islands, as Site of Special Scientific Interest ("SSSI") No 35 and annexed a Management Plan for the site;
- Measure 3 (2001), which extended the expiry date of SSSI 35 from 31 December 2001 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 35 as Antarctic Specially Protected Area No 152;
- Measure 2 (2003), which adopted a revised Management Plan for ASPA 152;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 152;

Desiring to replace the existing Management Plan for ASPA 152 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 152 (Western Bransfield Strait), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 152 annexed to Measure 2 (2003) shall cease to be effective; and
3. Recommendation XVI-3 (1991), which is not yet effective, be withdrawn.

Measure 11 (2009)

Antarctic Specially Protected Area No 153
(Eastern Dallmann Bay): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Recommendation XVI-3 (1991), which designated East Dallmann Bay, off Brabant Island as Site of Special Scientific Interest ("SSSI") No 36 and annexed a Management Plan for the site;
- Measure 3 (2001), which extended the expiry date of SSSI 36 from 31 December 2001 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 36 as Antarctic Specially Protected Area No 153;
- Measure 2 (2003), which adopted a revised Management Plan for ASPA 153;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 153;

Desiring to replace the existing Management Plan for ASPA 153 with the revised Management Plan;

Noting that Measure 10 (2009) withdraws Recommendation XVI-3 (1991);

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. the revised Management Plan for Antarctic Specially Protected Area No 153 (Eastern Dallmann Bay), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 153 annexed to Measure 2 (2003) shall cease to be effective.

Measure 12 (2009)

Antarctic Specially Protected Area No 162
(Mawson's Huts, Cape Denison, Commonwealth Bay, George V Land, East Antarctica): revised Management Plan

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 ("ASPA") and approval of Management Plans for those Areas;

Recalling

- Measure 2 (2004), which designated Mawson's Huts, Commonwealth Bay, George V Land, East Antarctica, as Antarctic Specially Protected Area No 162, and annexed a Management Plan for the site;
- Measure 3 (2004), which added Historic Site and Monument No 77 (Cape Denison), located within ASPA 162, to the List of Historic Sites and Monuments;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 162;

Noting Measure 1 (2009), dealing with Antarctic Specially Managed Area No 3 (Cape Denison, Commonwealth Bay, George V Land, East Antarctica), within which ASPA 162 is located;

Desiring to replace the existing Management Plan for ASPA 162 with the revised Management Plan;

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. the revised Management Plan for Antarctic Specially Protected Area No 162 (Mawson's Huts, Cape Denison, Commonwealth Bay, George V Land, East Antarctica), which is annexed to this Measure, be approved;
2. the Management Plan for ASPA 162 annexed to Measure 2 (2004) shall cease to be effective.

Measure 13 (2009)

Antarctic Specially Protected Area No 171
(Narębski Point, Barton Peninsula, King George Island): Management Plan

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;

Noting that the Committee for Environmental Protection has recommended that Narębski Point, Barton Peninsula, King George Island, be designated as a new Antarctic Specially Protected Area, and has endorsed the Management Plan for this area annexed to this Measure;

Recognising that this area supports outstanding environmental, scientific, historic, aesthetic or wilderness values, or ongoing or planned scientific research, and would benefit from special protection;

Desiring to designate Narębski Point, Barton Peninsula, King George Island, as an Antarctic Specially Protected Area and to approve the Management Plan for this Area;

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. Narębski Point, Barton Peninsula, King George Island, be designated as Antarctic Specially Protected Area No 171; and
2. the Management Plan which is annexed to this Measure be approved.

Measure 14 (2009)

Antarctic Historic Sites and Monuments: Base "W" and Hut at Damoy Point

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", as subsequently amended;

Desiring to add two further historic sites to the List of Historic Sites and Monuments;

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 sites be added to the "List of Historic Sites and Monuments" annexed to Measure 3 (2003):

No 83: Base "W", Detaille Island, Lallemand Fjord, Loubet Coast

Base "W" is situated on a narrow isthmus at the northern end of Detaille Island, Lallemand Fjord, Loubet Coast. The site consists of a hut and a range of associated structures and outbuildings including a small emergency storage building, bitch and pup pens, anemometer tower and two standard tubular steel radio masts (one to the south west of the main hut and the other to the east).

Base "W" was established in 1956 as a British science base primarily for survey, geology and meteorology and to contribute to the IGY in 1957. As a relatively unaltered base from the late 1950s, Base "W" provides an important reminder

of the science and living conditions that existed when the Antarctic Treaty was signed 50 years ago.

Location: 66º 52' S, 66º 38' W
Original proposing Party: United Kingdom
Party undertaking management: United Kingdom

No 84: Hut at Damoy Point, Dorian Bay,
Wiencke Island, Palmer Archipelago

The site consists of a well-preserved hut and the scientific equipment and other artefacts inside it. It is located at Damoy Point on Dorian Bay, Wiencke Island, Palmer Archipelago. The hut was erected in 1973 and used for a number of years as a British summer air facility and transit station for scientific personnel. It was last occupied in 1993.

Location: 64º 49' S, 63º 31' W
Original proposing Party: United Kingdom
Party undertaking management: United Kingdom

Measure 15 (2009)

Landing of persons from passenger vessels in the Antarctic Treaty area

The Representatives,

Noting the increasing trend in tourist activities in the Treaty area and the possible impacts of such activities on the Antarctic environment, including its wildlife, and on the conduct of scientific research;

Conscious of their responsibilities to ensure that tourism is conducted in a safe and environmentally responsible manner consistent with the objectives of the Antarctic Treaty;

Acknowledging the tourism industry's collaboration in efforts to ensure that its activities are sustainable and compatible with the objectives of the Antarctic Treaty;

Aware of hazards confronting passenger vessels operating in the Antarctic Treaty area and desiring to promote the safety of life at sea;

Wishing to minimize the likelihood of marine oil spills due to incidents involving large tourist vessels in Antarctica;

Recalling Resolution 4 (2007);

Recalling the existence of resolutions which set site-specific recommendations;

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

That:

1. Parties shall require their operators organizing tourist or other non-governmental activities in the Antarctic Treaty area, for which advance

notification is required in accordance with Article VII(5) of the Antarctic Treaty,

a. to refrain from making any landings in Antarctica from vessels carrying more than 500 passengers unless a lower number is otherwise specified in applicable ATCM measures; and

b. in the case of vessels carrying 500 or fewer passengers,

i. to coordinate with each other with the objective that not more than one tourist vessel is at a landing site at any one time;

ii. to restrict the number of passengers on shore at any one time to 100 or fewer, unless a lower number is otherwise specified in applicable ATCM Measures and to maintain a 1:20 guide-to-passenger ratio, unless a more restrictive ratio is otherwise specified in applicable ATCM measures.

2. nothing in this Measure shall derogate from the rights and obligations of any Party with respect to environmental impact assessments and restrictions on the activities of their nationals in accordance with Article 8 and other relevant provisions of the Protocol on Environmental Protection to the Antarctic Treaty.

3. this Measure, including the specific restrictions in paragraph 1 above, shall be subject to further discussion in future ATCMs to take account of possible changes in circumstance, including with respect to specific sites in Antarctica.

Measure 16 (2009)

Amendment of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty: Conservation of Antarctic Fauna and Flora

The Representatives,

Recalling the Protocol on Environmental Protection to the Antarctic Treaty, including its Annex II on Conservation of Antarctic Fauna and Flora;

Noting that the functions of the Committee for Environmental Protection under Article 12 of the Protocol include providing advice and formulating recommendations in connection with the operation of the Annexes to the Protocol;

Mindful that the Antarctic Treaty Consultative Meeting endorsed the proposal of the Committee for Environmental Protection in 2001 to undertake a review of Annex II to the Protocol;

Recalling also the procedure for amending Annex II as set out in Article 9(3) of the Protocol and Article 9 of Annex II;

Recalling further that the words "All species of the genus Arctocephalus, fur seals" were removed from Appendix A to Annex II by Measure 4 (2006), which became effective on 23 June 2007;

Recommend to their Governments that:

1. Annex II to the Protocol on Environmental Protection to the Antarctic Treaty: Conservation of Antarctic Fauna and Flora be replaced by the amended version of Annex II attached to this Measure;
2. the replacement of the current version of Annex II with the amended version becomes effective in accordance with Article 9 of Annex II.

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

Conservation of Antarctic Fauna and Flora

ARTICLE 1
DEFINITIONS

For the purposes of this Annex:

(a) "native mammal" means any member of any species belonging to the Class Mammalia, indigenous to the Antarctic Treaty area or occurring there naturally through migrations;

(b) "native bird" means any member, at any stage of its life cycle (including eggs), of any species of the Class Aves indigenous to the Antarctic Treaty area or occurring there naturally through migrations;

(c) "native plant" means any member of any species of terrestrial or freshwater vegetation, including bryophytes, lichens, fungi and algae, at any stage of its life cycle (including seeds, and other propagules), indigenous to the Antarctic Treaty area;

(d) "native invertebrate" means any member of any species of terrestrial or freshwater invertebrate, at any stage of its life cycle, indigenous to the Antarctic Treaty area;

(e) "appropriate authority" means any person or agency authorised by a Party to issue permits under this Annex;

(f) "permit" means a formal permission in writing issued by an appropriate authority;

(g) "take" or "taking" means to kill, injure, capture, handle or molest a native mammal or bird, or to remove or damage such quantities of native plants or invertebrates that their local distribution or abundance would be significantly affected;

(h) "harmful interference" means:

  (i) flying or landing helicopters or other aircraft in a manner that disturbs concentrations of native birds or seals;

  (ii) using vehicles or vessels, including hovercraft and small boats, in a manner that disturbs concentrations of native birds or seals;

  (iii) using explosives or firearms in a manner that disturbs concentrations of native birds or seals;

  (iv) wilfully disturbing breeding or moulting native birds or concentrations of

native birds or seals by persons on foot;

(v) significantly damaging concentrations of native terrestrial plants by landing aircraft, driving vehicles, or walking on them, or by other means; and

(vi) any activity that results in the significant adverse modification of habitats of any species or population of native mammal, bird, plant or invertebrate.

(i) "International Convention for the Regulation of Whaling" means the Convention done at Washington on 2 December 1946.

(j) "Agreement on the Conservation of Albatrosses and Petrels" means the Agreement done at Canberra on 19 June 2001.

ARTICLE 2
CASES OF EMERGENCY

1. This Annex shall not apply in cases of emergency relating to the safety of human life or of ships, aircraft, or equipment and facilities of high value, or the protection of the environment.

2. Notice of activities undertaken in cases of emergency that result in any taking or harmful interference shall be circulated immediately to all Parties and to the Committee.

ARTICLE 3
PROTECTION OF NATIVE FAUNA AND FLORA

1. Taking or harmful interference shall be prohibited, except in accordance with a permit.

2. Such permits shall specify the authorised activity, including when, where and by whom it is to be conducted and shall be issued only in the following circumstances:

(a) to provide specimens for scientific study or scientific information;

(b) to provide specimens for museums, herbaria and botanical gardens, or other educational institutions or uses;

(c) to provide specimens for zoological gardens but, in respect of native mammals or birds, only if such specimens cannot be obtained from existing captive collections elsewhere, or if there is a compelling conservation requirement; and

(d) to provide for unavoidable consequences of scientific activities not otherwise authorised under sub-paragraphs (a), (b) or (c) above, or of the construction and operation of scientific support facilities.

3. The issue of such permits shall be limited so as to ensure that:

(a) no more native mammals, birds, plants or invertebrates are taken than are strictly necessary to meet the purposes set forth in paragraph 2 above;

(b) only small numbers of native mammals or birds are killed, and in no case more are killed from local populations than can, in combination with other permitted

takings, normally be replaced by natural reproduction in the following season; and

(c) the diversity of species, as well as the habitats essential to their existence, and the balance of the ecological systems existing within the Antarctic Treaty area are maintained.

4. Any species of native mammals, birds, plants and invertebrates listed in Appendix A to this Annex shall be designated "Specially Protected Species", and shall be accorded special protection by the Parties.

5. Designation of a species as a Specially Protected Species shall be undertaken according to agreed procedures and criteria adopted by the ATCM.

6. The Committee shall review and provide advice on the criteria for proposing native mammals, birds, plants or invertebrates for designation as a Specially Protected Species.

7. Any Party, the Committee, the Scientific Committee on Antarctic Research or the Commission for the Conservation of Antarctic Marine Living Resources may propose a species for designation as a Specially Protected Species by submitting a proposal with justification to the ATCM.

8. A permit shall not be issued to take a Specially Protected Species unless the taking:

(a) is for a compelling scientific purpose; and

(b) will not jeopardise the survival or recovery of that species or local population;

9. The use of lethal techniques on Specially Protected Species shall only be permitted where there is no suitable alternative technique.

10. Proposals for the designation of a species as a Specially Protected Species shall be forwarded to the Committee, the Scientific Committee on Antarctic Research and, for native mammals and birds, the Commission for the Conservation of Antarctic Marine Living Resources, and as appropriate, the Meeting of the Parties to the Agreement on the Conservation of Albatrosses and Petrels and other organisations. In formulating its advice to the ATCM on whether a species should be designated as a Specially Protected Species, the Committee shall take into account any comments provided by the Scientific Committee on Antarctic Research, and, for native mammals and birds, the Commission for the Conservation of Antarctic Marine Living Resources, and as appropriate, the Meeting of the Parties to the Agreement on the Conservation of Albatrosses and Petrels and other organisations.

11. All taking of native mammals and birds shall be done in the manner that involves the least degree of pain and suffering practicable.

ARTICLE 4
INTRODUCTION OF NON-NATIVE SPECIES AND DISEASES

1. No species of living organisms not native to the Antarctic Treaty area shall be introduced onto land or ice shelves, or into water, in the Antarctic Treaty area except in accordance with a permit.

2. Dogs shall not be introduced onto land, ice shelves or sea ice.

3. Permits under paragraph 1 above shall:

(a) be issued to allow the importation only of cultivated plants and their reproductive propagules for controlled use, and species of living organisms for controlled experimental use; and

(b) specify the species, numbers and, if appropriate, age and sex of the species to be introduced, along with a rationale, justifying the introduction and precautions to be taken to prevent escape or contact with fauna or flora.

4. Any species for which a permit has been issued in accordance with paragraphs 1 and 3 above shall, prior to expiration of the permit, be removed from the Antarctic Treaty area or be disposed of by incineration or equally effective means that eliminates risk to native fauna or flora. The permit shall specify this obligation.

5. Any species, including progeny, not native to the Antarctic Treaty area that is introduced into that area without a permit that has been issued in accordance with paragraph 1 and 3 above, shall be removed or disposed of whenever feasible, unless the removal or disposal would result in a greater adverse environmental impact. Such removal or disposal may include by incineration or by equally effective means, so as to be rendered sterile, unless it is determined that they pose no risk to native flora or fauna. In addition, all reasonable steps shall be taken to control the consequences of that introduction to avoid harm to native fauna or flora.

6. Nothing in this Article shall apply to the importation of food into the Antarctic Treaty area provided that no live animals are imported for this purpose and all plants and animal parts and products are kept under carefully controlled conditions and disposed of in accordance with Annex III to the Protocol.

7. Each Party shall require that precautions are taken to prevent the accidental introduction of micro-organisms (e.g., viruses, bacteria, yeasts, fungi) not present naturally in the Antarctic Treaty area.

8. No live poultry or other living birds shall be brought into the Antarctic Treaty area. All appropriate efforts shall be made to ensure that poultry or avian products imported into Antarctica are free from contamination by diseases (such as Newcastle's Disease, tuberculosis, and yeast infection) which might be harmful to native flora and fauna. Any poultry or avian products not consumed shall be removed from the Antarctic Treaty area or disposed of by incineration or equivalent means that eliminates the risks of introduction of micro-organisms (e.g. viruses, bacteria, yeasts, fungi) to native flora and fauna.

9. The deliberate introduction of non-sterile soil into the Antarctic Treaty area is prohibited. Parties should, to the maximum extent practicable, ensure that non-sterile soil is not unintentionally imported into the Antarctic Treaty area.

ARTICLE 5
INFORMATION

Each Party shall make publicly available information on prohibited activities and Specially Protected Species to all those persons present in or intending to enter the Antarctic Treaty area with a view to ensuring that such persons understand and observe the provisions of this Annex.

ARTICLE 6
EXCHANGE OF INFORMATION

1. The Parties shall make arrangements for:

(a) collecting and annually exchanging records (including records of permits) and statistics concerning the numbers or quantities of each species of native mammal, bird, plant or invertebrate taken in the Antarctic Treaty area; and

(b) obtaining and exchanging information as to the status of native mammals, birds, plants, and invertebrates in the Antarctic Treaty area, and the extent to which any species or population needs protection.

2. As early as possible, after the end of each austral summer season, but in all cases before 1 October of each year, the Parties shall inform the other Parties as well as the Committee of any step taken pursuant to paragraph 1 above and of the number and nature of permits issued under this Annex in the preceding period of 1 April to 31 March.

ARTICLE 7
RELATIONSHIP WITH OTHER AGREEMENTS
OUTSIDE THE ANTARCTIC TREATY SYSTEM

Nothing in this Annex shall derogate from the rights and obligations of Parties under the International Convention for the Regulation of Whaling.

ARTICLE 8
REVIEW

The Parties shall keep under continuing review measures for the conservation of Antarctic fauna and flora, taking into account any recommendations from the Committee.

ARTICLE 9
AMENDMENT OR MODIFICATION

1. This Annex may be amended or modified by a measure adopted in accordance with Article IX (1) of the Antarctic Treaty. Unless the measure specifies otherwise, the amendment

or modification shall be deemed to have been approved, and shall become effective, one year after the close of the Antarctic Treaty Consultative Meeting at which it was adopted, unless one or more of the Antarctic Treaty Consultative Parties notifies the Depositary, within that time period, that it wishes an extension of that period or that it is unable to approve the measure.

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

Appendix A: Specially Protected Species

Ommatophoca rossii, Ross seal.

2. Decisions

Decision 1 (2009)

Meeting of Experts on Climate Change

The Representatives,

Decide to:

1. convene a Meeting of Experts under the provisions of Recommendation IV-24, with the aim of discussing relevant matters related to implications of climate change for management and governance of the Antarctic region;
2. request the Meeting of Experts to examine the following topics relevant to the issue of climate change in Antarctica:
    - key scientific aspects of climate change and consequences of such change to the Antarctic terrestrial and marine environment,
    - implications of climate change to management of Antarctic activities,
    - the need for monitoring, scenario planning and risk assessments,
    - outcomes of the Copenhagen negotiations relevant for the Antarctic,
    - the need for further consideration of any of the above issues and manners in which this can be achieved;
3. encourage attendance at the Meeting by representatives from Consultative Parties and invite experts from Non-consultative Parties, the Scientific Committee on Antarctic Research (SCAR), the Council of Managers of National Antarctic Programs (COMNAP), the International Association of Antarctica Tourist Operators (IAATO), the Antarctic and Southern Ocean Coalition (ASOC), the International Union for the Conservation of Nature (IUCN), the International Maritime Organization (IMO), the International Hydrographical Organization (IHO), the World Meteorological Organization (WMO), the Intergovernmental Panel for Climate Change (IPCC) and the United Nations Environment Programme (UNEP);

4. accept the offer of the Norwegian Government to host the Meeting of Experts in Norway, which should be held in advance of ATCM XXXIII (potentially Week 14, around 6–9 April 2010);

5. in accordance with Recommendation IV-24, request Norway to submit a report of the Meeting of Experts to ATCM XXXIII for consideration.

Decision 2 (2009)

Renewal of the contract of the Secretariat's External Auditor

The Representatives,

Recalling the Financial Regulations for the Secretariat of the Antarctic Treaty annexed to Decision 4 (2003), and specifically Regulation 11 (External Audit);

Conscious that the Secretariat of the Antarctic Treaty conducts the majority of its financial transactions in Argentina, and that the detailed rules of book-keeping and accounting are country specific; and

Noting Argentina's proposal to designate the Sindicatura General de la Nación (SIGEN) as the external auditor of the Secretariat;

Decide to:

1. designate SIGEN as the external auditor of the Secretariat of the Antarctic Treaty for the Financial Years ending in 2010 to 2013, in accordance with Regulation 11.1;
2. authorize the Executive Secretary to negotiate a contract with SIGEN to carry out annual external audits for the abovementioned years in accordance with Regulation 11.3, the Annex to this Decision and the budgetary limits set by the ATCM.

Tasks to be carried out by the external auditor

To provide external audit reports covering the financial years ending in 2010, 2011, 2012 and 2013 in accordance with Regulation 11.3 of the Financial Regulations annexed to Decision 4 (2003).

The audit report shall address:

- Implementation of regulations adopted by the ATCM
- Internal controls – Regulations and Procedures
- Internal oversight of administrative processes, payments, custody of funds, and assets
- Budgeting
- Comparative budget reports
- Expenditure efficiency analysis
- Budget execution oversight
- Analysis of the establishment of new area units
- Control and reporting of contributions
- Establishment and oversight of the General Fund, the Working Capital Fund, the Future Meeting Fund, the Staff Replacement Fund, the Staff Termination Fund and any other Funds held by the Secretariat
- Income and expense accounts
- Trust funds
- Custody of funds – Investments
- Accounting oversight in accordance with Regulation 10 of Decision 4 (2003)
- Drafting an external auditor report
- Other matters which may be necessary to ensure sound financial management of the Antarctic Treaty Secretariat.

The provisional financial report for each Financial Year should be submitted by the Executive Secretary to SIGEN no later than 1 June of the year in which the Financial Year concludes and the final audited report should be submitted by SIGEN to the Executive Secretary no later than 1 September of the year in which the Financial Year concludes.

Decision 3 (2009)

Revised guidelines for the submission, translation and distribution of documents for the ATCM and the CEP

The Representatives,

Considering the desirability of updating the guidelines on the submission and handling of documents for the Antarctic Treaty Consultative Meeting (ATCM) and the Committee for Environmental Protection (CEP),

Considering also the need to reduce the cost of translation of documents submitted to the ATCM and the CEP,

Decide to:

1. replace the Revised Guidelines on Circulation and Handling of CEP Documents appended to Decision 2 (2001) and the Revised Guidelines for Document Translation and Distribution included in Appendix 1 of the Final Report of the 25th ATCM (Warsaw, 2002) with the Guidelines appended to this Decision;
2. consider Recommendation I-XVI (Canberra, 1961) no longer current.

Revised guidelines for the submission, translation and distribution of documents for the ATCM and the CEP

1. These guidelines apply to the distribution and translation of official papers for the Antarctic Treaty Consultative Meeting (ATCM) and for the Committee for Environmental Protection (CEP). These papers consist of Working Papers, Secretariat Papers and Information Papers.

2. Documents to be translated, i.e. Working Papers, Secretariat Papers (with the exception of the Secretariat's Report and Programme), reports submitted to the ATCM by ATCM Observers and invited Experts according to the provisions of Recommendation XIII-2 or in relation to Article III-2 of the Antarctic Treaty, and Information Papers which a Consultative Party has requested be translated should not exceed 1500 words. When calculating the length of a paper, proposed Measures, Decisions and Resolutions and their attachments are not included.

3. A Working Paper prepared by Consultative Parties or Observers and an Information Paper which a Consultative Party has requested be translated should be received by the Antarctic Treaty Secretariat ("the Secretariat") no later than 45 days before the Consultative Meeting.

4. The Secretariat should receive Information Papers for which no translation has been requested no later than 30 days before the Meeting.

5. When a revised version of a Paper made after its initial submission is resubmitted to the Secretariat for translation, the revised text should indicate clearly the amendments that have been incorporated.

6. The Papers should be transmitted to the Secretariat by electronic means.

7. Papers will be uploaded to the ATCM Home Page established by the Secretariat for the ATCM in question. Working Papers which were received before the 45 days limit should be uploaded as soon as possible and in any case not later than 30 days before the Meeting.

8. Parties may agree to Working Papers and Information Papers for which a translation has not been requested according to Paragraph 2 above to be presented to the Secretariat during the Meeting for translation.

9. No Working Paper, Information Paper or Secretariat Paper submitted to the ATCM will be used as the basis for discussion at the ATCM unless it has been translated into the four official languages.

10. Within six months of the end of the Consultative Meeting the Secretariat should circulate through diplomatic channels and also post on the ATCM Home Page the Final Report of that Meeting in the four official languages.

Decision 4 (2009)

Approval of Secretariat's Financial Report for 2007/08 and Programme and Budget for 2009/10

The Representatives,

Recalling Measure 1 (2003) 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);

Recalling also Decision 7 (2005), in particular the provisions in Point 3 on the establishment of a Special Fund to be used to defray the expenses of interpretation and translation of the first Antarctic Treaty Consultative Meeting to be held after the entry into effect of Measure 1 (2003);

Bearing in mind the Financial Regulations for the Secretariat of the Antarctic Treaty annexed to Decision 4 (2003);

Decide to:

1. approve the audited Financial Report for 2007/08 annexed to this Decision (Annex 1);
2. take note of the Secretariat's Report on its work in 2008/09 (SP 3 rev. 2), including the Estimate of Income and Expenditures 2008/09 which is annexed to this Decision in Annex 2;
3. after $350,000 of the Special Fund set up under the provisions of Decision 7 (2005) has been used to defray the expenses of interpretation and translation of the first Antarctic Treaty Consultative Meeting to be held after the entry into effect of Measure 1 (2003), to replenish the Fund, to be renamed the Translation Contingency Fund, to the level of $30,000 to deal with translation

expenses caused by unforeseen increases in the volume of documents submitted to the ATCM for translation;

4. approve the Secretariat's Work Programme and Budget for 2009/10 annexed to this Decision in Annex 3.

Financial Report for 2007/08

1. Statement of Income and Expenditure for All Funds for the Period 1 April 2007 to 31 March 2008

INCOME	Budget	Prov. Report	Def. Report
Contributions 2006/7		$22.661	$22.661
Contributions 2007/8	$772.730	$656.163	$656.163
Other income[1]		$29.506	$6.440
TOTAL	**$772.730**	**$708.330**	**$685.264**
EXPENDITURES			
Salaries			
Executive Staff	$210.733	$210.740	$210.740
General Staff	$124.042	$123.884	$125.286
Total Salaries	**$334.775**	**$334.624**	**$336.026**
Goods and Services			
Audit	$7.185	$0	$6.532
Data entry	$5.870	$4.349	$4.349
Documentation services	$8.600	$1.795	$1.795
Legal advice	$4.800	$4.257	$4.257
Miscellaneous	$7.074	$8.416	$8.416
Office expenses	$13.700	$9.137	$9.137
Postage	$11.900	$5.836	$5.836
Printing	$30.700	$28.704	$25.484
Representation	$7.600	$7.272	$7.272
Telecom	$7.000	$11.148	$11.148
Training	$6.500	$4.623	$4.623
Translation	$152.600	$187.152	$187.152
Travel	$99.500	$130.349	$130.349
Total Goods and Services	**$363.029**	**$403.039**	**$406.350**
Equipment			
Documentation	$4.000	$382	$382
Furniture	$5.500	$10.687	$10.687
IT Equipment	$35.000	$15.947	$15.947
Development	$14.500	$14.213	$14.213
Total Equipment	**$59.000**	**$41.229**	**$41.229**
Staff Replacement Fund	$12.500	$12.500	$12.500
Staff Termination Fund	$3.426	$3.426	$3.426
Working Capital Fund		$4.995	$4.995
TOTAL	**$772.730**	**$799.812**	**$804.526**
Deficit		-$91.482	-$119.263

[1] **Other Income**

	Prov. Report	Def. Report
Bank interest	$2.203	$ 2.203
Exchange rate adjustment	$25.673	$ 2.607
Value Added Tax recovery	$1.630	$ 1.630
	$29.506	$ 6.440

Annex A

2. Statement of Financial Position on 31 March 2008

ASSETS	Prov. Report	Def. Report
Current assets		
Cash and cash equivalents[2]	$966.891	$966.891
Credits[3]	$8.760	$8.760
Total	**$975.651**	**$975.651**
Non-current assets[4]		
Plant and equipment[5]	$58.751	$61.991
Total	**$58.751**	**$61.991**
Total Assets	**$1.034.402**	**$1.037.642**
LIABILITIES		
Current liabilities		
Payables[6]	$48.914	$53.629
Unearned income[7]	$134.925	$134.925
Total	**$183.839**	**$188.554**
Non-current liabilities		
Staff Termination Fund	$13.704	$13.704
Staff Replacement Fund	$50.000	$50.000
Total	**$63.704**	**$63.704**
Total Liabilities	**$247.543**	**$252.258**
NET ASSETS	**$786.859**	**$785.385**

[2] **Cash and equivalents**

Cash	$172
BNA US Dollar account	$960.921
BNA Argentine Peso account	$5.798
Total	$966.891

[3] **Credits**

Prepayments to suppliers	$785
VAT to be reimbursed	$7.966
Turnover tax to be reimbursed	$9
Total	$8.760

[4] The use of the Secretariat offices is provided rent-free by the Ministry of Foreign Affairs, International Trade and Worship of the Argentine Republic.

[5] **Plant and equipment**

	Prov. Report	Def. Report
Plant and equipment 31-3-2007	$44.315	$44.315
Disbursements 2007/08	$21.490	$21.490
Books		$3.240
Depreciation	-$7.054	-$7.054
Plant and equipment 31-3-2008	$58.751	$61.991

[6] **Payables**

	Prov. Report	Def. Report
Provision for income tax refund ex Reg. 5.6 of the Staff Regulations	$38.484	$ 38.484
Owing to suppliers	$10.430	$ 15.145
	$48.914	$ 53.629

[7] Contributions for 2008/09 received during 2007/08, see under 3.

Annex A

Represented by Funds	Balance 01-04-2007	Operations 2007/08	Balance 31-03-2008
General Fund	$370.864	-$119.262	$251.602
Working Capital Fund	$128.788	$4.995	$133.783
Future Meeting Fund	$400.000		$400.000
Net Assets	$899.652		$785.385

Accumulated Surplus as of 31-3-2008	
General Fund	$251.602
Fixed Assets	-$61.991
Available surplus	$189.611

3. Contributions

Applicable Financial Year	2006/07	2007/08		2008/09
Received in	2007/08	2006/07	2007/08	2007/08
Argentina			$35.002	
Australia			$35.002	
Belgium				
Brazil			$23.222	
Bulgaria			$19.688	
Chile			$26.756	
China			$26.756	
Ecuador			$19.688	
Finland		$23.222		
France		$34.547		$22.289
Germany			$30.290	$20.461
India		$26.756		
Italy			$30.290	
Japan			$35.002	
Korea			$23.222	
Netherlands		$26.756		
New Zealand		$35.002		$14.936
Norway		$35.002		$14.918
Peru				
Poland			$23.222	
Russia			$23.222	$18.343
South Africa				
Spain			$26.756	
Sweden		$26.756		$11.449
United Kingdom			$35.002	$14.948
United States		$35.002		$17.581
Ukraine				
Uruguay	$22.661			
	$22.661	**$243.043**	**$413.120**	**$134.925**
Total contributions 2007/08			$ 656.163	

JOHANNES HUBER
SECRETARIO EJECUTIVO
SECRETARIA DEL TRATADO ANTARTICO

Roberto Alan Pennell
Certified Public Accountant

Annex A

SIGEN

Annex I

INDEPENDENT AUDITOR'S REPORT

XXXII Antarctic Treaty Consultative Meeting 2009, Baltimore, USA.

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, 2007 and ended at March 31th, 2008.

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 31th, 2008, and of its financial performance 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, 6th march, 2009

Sindicatura General De La Nación
Av. Corrientes 381 Buenos Aires
República Argentina

Estimate of Income and Expenditure during 2008/09

	2007/08	Budget 2008/09	Est. 2008/09
Surplus/deficit		$222,238	$189,611
INCOME			
Previous FY contributions	$22,661	$111,571	$138,317
Current FY contributions	$656,163	$394,567	$404,118
Contributions	**$678,824**	**$506,138**	**$542,435**
Future Meeting Fund		**$40,578**	**$40,578**
Bank Interest etc.	$3,833	$2,100	$1,300
Exchange gains	$2,607	$100	$10,000
Other Income	**$6,440**	**$2,200**	**$11,300**
TOTAL	**$685,264**	**$771,154**	**$783,924**
EXPENDITURES			
SALARIES			
Executive Salaries	$210,740	$220,318	$220,318
General Staff	$125,286	$144,486	$144,486
SALARIES	**$336,026**	**$364,804**	**$364,804**
GOODS & SERVICES			
Audit	$6,532	$14,370	$7,185
Data entry	$4,349	$3,500	$2,000
Documentation Services	$1,795	$0	$2,100
Legal Advice	$4,257	$5,400	$5,000
Miscellaneous	$8,416	$6,626	$8,000
Office Expenses	$9,137	$10,000	$14,600
Postage	$5,836	$6,600	$3,400
Printing & copying	$25,484	$26,000	$28,500
Representation	$7,272	$3,000	$3,000
Telecommunications	$11,148	$9,600	$9,600
Training	$4,623	$600	$2,000
Translation & Editing	$187,152	$212,300	$235,033
Travel	$130,349	$67,700	$43,000
GOODS & SERVICES	**$406,350**	**$365,696**	**$363,418**
EQUIPMENT			
Documentation	$382	$1,000	$1,000
Furniture	$10,687	$4,500	$5,000
IT Equipment	$15,947	$14,500	$22,600
Development	$14,213	$11,000	$21,000
EQUIPMENT	**$41,229**	**$31,000**	**$49,600**
Subtotal	**$783,605**	**$761,500**	**$774,322**
Future Meeting Fund			
Staff Replacement Fund	$12,500		
Staff Termination Fund	$3,426		
Working Capital Fund	$4,995		$14,149
TOTAL EXPENDITURES	**$804,526**		**$788,471**
Surplus/deficit	-$119,263		-$4,547

Funds	01-04-2008	Operations 2008/09	31-03-2008
General Fund	$251,602	-$194,158[1]	$57,444
Working Capital Fund	$133,783	$12,540	$146,323
Future Meeting Fund	$400,000	-$40,578	$359,422
Net Assets	$785,385		$563,189

3. Contributions

Financial Year	2006/07	2007/08	2008/09		2009/10
Received	2008/09	2008/09	2007/08	2008/09	2008/09
Argentina				$14,948	
Australia				$14,948	
Belgium		$23,222		$9,905	
Brazil				$9,905	
Bulgaria				$8,449	
Chile				$11,453	
China				$11,388	
Ecuador				$8,421	
Finland				$9,949	
France			$22,289		
Germany			$20,461		
India				$11,439	
Italy				$12,948	
Japan				$14,948	
Korea				$9,949	
Netherlands				$11,449	
New Zealand			$14,936		
Norway			$14,918		
Peru		$19,688			
Poland				$10,061	
Russia			$18,343		
South Africa		$26,756		$17,055	$27,859
Spain				$26,756	
Sweden			$11,449		
Ukraine	$22,217	$23,212			
United Kingdom			$14,948		
United States			$49,581		
Uruguay		$23,222		$23,222	
TOTAL	**$22,217**	**$116,100**	**$166,925**	**$237,193**	
		$138,317		**$404,118**	**$27,859**

[1] **Operations General Fund 2008/09**

Contributions + other income	$553,735
Transfer from FMF	$40,578
Expenditures	-$788,471
	-$194,158

Secretariat's Work Programme and Budget for 2009/10

Introduction

This work programme outlines the activities proposed for the Secretariat in the Financial Year 2009/10 (1 April 2009 to 31 March 2010) and in the first quarter of the Financial Year 2010/11. The main areas of activity of the Secretariat are treated in the first four chapters, which are followed by a section on management and a forecast of the programme in 2010/11. The Budget for 2009/10, the Forecast Budget for 2010/11 and the accompanying contribution and salary scales are included in the appendices.

The programme and the accompanying budget figures for 2009/10 are based on the Forecast Budget for 2009/10 (Decision 4 (2007), Appendix 1) and the experience of the past year.

The Financial Year 2009/10 will be marked by the replacement of the Executive Secretary in September 2009. The Programme, therefore, focuses on the regular activities, such as preparation of the 33rd ATCM, publication of Final Reports and the various specific tasks assigned to the Secretariat under Measure 1 (2003).

The entry into effect of Measure 1 (2003) is expected at any time. The responsibility for the interpretation and translation of the annual ATCM, which has been borne by the Host Country until now, will then be taken over by the Secretariat. This will mean that the budget, which is now less than $900,000, will rise to around $1,300,000. To show the effect of these changes, in this programme you will find, in addition to the Forecast Budget and Contribution Scale for 2010/11, a global estimate of the Forecast Budget (including full translation costs) and Contribution Scale for 2011/12. These are provided not for approval by the ATCM but only as indicative estimates to assist Parties.

Contents

1. ATCM/CEP support

ATCM XXXII and XXXIII

The Secretariat will publish and distribute the Final Report of the 32nd ATCM in the four Treaty languages within six months of the end of the meeting.

The Secretariat will support the 33rd ATCM by gathering and collating the documents for the meeting and publishing them in a restricted section of the Secretariat website, linked to the ATCM XXXIII website. The Delegates section will also provide online registration for delegates and an up to date list of delegates to download.

The Secretariat will support the functioning of the ATCM through the production of Secretariat Papers, a Manual for Delegates, as well as annotated agendas for the ATCM, the CEP and the Working Groups

The Secretariat will maintain close contact with the Government of Uruguay in connection with the preparation of the 33rd ATCM in 2010, and with the Government of Argentina in connection with the preparation of the 34th ATCM.

Review of ATCM Recommendations

Depending on the decisions taken by the 32nd ATCM on this subject, the Secretariat will produce revised or new resource papers to prepare decisions of the ATCM on recommendations that are no longer current.

Coordination and contact

Aside from maintaining constant contact per email, telephone and other means with the parties and international institutions of the Antarctic Treaty system, attendance at meetings is an important tool to maintain coordination and contact.

Most of the travel expenses in the budget will be spent on direct support of the ATCM. In 2009, the Executive Secretary, the Assistant Executive Officer, the Information Officer, the IT Officer and the Editor will travel to Baltimore to support the 32nd ATCM and 12th CEP, in cooperation with the host government secretariat. The staff will be strengthened during the meeting with two staff members contracted ad hoc.

The other travel to be undertaken is as follows:

– COMNAP Punta Arenas 2–6 August 2009

The COMNAP meeting is important in view of the close cooperation between the Antarctic Treaty Secretariat and the COMNAP Secretariat in the coordination of electronic information exchange systems. Attendance at the meeting will provide an opportunity to strengthen the connections and interaction with COMNAP and brief the NAPs about the issues to be faced in starting the operational phase of the EIES. Another issue on which contact with COMNAP is necessary is the review of recommendations on operational matters.

– CCAMLR Hobart 2–6 November 2009

The CCAMLR meeting, which takes place roughly midway between succeeding ATCMs, provides a good opportunity for the Secretariat to brief the ATCM Representatives, many of whom attend the CCAMLR meeting, on developments in the Secretariat's work. Liaison with the CCAMLR Secretariat is also important for the Antarctic Treaty Secretariat, as many of its regulations were modelled after those of the CCAMLR Secretariat.

– ATME Wellington 8–10 December 2009

The Secretariat will provide data and administrative services as needed and inform the Parties about possible consequences of ATME recommendations for the Secretariat's work.

– IPY JC (Place and date not yet known)

On instruction from the ATCM, the Executive Secretary has been attending the IPY Joint Committee meetings as one of the two observers (the other observer being from the Arctic Council) and providing reports to the ATCM.

Development of the Secretariat website

Following the recent release of a major renovation of the web site, the Secretariat will continue its development areas as follows:

- The reporting facilities of the website databases, especially the Antarctic Treaty database, will be further developed.
- The Secretariat will keep incorporating meeting documents from previous ATCM and SATCM. Insofar as these documents are not available in digital form, this involves scanning, proofreading and data entry printed documents.

Support of intersessional activities

During the last years both the CEP and the ATCM produced an important amount of intersessional work mainly through intersessional contact groups (ICG). The Secretariat will give technical support for the online establishment of the ICGs agreed at the 32nd ATCM and 12th CEP and by producing specific documents if required by the ATCM or the CEP.

Updating Information online

The Secretariat will update the website with the measures adopted by the ATCM and with the information produced by the CEP and the ATCM.

Printing

Apart of the Final Report the Secretariat will print (if approved by the ATCM) the four Site Guidelines adopted by the 31st ATCM, which were not printed last year because of budgetary restrictions, and any new guidelines the 32nd ATCM may adopt.

2. Information Exchange

General

The Secretariat will continue to assist Parties in posting their information exchange materials, as well as integrating information on EIAs in the EIA database and so on.

Electronic Information Exchange System

During the second operational season and depending on the decisions of the 32nd ATCM the Secretariat will make any adjustments necessary to facilitate the use of the electronic system by the Parties.

3. Records and Documents

Documents of the ATCM

The Secretariat will continue its efforts to complete its archive of the Final Reports and other records of the ATCM and other meetings of the Antarctic Treaty system in the four Treaty languages. Assistance from the Parties in searching their archives will be essential in achieving a complete archive.

Antarctic Treaty database

The database of the Recommendations, Measures, Decisions and Resolutions of the ATCM is at present complete in English and almost complete in Spanish and French, although the Secretariat is still lacking a few copies of Final Reports in those languages to get the authentic texts of those measures. In Russian, more Final Reports are lacking, and materials that have been received are being converted into electronic formats and proofread.

Documentation Centre

When the classification data to be provided by the Scott Polar Research Institute library will be available, they will be used to reorganize the ATS library in a more systematic way. The Secretariat's collection of necessary reference materials and periodicals on the Antarctic Treaty system will be maintained.

Antarctic Treaty Handbook

Volume I of the 10th Edition of the Handbook of the Antarctic Treaty System will consist of the texts of the Antarctic Treaty and the subsidiary Antarctic agreements and short factual introductions.

4. Public Information

The Secretariat and its website will continue to function as a clearinghouse for information on the Parties' activities and relevant developments in Antarctica as well as specific information related to the follow up and heritage of the International Polar Year (IPY, 2007-9). The Secretariat will maintain the special IPY section in its website to provide information, links, news and other material related to the event.

5. Management

Personnel

On January 1, 2009, the Secretariat staff consisted of the following persons:

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

José Luis Agraz	id.	Information Officer	G2	1-4-2005
Diego Wydler	id.	Information Technology Officer	G1	1-4-2008
Roberto Alan Fennell	id.	Accountant (part time)	G3	1-12-2008
Pablo Wainschenker	id.	Editor	G3	1-2-2006
Ms Violeta Antinarelli	id.	Librarian (part time)	G3	1-4-2007
Ms Gloria Fontan	id.	Office Manager	G5	1-4-2006
Ms Karina Gil	id.	Data Entry Assistant (part time)	G6	1-4-2007

In order to carry out the activities in this programme, the current staff complement should be adequate.

Now that the Electronic Information Exchange System (EIES) is in its operational version, the Information Officer is the contact point for Parties who have questions relating to the operation of the system and of developing solutions to deal with any operational problems. He also has had to take on a coordinating role with regard to quality control of the Antarctic Treaty Database. It is proposed therefore to upgrade the position of Information Officer from rank G-2 to rank G-1 from 1 April 2009.

Correspondence and Internal Documents Database

Up till now the Secretariat has used a privately developed database to keep track of its correspondence and internal documents. The local interface to the Contacts database is also based on a privately developed database. Both applications will be replaced by a new application linked to the Contacts Database to create a central repository of both the electronic correspondence of the Secretariat and its internal documents.

Financial matters

The budget has been compiled on the basis of the figures in the Forecast Budget. The main changes are as follows:

On the *Income* side, not all Parties made their contributions for 2008/09 on time. The amount still expected from Peru and Ukraine is $32,613.

As to *Expenditures*, the following items have been adjusted:

- Salaries. Salaries for the general staff have been recalculated to take into account the pay rise for public sector employees in Argentina for 2008 (21% according to the official statistics used by the IMF) adjusted for the devaluation of the Argentine Peso during the same period (from $0,32 to $0,29). Because of the overlapping of scales, the repositioning of the Information Officer position (see above) has no financial consequences. Salaries for executive staff have been recalculated to take into account (for 50%) of the local salary rise and for 50% of the international inflation rate published by the IMF in the World Economic Outlook of November 2008 (1.9%).
- Office expenses have been increasing because of serious price rises faced by the Secretariat, generally between 40% and 80% during the last two years.
- Printing and postage costs are also rising fast. Furthermore, according to the provisions of Resolution 5 (2005) the Secretariat is required to print the Site Guidelines. This was cancelled last year as an emergency measure.
- Because of the financial crisis facing the Secretariat last year, radical cuts were made at ATCM XXXI in the proposed budget. The amounts of the reductions could be met and even exceeded in some cases, but in some others they could not. The corresponding amounts in the Forecast Budget for 2009/10 have been readjusted to a more realistic level. This is the case with a small item like training, but also with some large items like IT equipment and development.
- The expected expenses for translations will be higher than foreseen in the Forecast Budget because the volume of papers submitted for translation to the 32nd ATCM has been higher than foreseen. It is proposed to cover this shortfall by partially postponing the replenishment of the Future Meeting Fund, originally included in the Forecast Budget for 2009/10, to the Forecast Budget for 2010/11.

6. Forecast programme 2010/11

It is expected that most of the ongoing activities of the Secretariat will be continued in 2009/10 so, unless the programme would undergo major changes, no changes in the staff complement are foreseen for 2009/10.

The Forecast Budget 2010/11 has been compiled on the basis of the draft budget for 2009/10 with some correction for inflation, using the inflation figures from the IMF World Economic Outlook of April 2008: 1.9% for international prices and 9% for prices in Argentina.

In order to provide a buffer for unpredictable and uncontrollable expenses caused by rises in the number of documents submitted to the Secretariat for translation, it is proposed to maintain the Future Meeting Fund at a level of $30,000 and rename it the Translation Contingency Fund (see Circular No 4 of 2009).

The budgets after FY 2010/11 will be much higher to provide for the translation and interpretation expenses of the ATCM. As a consequence the provision in the 2010/11 Forecast Budget for the Working Capital Fund, which according to the Financial Regulations has to be maintained at 1/6 of the Secretariat's budget, has been increased to $62,259. To facilitate Parties' forward financial planning, an estimate of the Forecast Budget and an estimated Contribution Scale for 2011/12 have been added.

Appendix 1

Budget 2009/10, Forecast budget 2010/11 and est. 2011/12

	08/09 (est.)	Forecast 09/10	Budget 09/10	Forecast 10/11	Est. 11/12
INCOME					
Acc. Surplus	$189,611				
Previous FY contributions	$138,317		$32,613		
Current FY contributions	$404,118	$808,124	$808,124	$899,942	$1,294,500
Future Meeting Fund	$40,578				
Staff Replacement Fund		$50,000	$50,000		
Other	$11,300	$2,500	$1,400	$2,500	$2,500
TOTAL	**$783,924**	**$860,624**	**$892,137**	**$902,442**	**$1,297,000**
EXPENDITURES					
SALARIES					
Executive Staff	$220,318	$228,912	$232,425	$233,560	
General Staff	$144,486	$158,094	$161,905	$176,945	
Total Salaries	**$364,804**	**$387,006**	**$394,329**	**$410,505**	**$450,000**
GOODS AND SERVICES					
Audit	$7,185	$7,840	$7,185	$7,800	
Data entry	$2,000	$2,000	$2,000	$2,200	
Doc. Services	$2,100	$2,000	$2,000	$2,200	
Legal advice	$5,000	$5,900	$5,900	$6,400	
Miscellaneous	$8,000	$8,000	$8,000	$8,500	
Office expenses	$14,600	$11,000	$15,200	$16,700	
Postage	$3,400	$7,200	$7,700	$8,500	
Printing	$28,500	$28,300	$23,100	$24,900	
Representation	$3,000	$3,300	$3,300	$3,600	
Staff Replacement		$50,000	$50,000	$0	
Telecom	$9,600	$9,800	$10,700	$11,500	
Training	$2,000	$1,000	$1,400	$1,500	
Translation	$235,033	$212,300	$248,500	$214,500	$594,500
Travel	$43,000	$35,000	$43,000	$46,500	
Total Goods & Services	**$363,418**	**$383,640**	**$427,985**	**$354,800**	**$763,000**
EQUIPMENT					
Documentation	$1,000	$1,100	$1,100	$1,300	
Furniture	$5,000	$4,900	$4,400	$5,600	
IT Equipment	$22,600	$16,000	$21,400	$23,600	
Development	$17,500	$11,000	$15,000	$15,100	
Total equipment	**$46,100**	**$33,000**	**$41,900**	**$45,600**	**$50,000**
TOTAL	**$774,322**	**$803,646**	**$864,214**	**$810,905**	**$1,263,000**
Future Meeting Fund		$40,578	$13,001	$7,577	$0
Staff Replacement Fund				$13,000	$13,000
Staff Termination Fund		$7,900	$7,900	$8,700	$9,000
Working Capital Fund	$14,149	$8,500	$2,475	$62,260	$12,000
EXPENDITURES	**$788,471**	**$860,624**	**$887,590**	**$902,442**	**$1,297,000**
Surplus/deficit	-$4,547	$0	$4,547		
Summary of Funds	**31-03-2008**	**31-03-2009**	**31-03-2010**	**31-03-2011**	**31-03-2012**
Future Meeting Fund	$400,000	$359,422	$372,423	$30,000[1]	$30,000
Staff Replacement Fund	$50,000	$50,000		$13,000	$26,000
Staff Termination Fund	$13,704	$13,704	$21,604	$30,304	$39,304
Working Capital Fund	$133,783	$147,932	$150,407	$212,667	$224,667

[1] It is assumed that before 31-3-2011 $350,000 will be paid out of the Future Meeting Fund for the expenses of translation and interpretation of ATCM XXXIII. After this the Fund will be renamed the Translation Contingency Fund.

Appendix 2

Contribution Scale 2010/11

2010/11	Cat.	Mult.	Variable	Fixed	Total
Argentina	A	3.6	$24,470	$16,070	$40,540
Australia	A	3.6	$24,470	$16,070	$40,540
Belgium	D	1.6	$10,875	$16,070	$26,946
Brazil	D	1.6	$10,875	$16,070	$26,946
Bulgaria	E	1	$6,797	$16,070	$22,868
Chile	C	2.2	$14,954	$16,070	$31,024
China	C	2.2	$14,954	$16,070	$31,024
Ecuador	E	1	$6,797	$16,070	$22,868
Finland	D	1.6	$10,875	$16,070	$26,946
France	A	3.6	$24,470	$16,070	$40,540
Germany	B	2.8	$19,032	$16,070	$35,102
India	C	2.2	$14,954	$16,070	$31,024
Italy	B	2.8	$19,032	$16,070	$35,102
Japan	A	3.6	$24,470	$16,070	$40,540
Korea	D	1.6	$10,875	$16,070	$26,946
Netherlands	C	2.2	$14,954	$16,070	$31,024
New Zealand	A	3.6	$24,470	$16,070	$40,540
Norway	A	3.6	$24,470	$16,070	$40,540
Peru	E	1	$6,797	$16,070	$22,868
Poland	D	1.6	$10,875	$16,070	$26,946
Russia	C	2.2	$14,954	$16,070	$31,024
South Africa	C	2.2	$14,954	$16,070	$31,024
Spain	C	2.2	$14,954	$16,070	$31,024
Sweden	C	2.2	$14,954	$16,070	$31,024
Ukraine	D	1.6	$10,875	$16,070	$26,946
United Kingdom	A	3.6	$24,470	$16,070	$40,540
United States	A	3.6	$24,470	$16,070	$40,540
Uruguay	D	1.6	$10,875	$16,070	$26,946
		66.2		$449,971	$899,942
Base rate	$6,797				

Appendix 3

Estimated Contribution Scale 2011/12

2011/12	Cat.	Mult.	Variable	Fixed	Total
Argentina	A	3.6	$35,198	$23,116	$58,314
Australia	A	3.6	$35,198	$23,116	$58,314
Belgium	D	1.6	$15,644	$23,116	$38,760
Brazil	D	1.6	$15,644	$23,116	$38,760
Bulgaria	E	1	$9,777	$23,116	$32,893
Chile	C	2.2	$21,510	$23,116	$44,626
China	C	2.2	$21,510	$23,116	$44,626
Ecuador	E	1	$9,777	$23,116	$32,893
Finland	D	1.6	$15,644	$23,116	$38,760
France	A	3.6	$35,198	$23,116	$58,314
Germany	B	2.8	$27,376	$23,116	$50,492
India	C	2.2	$21,510	$23,116	$44,626
Italy	B	2.8	$27,376	$23,116	$50,492
Japan	A	3.6	$35,198	$23,116	$58,314
Korea	D	1.6	$15,644	$23,116	$38,760
Netherlands	C	2.2	$21,510	$23,116	$44,626
New Zealand	A	3.6	$35,198	$23,116	$58,314
Norway	A	3.6	$35,198	$23,116	$58,314
Peru	E	1	$9,777	$23,116	$32,893
Poland	D	1.6	$15,644	$23,116	$38,760
Russia	C	2.2	$21,510	$23,116	$44,626
South Africa	C	2.2	$21,510	$23,116	$44,626
Spain	C	2.2	$21,510	$23,116	$44,626
Sweden	C	2.2	$21,510	$23,116	$44,626
Ukraine	D	1.6	$15,644	$23,116	$38,760
United Kingdom	A	3.6	$35,198	$23,116	$58,314
United States	A	3.6	$35,198	$23,116	$58,314
Uruguay	D	1.6	$15,644	$23,116	$38,760
		66.2		$647,250	**$1,294,500**
Base rate	$9,777				

Appendix 4

Salary scale 2009/10

2009/10		STEPS														
Level		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1	A	$103,408	$105,332	$107,256	$109,181	$111,105	$113,028	$114,952	$116,878							
1	B	$129,260	$131,664	$134,069	$136,476	$138,881	$141,286	$143,691	$146,097							
2	A	$87,075	$88,713	$90,351	$91,987	$93,624	$95,261	$96,897	$98,535	$100,173	$101,809	$103,446	$103,632	$105,247		
2	B	$108,844	$110,891	$112,938	$114,984	$117,030	$119,076	$121,122	$123,169	$125,216	$127,262	$129,308	$129,540	$131,559		
3	A	$72,611	$74,190	$75,770	$77,350	$78,930	$80,509	$82,089	$83,669	$85,248	$86,827	$88,407	$88,744	$90,302	$91,861	$93,418
3	B	$90,764	$92,737	$94,713	$96,688	$98,663	$100,637	$102,612	$104,587	$106,560	$108,534	$110,509	$110,930	$112,878	$114,826	$116,772
4	A	$60,209	$61,671	$63,136	$64,595	$66,060	$67,521	$68,981	$70,446	$71,910	$73,370	$74,834	$75,241	$76,684	$78,126	$79,568
4	B	$75,261	$77,089	$78,920	$80,744	$82,575	$84,402	$86,227	$88,058	$89,887	$91,712	$93,542	$94,052	$95,855	$97,658	$99,460
5	A	$49,918	$51,228	$52,536	$53,844	$55,152	$56,459	$57,768	$59,073	$60,383	$61,692	$62,997	$63,420			
5	B	$62,398	$64,035	$65,670	$67,305	$68,940	$70,574	$72,210	$73,842	$75,479	$77,115	$78,746	$79,275			
6	A	$39,517	$40,775	$42,030	$43,289	$44,545	$45,801	$47,060	$48,317	$49,572	$50,337	$50,830				
6	B	$49,396	$50,969	$52,538	$54,112	$55,681	$57,252	$58,825	$60,396	$61,965	$62,921	$63,538				

Level	STEPS														
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1	$40,964	$42,874	$44,786	$46,697	$48,689	$50,765									
2	$34,136	$35,728	$37,322	$38,914	$40,574	$42,305									
3	$28,446	$29,773	$31,101	$32,428	$33,812	$35,255									
4	$23,706	$24,812	$25,918	$27,024	$28,177	$29,379									
5	$19,583	$20,497	$21,411	$22,325	$23,279	$24,273									
6	$16,052	$16,800	$17,549	$18,299	$19,080	$19,894									

Decision 5 (2009)

Appointment of the Executive Secretary of the Antarctic Treaty Secretariat

The Representatives,

Recalling Article 3 of Measure 1 (2003) regarding the appointment of an Executive Secretary to head the Secretariat of the Antarctic Treaty;

Recalling also Articles 4 and 5 of Decision 2 (2003) regarding the procedure for the selection of the Executive Secretary;

Recalling Decision 2 (2007) on the re-appointment of Mr Johannes Huber as Executive Secretary;

Decide:

1. to appoint Mr Manfred Reinke as Executive Secretary of the Secretariat of the Antarctic Treaty for a term of four years, pursuant to the terms and conditions set forth in the letter of the Chair of the 32nd Antarctic Treaty Consultative Meeting attached to this Decision; and
2. that this appointment shall commence on 1 September 2009.

Letter of the ATCM Chair to Dr Manfred Reinke

17 April 2009

Dr Manfred Reinke
Alfred Wegener Institute

Position of Executive Secretary

Dear Dr Reinke,

As Chair of the 32nd Antarctic Treaty Consultative Meeting (ATCM) and in accordance with Decision 5 (2009), I am pleased to offer you the position of Executive Secretary of the Secretariat of the Antarctic Treaty (the Secretariat). The terms and conditions for your appointment are set out below. If you accept this offer, kindly sign your acceptance on the attached copy of this letter and return it to me.

Terms and Conditions of Appointment

(a) By your acceptance of the appointment you shall pledge yourself to discharge your duties faithfully and to conduct yourself solely with the interests of the ATCM in mind. Your acceptance of the position of Executive Secretary includes a written statement of your familiarity with and acceptance of the conditions set out in the attached Staff Regulations as well as any changes which may be made to the Staff Regulations from time to time.

(b) The duties of the Executive Secretary are to appoint, direct and supervise other staff members and to ensure that the Secretariat fulfils the functions identified in Article 2 of Measure 1 (2003), provisionally applied by Decision 2 (2003) until that Measure becomes effective.

(c) In accordance with Decision 5 (2009) your appointment shall commence on 1 September 2009.

(d) Your term of office shall be for four years and you shall be eligible for reappointment for no more than one further four-year term, subject to the agreement of the ATCM.

(e) The appointment is to the executive staff category. Your salary on commencement shall be US $129,260 (Level 1B, Step 1 according to the Salary Scale contained in Appendix 4 of the Secretariat's Programme included in Annex 3 of Decision 4 (2009). Annual increments shall be available to you up to the maximum salary attainable at the Level 1B.

(f) The above salary includes the base salary (Level 1A, Step 1) with an additional 25% for salary on-costs (retirement fund and insurance premiums, installation and repatriation grants, education allowances, etc) and is the total salary entitlement in accordance with Regulation 5.1 of the Staff Regulations. In addition, you will be entitled to travel allowances and relocation expenses in accordance with Regulation 9 of the Staff Regulations.

(g) The ATCM may terminate this appointment by prior written notice at least three months in advance in accordance with Regulation 10.3 of the Staff Regulations. You may resign at any time upon giving three months written notice or such lesser period as may be approved by the ATCM.

Yours sincerely

R. Tucker Scully

Chairman, 32nd Antarctic Treaty Consultative Meeting

To: The Chair, 32nd Antarctic Treaty Consultative Meeting

I hereby accept the appointment described in this letter subject to the conditions therein specified and state that I am familiar with and accept the conditions set out in the Staff Regulations and any changes which may be made to the Staff Regulations from time to time.

_____

Date

_____

Manfred Reinke

Letter of the ATCM Chair to the Minister of Foreign Affairs of Argentina

17 April 2009

Mr Jorge Taiana
Minister of Foreign Affairs, International Trade and Worship
Buenos Aires, Argentine Republic

Dear Mr Taiana,

I address you in my capacity as Chair of the 32nd Antarctic Treaty Consultative Meeting (ATCM) with reference to Article 21 of the Headquarters Agreement for the Secretariat of the Antarctic Treaty, attached to Measure 1 (2003), and to Decision 2 (2003), the letter of the Argentine Republic to the Chairman of ATCM XXVI of 16 June 2003 and the notification of the Argentine Republic to the Depositary Government of 19 May 2004.

In accordance with the requirements of Article 21 as provisionally applied, I hereby notify the Government of the Argentine Republic of the appointment by the 32nd ATCM of Dr Manfred Reinke to the position of Executive Secretary, effective on 1 September 2009.

I avail myself of this opportunity to express the assurances of my highest consideration.

Yours sincerely,

R. Tucker Scully

Chair of the 32nd Antarctic Treaty Consultative Meeting

Decision 6 (2009)

Revised Rules of Procedure for the Committee for Environmental Protection

The Representatives,

Recalling Decision 2 (1998), which established the Rules of Procedure for the Committee for Environmental Protection;

Desiring to update the Rules of Procedure;

Decide that the *Revised Rules of Procedure for the Committee for Environmental Protection (2009)* annexed to this Decision shall replace the *Rules of Procedure for the Committee for Environmental Protection* attached to Decision 2 (1998).

Revised Rules of Procedure for the Committee for Environmental Protection (2009)

Rule 1

Where not otherwise specified the Rules of Procedure for the Antarctic Treaty Consultative Meeting shall be applicable.

Rule 2

For the purposes of these Rules of Procedure:

(a) the expression "Protocol" means the Protocol on Environmental Protection to the Antarctic Treaty, signed in Madrid on 4 October, 1991;

(b) the expression "the Parties" means the Parties to the Protocol;

(c) the expression "Committee" means the Committee for Environmental Protection as defined in Article 11 of the Protocol;

(d) the expression "Secretariat" means the Secretariat of the Antarctic Treaty.

Part I. Representatives and Experts

Rule 3

Each Party to the Protocol is entitled to be a member of the Committee and to appoint a representative who may be accompanied by experts and advisers with suitable scientific, environmental or technical competence.

Before each meeting of the Committee each member of the Committee shall, as early as possible, notify the Host Government of that meeting of the name and designation of each representative, and before or at the beginning of the meeting, the name and designation of each expert and adviser.

Part II. Observers and Consultation

Rule 4

Observer status in the Committee shall be open to:

(a) any Contracting Party to the Antarctic Treaty which is not a Party to the Protocol;

(b) the President of the Scientific Committee on Antarctic Research, the Chairman of the Scientific Committee for the Conservation of Antarctic Marine Living

Resources and the Chairman of the Council of Managers of National Antarctic Programmes, or their nominated Representatives;

(c) subject to the specific approval of the Antarctic Treaty Consultative Meeting, other relevant scientific, environmental and technical organisations which can contribute to the work of the Committee.

Rule 5

Before each meeting of the Committee each observer shall, as early as possible, notify the Host Government of that meeting of the name and designation of its representative attending the meeting.

Rule 6

Observers may participate in the discussions, but shall not participate in the taking of decisions.

Rule 7

In carrying out its functions the Committee shall, as appropriate, consult with the Scientific Committee on Antarctic Research, the Scientific Committee for the Conservation of Antarctic Marine Living Resources, the Council of Managers of National Antarctic Programmes and other relevant scientific, environmental and technical organisations.

Rule 8

The Committee may seek the advice of experts as required on an ad hoc basis.

Part III. Meetings

Rule 9

The Committee shall meet once a year, generally and preferably in conjunction with the Antarctic Treaty Consultative Meeting and at the same location. With the agreement of the ATCM, and in order to fulfill its functions, the Committee may also meet between annual meetings.

The Committee may establish informal open-ended contact groups to examine specific issues and report back to the Committee.

Open-ended contact groups established to undertake work during intersessional periods shall operate as follows:

(a) where appropriate, the contact group coordinator shall be agreed by the Committee during its meeting and noted in its final report;

(b) where appropriate, the terms of reference for the contact group shall be agreed by the Committee and included in its final report;

(c) where appropriate, the modes of communication for the contact group, such as e-mail, the online discussion forum maintained by the Secretariat and informal meetings, shall be agreed by the Committee and included in its final report;

(d) representatives who wish to be involved in a contact group shall register their interest with the coordinator through the discussion forum, by e-mail or by other appropriate means;

(e) the coordinator shall use appropriate means to inform all group members of the composition of the contact group;

(f) all correspondence shall be made available to all members of the contact group in a timely manner; and

(g) when providing comments, members of the contact group shall state for whom they are speaking.

The Committee may also agree to establish other informal sub-groups or to consider other ways of working such as, but not limited to, workshops and video-conferences.

Rule 10

The Committee may establish, with the approval of the Antarctic Treaty Consultative Meeting, subsidiary bodies, as appropriate.

Such subsidiary bodies shall operate on the basis of the Rules of Procedure of the Committee as applicable.

Rule 11

The Rules of Procedure for the preparation of the Agenda of the Antarctic Treaty Consultative Meeting shall apply with necessary changes to Committee meetings.

Before each meeting of any subsidiary body the Secretariat, in consultation with the Chairperson of both the Committee and of the subsidiary body, shall prepare and distribute a preliminary annotated Agenda.

Part IV. Submission of Documents

Rule 12

Members of the Committee and Observers should follow the procedures for submission of documents for the Antarctic Treaty Consultative Meeting and Committee meetings as agreed by the Antarctic Treaty Consultative Meeting and promulgated by the Secretariat.

Observers referred to in Rule 4(c) may only submit documents for distribution to the meeting as Information Papers.

Part V. Advice and Recommendations

Rule 13

The Committee shall try to reach consensus on the recommendations and advice to be provided by it pursuant to the Protocol.

Where consensus cannot be achieved the Committee shall set out in its report all views advanced on the matter in question.

Part VI. Decisions

Rule 14

Where decisions are necessary, decisions on matters of substance shall be taken by a consensus of the members of the Committee participating in the meeting. Decisions on matters of procedure shall be taken by a simple majority of the members of the Committee present and voting. Each member of the Committee shall have one vote. Any question as to whether an issue is a procedural one shall be decided by consensus.

Part VII. Chairperson and Vice-chairs

Rule 15

The Committee shall elect a Chairperson and first and second Vice-chairs from among the Consultative Parties. The Chairperson and the Vice-chairs shall be elected for a period of two years and, where possible, their terms shall be staggered.

The Chairperson and the Vice-chairs shall not be re-elected to their post for more than one additional two-year term. The Chairperson and Vice-chairs shall not be representatives from the same Party.

Rule 16

Amongst other duties the Chairperson shall have the following powers and responsibilities:

(a) convene, open, preside at and close each meeting of the Committee;

(b) make rulings on points of order raised at each meeting of the Committee provided that each representative retains the right to request that any such decision be submitted to the Committee for approval;

(c) approve a provisional agenda for the meeting after consultation with Representatives;

(d) sign, on behalf of the Committee, the report of each meeting;

(e) present the report referred to in Rule 22 on each meeting of the Committee to the Antarctic Treaty Consultative Meeting;

(f) as required, initiate intersessional work; and

(g) as agreed by the Committee, represent the Committee in other forums.

Rule 17

Whenever the Chairperson is unable to act, the first Vice-chair shall assume the powers and responsibilities of the Chairperson.

Whenever both the Chair and first Vice-chair are unable to act, the second Vice-chair shall assume the powers and responsibilities of the Chairperson.

Rule 18

In the event of the office of the Chairperson falling vacant between meetings, the first Vice-chair shall exercise the powers and responsibilities of the Chairperson until a new Chairperson is elected.

If the offices of both the Chairperson and first Vice-chair fall vacant between meetings, the second Vice-chair shall exercise the powers and responsibilities of the Chairperson until a new Chairperson is elected.

Rule 19

The Chairperson and Vice-chairs shall begin to carry out their functions on the conclusion of the meeting of the Committee at which they have been elected.

Part VIII. Administrative Facilities

Rule 20

As a general rule the Committee, and any subsidiary bodies, shall make use of the administrative facilities of the Government which agrees to host its meetings.

Part IX. Languages

Rule 21

English, French, Russian and Spanish shall be the official languages of the Committee and, as applicable, the subsidiary bodies referred to in Rule 10.

Part X. Records and Reports

Rule 22

The Committee shall present a report on each of its meetings to the Antarctic Treaty Consultative Meeting. The report shall cover all matters considered at the meeting of the Committee, including at its intersessional meetings and by its subsidiary bodies as appropriate, and shall reflect the views expressed. The report shall also include a comprehensive list of the officially circulated Working and Information Papers. The report shall be presented to the Antarctic Treaty Consultative Meeting in the official languages. The report shall be circulated to the Parties, and to observers attending the meeting, and shall thereupon be made publicly available.

Part XI. Amendments

Rule 23

The Committee may adopt amendments to these Rules of Procedure, which shall be subject to approval by the Antarctic Treaty Consultative Meeting.

Decision 7 (2009)

Meeting of Experts on the management of ship-borne tourism in the Antarctic Treaty area

The Representatives,

Decide to:

1. convene a Meeting of Experts under the provisions of Recommendation IV-24 in Wellington, New Zealand, from 9 to 11 December 2009 to consider matters related to the management of ship-borne tourism in the Antarctic Treaty area.
2. request the Meeting of Experts to examine the following topics:
    - Trends in ship-borne tourism in the Antarctic Treaty area over the past 10 years, including maritime incidents and future projections.
    - Developments in the International Maritime Organisation relating to ship-borne tourism in the Antarctic Treaty area.
    - Maritime Safety in the Antarctic Treaty area:
        - Prevention of a maritime incident in the Antarctic Treaty area
            - Ship design and construction of vessels, safe vessel operation
            - Hydrography and charting
            - Port State control
        - Maritime Search and Rescue
    - Protection of the Antarctic Environment:
        - Environmental safeguards
            - Impacts of ship-borne tourism on the Southern Ocean

        - Emergency Response Action (Article 15 of the Protocol on Environmental Protection to the Antarctic Treaty)
            - Oil pollution response and environmental clean-up
    - Vessels flagged to non-Parties.
    - Cooperation between the ATCM and the International Maritime Organisation and the International Hydrographic Organisation.

3. encourage attendance at the Meeting by representatives from Consultative Parties and invite experts from Non-Consultative Parties, the Council of Managers of National Antarctic Programs (COMNAP), the International Association of Antarctica Tour Operators (IAATO), the Antarctic and Southern Ocean Coalition (ASOC), the International Maritime Organization (IMO), the World Tourism Organisation, the World Conservation Union (IUCN), the International Hydrographic Organisation (IHO), the United Nations Environmental Programme (UNEP) and Maritime Rescue Coordination Centres (MRCCs), particularly those from Parties with Search and Rescue Responsibilities in the Antarctic Treaty area.

4. in accordance with Recommendation IV-24, request New Zealand to submit a report of the Meeting of Experts to ATCM XXXIII for consideration.

Decision 8 (2009)

Letter to UNFCCC

The Representatives,

Considering the relevance of the *Washington Ministerial Declaration on the International Polar Year and Polar Science* and the *Washington Ministerial Declaration on the Fiftieth Anniversary of the Antarctic Treaty* as well as SCAR's Antarctic Climate Change and the Environment (ACCE) Review Report for the work of the United Nations Framework Convention on Climate Change,

Decide to ask the Chair of the ATCM to send the attached letter forwarding the two ministerial declarations and the ACCE Review Report to the Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC) for conveyance to the President of the Conference of the Parties to the UNFCCC.

Letter of the ATCM Chair to UNFCCC

17 April 2009

Mr Yvo de Boer, Executive Secretary
Secretariat, United Nations Framework Convention on Climate Change
P.O. Box 260124
D-53153 Bonn, Germany

Dear Mr De Boer,

The 32nd Antarctic Treaty Consultative Meeting (ATCM XXXII) concluded its two week session in Baltimore on 17 April 2009. It opened with a joint meeting at ministerial level of the Antarctic Treaty Consultative Parties and the Arctic Council in Washington, D.C.

The joint meeting, which was addressed by United States Secretary of State Hillary Rodham Clinton, Minister of Foreign Affairs of Norway Jonas Gahr Støre and other ministers attending, emphasized the essential contributions of scientific research in the polar regions to understanding the global climate system. The joint meeting adopted two ministerial declarations, one on the International Polar Year and Polar Science and a second on the Fiftieth Anniversary of the Antarctic Treaty, both of which, inter alia, highlighted the ongoing importance of such research and reaffirmed commitment to its support and promotion.

ATCM XXXII itself had before it the Review Report on Antarctic Climate Change and the Environment (ACCE) prepared by the Scientific Committee on Antarctic Research (SCAR). In light of the relevance of these documents to the work of the United Nations Framework Convention on Climate Change (UNFCCC) I have the honor to convey to you copies of the Washington Ministerial Declaration on the International Polar Year and Polar Science and the Washington Ministerial Declaration on the Fiftieth Anniversary of the Antarctic Treaty, as well SCAR's ACCE Review Report, with the request that you be so kind as to provide them to the President of the Conference of the Parties to the UNFCCC.

R. Tucker Scully
Chair, ATCM XXXII

Attachments: As Stated

3. Resolutions

Resolution 1 (2009)

Urging Parties to enhance environmental protection for the Antarctic ecosystem northward to the Antarctic Convergence

The Representatives,

Reaffirming their commitment to the protection of the Antarctic environment and dependent and associated ecosystems;

Noting that the Antarctic Treaty, per its Article VI, provides that the Treaty applies to the area south of 60º south latitude;

Noting further that the Convention on the Conservation of Antarctic Marine Living Resources, per its Article I(1), applies to the Antarctic marine living resources of the area south of 60º south latitude and to the Antarctic marine living resources of the area between that latitude and the Antarctic Convergence;

Recalling that the "Antarctic area" Special Area defined in Annex I, regulation 1.11.7, and the "Antarctic Area" Special Area defined in Annex II, regulation 13.8.1, and the "Antarctic area" Special Area defined in Annex V, regulation 5(1)(g), of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by its Protocol of 1978 (MARPOL 73/78), define this area (Antarctic Special Area) as the "sea area south of latitude 60º S" (MARPOL Special Areas);

Acknowledging the value of cooperation as among Parties and through the International Maritime Organization to prevent marine pollution;

Recommend that:

1. the Parties cooperate, consistent with the Protocol on Environmental Protection and in accordance with international law, to enhance environmental protection for the entire Antarctic marine ecosystem;

2. the Commission on the Conservation of Antarctic Marine Living Resources (CCAMLR) be asked by the Chairman of the ATCM XXXII to provide its views to the ATCM on the possibility of asking the International Maritime Organization (IMO) to amend the Antarctic Special Area to extend its boundary northward to the Antarctic Convergence; and

3. the Parties at ATCM XXXIII consider the views of CCAMLR and whether to recommend that further steps be taken within the IMO to extend northward the Antarctic Special Area to the Antarctic Convergence.

Resolution 2 (2009)

Role and place of COMNAP in the Antarctic Treaty system

The Representatives,

Noting that, in 1989, the Council of Managers of National Antarctic Programs (COMNAP) evolved from a permanent SCAR working group on Antarctic logistics as an important mechanism for cooperation of the Parties,

Further noting that Rules 2, 3 and 31 of the Rules of Procedure for meetings held pursuant to Article IX of the Antarctic Treaty provide that COMNAP attends these meetings as an observer,

Noting the adoption by COMNAP of its new Constitution at XX COMNAP Meeting (Saint Petersburg, Russia, July 2008),

Emphasizing the important contribution of COMNAP in establishing and developing effective collaboration among National Antarctic programs,

Recommend that the Parties continue to recognize the importance of COMNAP as a body supporting the Antarctic Treaty Parties and promoting close cooperation among the National Antarctic programs.

Resolution 3 (2009)

Guidelines for the designation and protection of Historic Sites and Monuments

The Representatives,

Recalling the protection afforded to historical sites and monuments by Article 8 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty,

Recalling also Measure 3 (2003), as amended by subsequent Measures, which sets out the current list of Historic Sites and Monuments,

Recognizing the unique value of all the historic and cultural remains of early exploration of the Antarctic continent,

Considering that the cultural and historic heritage of Antarctica is susceptible to loss and decay over time through natural processes and increased human pressure through the placement of logistical and scientific facilities and increased human impacts from visitors and tourists,

Recalling Resolution 5 (2001), which provides guidelines for the handling of pre-1958 historic remains,

Recalling further Resolution 8 (1995), Resolution 4 (1996) and Resolution 4 (2001),

Aware that successive Antarctic Treaty Consultative Meetings have developed guidelines to ensure that the process for designating Historic Sites and Monuments under the Antarctic Treaty fully complies with the objective of identifying, protecting and preserving the historic and cultural values of Antarctica,

Recommend that the Guidelines for the designation and protection of Historic Sites and Monuments annexed to this Resolution be used by Parties as guidance on questions related to the designation, protection and preservation of historic sites, monuments, artefacts and other historic remains in Antarctica.

Guidelines for the designation and protection of Historic Sites and Monuments

1. Parties should make every effort to preserve and protect, in accordance with the Antarctic Treaty and its Protocol, including Annex V, the Historic Sites and Monuments situated in the Antarctic Treaty area. Whenever appropriate, they should consult together on their restoration or preservation and adopt all adequate measures to protect all artefacts, buildings, monuments, archaeological and cultural remains and sites endowed with historic significance, from damage or destruction.
2. Where appropriate, Parties should arrange for each of these historic monuments or sites to be appropriately marked with a notice indicating in the English, French, Russian and Spanish languages that the monument or site is designated as an Historic Site or Monument, in accordance with the provisions of the Protocol.
3. Parties who wish to nominate a particular Historic Site and or Monument should adress in the proposal one or more of the following:
    a. a particular event of importance in the history of science or exploration of Antarctica occurred at the place;
    b. a particular association with a person who played an important role in the history of science or exploration in Antarctica;
    c. a particular association with a notable feat of endurance or achievement;
    d. representative of, or forms part of, some wide-ranging activity that has been important in the development and knowledge of Antarctica;
    e. particular technical, historical, cultural or architectural value in its materials, design or method of construction;
    f. the potential, through study, to reveal information or has the potential to educate people about significant human activities in Antarctica;
    g. symbolic or commemorative value for people of many nations.
4. The Party or Parties that nominated and/or are undertaking management of a Historic Site or Monument should keep the site or monument under review to assess whether:
    a. the site or monument still exists in whole or in part;
    b. the site or monument continues to meet the guidelines outlined in the previous paragraph;
    c. the description of the site or monument should be amended and updated when necessary;
    d. the location and if possible the limits of the site or monument are on its topographic maps, hydrographic charts and in other relevant publications.
    e. the site requires protection or management and, if so, whether it should be

also designated as, or included in an Antarctic Specially Protected Area or as an Antarctic Specially Managed Area;

f. in light of this review, the Historic Site or Monument should be de-listed.

5. During the preparations for a listing of a Historic Site or Monument, the proposing Party should ensure adequate liaison with the originator of the Historic Site or Monument and other Parties as appropriate.During the writing of a site management plan or conservation strategy, the proposing Party is encouraged to consider the adoption of further protective measures, including whenever appropriate:

   a. The development in a comprehensive manner of a conservation strategy, including the establishment when appropriate of buffer zones to guard buildings and monuments against damage;

   b. To the extent possible, seeking to achieve coherence through all the steps leading to historic commemoration such as the design of commemorative monuments, cairns or plaques, and any place-names attached to Historic Sites or areas of historical significance, including buffer zones.

   c. The requirement for environmental impact assessments of activities undertaken to erect a new historic monument or site. In the course of such assessment, the proponent should consider the most environmentally appropriate approach to achieving their objective of historic and cultural protection.

   d. The application of risk assessment in areas of intense human activity or otherwise in more remote and inaccessible areas where the vulnerable nature of historic sites and monuments may require that the protection include an area considered sufficient, compatible and adequate for preserving the historical values of the designated sites or monuments and avoid increased risk of damage arising out of human activity in Antarctica.

   e. The preparation of site guidelines, related to visitors and access by aircraft, vehicles or vessels, through visible marking, mapping and regular surveying, as well as issuing Historic Sites and Monuments Guidelines and other interpretive and educational material.

   f. The periodic undertaking of surveys or visits to the designated Historic Sites and Monuments and circulating reports thereafter on the condition of such Historic Sites and Monuments, including additional information on measures adopted to protect them from destruction or damage.

   g. The inclusion of any relevant Historic Sites and Monuments in the check-lists of Inspections undertaken under Article VII of the Antarctic Treaty and Article 14 of the Environmental Protocol.

6. Parties should observe the interim protection provided by Resolution 5 (2001) (Guidelines for handling of pre-1958 historic remains whose existence or present location is not yet known) during the three year period after the discovery of a new historic artefact or site

has been brought to their attention by any person or expedition who discovers pre-1958 historic remains, and consider afterwards the formal incorporation of the artefact/site into the protected or managed areas designated under Annex V of the Protocol. If there is uncertainty as to the age of a newly discovered artefact/site it should be treated as a pre-1958 artefact/site until its age has been definitively established.

7. To that end, Parties should notify the other Parties of the discovery, indicating what remains have been found, and where and when. The consequences of removing such remains should be duly considered. If items nonetheless were removed from Antarctica, they should be delivered to the appropriate authorities or public institutions in the home country of the discoverer, and remain available upon request for research purposes.

8. Visitors to Antarctica should be informed of the importance of protecting the historic and cultural heritage of the Antarctic continent and its surrounding islands and of all restrictions applying to artefacts, sites and monuments listed under the Antarctic Treaty system or protected under Resolution 5 (2001). This may include by developing historic site information guidelines and incorporating information about cultural heritage into a range of public education and interpretive materials to be prepared by the Parties, reminding visitors to Antarctica that they must not engage in conduct that results in interference to any scientific stations or environmental protected areas, as well as buildings, historical monuments, sites, artefacts, relics, commemorative plaques or site markers. The conservation of these features differ from the protection of biological or environmental phenomena but are equally important to the understanding of the values of Antarctica.

Resolution 4 (2009)

Site Guidelines for visitors

The Representatives,

Recalling Resolution 5 (2005), Resolution 2 (2006), Resolution 1 (2007) and Resolution 2 (2008) which adopted lists of 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 seven 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 2 (2008);
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;

3. the Secretariat post the text of Resolution 2 (2008) on its website in a way that makes clear that it is no longer current.

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);
12. Yankee Harbour (Lat. 62º 32' S; Long. 59º 47' W);

13. Brown Bluff, Tabarin Peninsula (Lat. 63º 32' S; Long. 56º 55' W); and
14. Snow Hill (Lat. 64º 22' S, Long. 56º 59' W)
15. Shingle Cove, Coronation Island (Lat. 60º 39' S, Long. 45º 34' W)
16. Devil Island, Vega Island (Lat. 63º 48' S, Long. 57º 16.7' W)
17. Whalers Bay, Deception Island, South Shetland Islands (Lat. 62º 59' S, Long. 60º 34' W)
18. Half Moon Island, South Shetland Islands (Lat. 60º 36' S, Long. 59º 55' W)

19. Baily Head, Deception Island, South Shetland Islands (Lat. 62º 58' S, Long. 60º 30' W)
20. Telefon Bay, Deception Island, South Shetland Islands (Lat. 62º 55' S, Long. 60º 40' W)
21. Cape Royds, Ross Island (Lat. 77º 33' 10.7" S, Long. 166º 10' 6.5" E)
22. Wordie House, Winter Island, Argentine Islands (Lat. 65º 15' S, Long. 64º 16' W)
23. Stonington Island, Marguerite Bay, Antarctic Peninsula (Lat. 68º 11' S, Long. 67º 00' W)
24. Horseshoe Island, Antarctic Peninsula (Lat. 67º 49' S, Long. 67º 18' W)
25. Detaille Island, Antarctic Peninsula (Lat. 66º 52' S, Long. 66º 48' W)

Resolution 5 (2009)

Protection of the southern giant petrel

The Representatives,

Recalling Resolution 4 (2006) and Resolution 2 (2007) on the Conservation of southern giant petrels, and Resolution 4 (2003) on the Conservation of albatrosses and petrels;

Recalling that the *Guidelines for CEP Consideration of Proposals for New and Revised Designations of Antarctic Specially Protected Species under Annex II to the Protocol* adopted at CEP VIII provide, *inter alia*, for assessments of the status of species at a regional or local level;

Recalling further that CEP XI supported SCAR's assessment, on the basis of information made available to a workshop held on 19–20 May 2008 to consider the status of the southern giant petrel in the Antarctic region, that the regional status of the species was considered of "Least Concern" in accordance with IUCN criteria;

Recalling also the CEP's past work to compile existing measures for protection of Antarctic populations of southern giant petrels, and to prepare a draft Action Plan for the species as an example of possible protective measures;

Noting that ACAP has assessed the global status of the southern giant petrel to be "Near Threatened" and has advised that it does not have sufficient information to determine a population trend for Antarctic breeding sites;

Recalling the Parties' earlier recognition of the sensitivity of the southern giant petrel to human disturbance, particularly at breeding sites;

Welcoming advice from ACAP on a standardised methodology for population monitoring of southern giant petrels;

Desiring to ensure that further robust data are collected to inform future assessments of the Antarctic regional and global status of the species, and are made available to relevant other organisations with complementary conservation objectives;

Desiring also to take action to minimise disturbance of southern giant petrel breeding sites in the Antarctic region;

Recommend that the Parties:

1. encourage regular population counts at Antarctic breeding locations, using standardised methodology prepared by ACAP, with priority given to those locations where the current population data are insufficient for trend analysis;
2. encourage the submission of existing and any future southern giant petrel population data to ACAP;
3. review the adequacy of existing site-specific measures, such as Management Plans or Site Guidelines, with a view to appropriately manage access and minimise disturbance to southern giant petrel breeding sites in the Antarctic Treaty area and, as required, develop and implement further measures; and
4. monitor progress on the above actions and the conservation status of the southern giant petrel at a future meeting.

Resolution 6 (2009)

Ensuring the legacy of the International Polar Year (IPY)

The Representatives,

Recalling the *Edinburgh Antarctic Declaration on the IPY 2007-2008* adopted at ATCM XXIX, which supports the objective of delivering a lasting legacy for the IPY, and promotes increasing collaboration and coordination of scientific studies within Antarctica;

Recalling Resolution 3 (2007) from ATCM XXX, New Delhi, urging national Antarctic programmes

(i) to maintain and extend long-term scientific monitoring and sustained observations of environmental change in the physical, chemical, geological and biological components of the Antarctic environment;

(ii) to contribute to a coordinated Antarctic observing system network initiated during the IPY (2007-08) in cooperation with SCAR, CCAMLR, WMO, GOOS and other appropriate international bodies; and

(iii) to support long-term monitoring and sustained observations of the Antarctic environment and the associated data management as a primary legacy of the IPY, to enable the detection, and underpin the understanding and forecasting of the impacts of environmental and climate change;

Noting that at the Forty-first Session of the Executive Council of the Intergovernmental Oceanographic Commission (Paris 2008) several IOC Member States recommended that IOC should play a major role in the Antarctic Treaty Consultative Meeting (ATCM), particularly in the development of a Southern Ocean Observing System under GOOS, and that the IOC Executive Council decided that further consideration of the legacy of the IPY would occur at the 25th Session of the IOC Assembly (Paris, 2009); and

Recalling the *Ministerial Declaration on the IPY and Polar Science* adopted at the Antarctic Treaty Arctic Council joint meeting in Washington on 6 April 2009;

Recommend that the Parties:

1. continue to focus attention on Antarctic research at the highest levels of national and international science organisations;
2. work with SCAR and COMNAP to implement Resolution 3 (2007) and maintain, extend and develop long-term scientific monitoring and scientific observations in Antarctica and the surrounding Southern Ocean;
3. develop integrated climate–ecosystem prediction capabilities for Antarctica and regional prediction capabilities for specific areas of the Antarctic;
4. identify stable long-term locations for the many networks and programmes established and strengthened during IPY;
5. provide attention and assistance to the recruitment and retention of young polar scientists within national Antarctic research programmes;
6. provide IPY data and outcomes from Antarctica as contributions to integrated climate change and environmental reviews and assessments; and
7. preserve, store and exchange reliable, accessible, long-term IPY data.

Resolution 7 (2009)

General principles of Antarctic tourism

Considering the increase in visitation to Antarctica which has taken place since the adoption of the Environmental Protocol and the potential for further expansion;

Committed to the comprehensive protection of the Antarctic environment;

Aware of the responsibilities of the Antarctic Treaty Parties to ensure that all activities undertaken in Antarctica are pre-planned to minimise any impact on the Antarctic environment;

Committed also to ensuring that all activities undertaken in Antarctica are conducted as safely as possible;

Recalling a range of previous instruments in relation to tourism and non-Governmental activities in Antarctica, including *inter alia Recommendation XVIII-1 Tourism and Non-Governmental Activities*, Measure 4 (2004) *Insurance and Contingency Planning for Tourism and Non-Governmental Activities in the Antarctic Treaty Area*, Resolution 4 (2004) *Guidelines on Contingency Planning, Insurance and Other Matters for Tourist and Other Non-Governmental Activities in the Antarctic Treaty Area*, Resolution 4 (2007) S*hip-based Tourism in the Antarctic Treaty Area* and Resolution 5 (2007) *Tourism in the Antarctic Treaty Area*;

Recognising that properly managed tourism can enhance public appreciation of the intrinsic values of Antarctica;

The Representatives, on the occasion of the 50th Anniversary of the Antarctic Treaty,

Recommend that the following general principles be used to inform and guide further work in managing Antarctic tourism activities.

General Principles:

- All tourism activities undertaken in Antarctica will be conducted in accordance with the Antarctic Treaty, its Protocol on Environmental Protection, and relevant ATCM Measures and Resolutions;
- Tourism should not be allowed to contribute to the long-term degradation of the Antarctic environment and its dependent and associated ecosystems, or the intrinsic natural wilderness and historical values of Antarctica. In the absence of adequate information about potential impacts, decisions on tourism should be based on a pragmatic and precautionary approach, that also incorporates an evaluation of risks;
- Scientific research should be accorded priority in relation to all tourism activities in Antarctica;
- Antarctic Treaty Parties should implement all existing instruments relating to tourism and non-Governmental activities in Antarctica and aim to ensure, as far as practicable, that they continue to proactively develop regulations relating to tourism activities that should provide for a consistent framework for the management of tourism;
- All operators conducting tourism activities in Antarctica should be encouraged to cooperate with each other and with the Antarctic Treaty Parties to coordinate tourism activities and share best practice on environmental and safety management issues;
- All tourism organisations should be encouraged to provide a focus on the enrichment and education of visitors about the Antarctic environment and its protection.

Resolution 8 (2009)

Mandatory shipping code for vessels operating in Antarctic waters

The Representatives,

Recalling Article 10 of Annex IV to the Protocol on Environmental Protection, which requires Parties to take into account the objectives of that Annex in the design, construction, manning and equipment of ships engaged in or supporting Antarctic operations;

Recognising that the International Maritime Organization is the competent organisation to deal with shipping regulations;

Grateful to the International Maritime Organization for their action pursuant to Decision 4 (2004), in which the Parties requested the IMO to consider draft Guidelines for ships operating in Antarctica;

Aware of the increased numbers of ships operating in the waters of the Antarctic Treaty area, in particular the recent increases in ship-borne tourism activities, and taking into account a number of incidents in Antarctic waters in recent years involving tourist vessels;

Conscious of their duty to ensure the safe and environmentally responsible conduct of vessel operations in Antarctica;

Recommend that the Chair of ATCM XXXII write to the International Maritime Organization to:

1. welcome the recent work of the Sub-Committee for Design and Equipment to develop *Guidelines for Ships Operating in Polar Waters*, and express the desire that these be adopted by IMO Assembly later this year; and
2. express the desire of the Antarctic Treaty Parties that the IMO would commence work as soon as practicable to develop mandatory requirements

for ships operating in Antarctic waters, which would include *inter alia* matters relating to vessel design, construction, manning and equipment, including survival craft and lifesaving equipment, taking particular note of the types of vessels, especially passenger vessels, operating in Antarctica.

Resolution 9 (2009)

Collection and use of Antarctic biological material

The Representatives,

Recalling Resolution 7 (2005) on Biological Prospecting in Antarctica;

Convinced of the benefits for the progress of humankind of scientific research in the Antarctic Treaty area;

Recalling also that the Antarctic Treaty at Article II provides for the freedom of scientific investigation in Antarctica, and at Article III(1)(c) provides that to the greatest extent feasible and practicable, scientific observations and results from Antarctica shall be exchanged and made freely available;

Recalling further that the Protocol on Environmental Protection to the Antarctic Treaty provides for the regulation of scientific activities relating to the collection of biological material, consistent with the overarching principles of Article 3, and the means to promote these principles including the environmental impact assessment process of Annex I, the provisions for the conservation of Antarctic fauna and flora set out in Annex II and the area protection and management arrangements of Annex V;

Noting the role of the Convention on the Conservation of Antarctic Marine Living Resources in the conservation, including rational use, of marine living resources south of the Antarctic Convergence, in particular the capacity to regulate harvesting of marine living resources;

Recommend that their Governments:

1. reaffirm that the Antarctic Treaty System is the appropriate framework for managing the collection of biological material in the Antarctic Treaty area and for considering its use;

2. emphasize that existing Antarctic Treaty system arrangements under the Protocol on Environmental Protection and the Convention on the Conservation of Antarctic Marine Living Resources address the environmental aspects of scientific research and the collection of biological material in the Antarctic region; and

3. keep matters raised under Antarctic Treaty Consultative Meeting Agenda Item 17 *Biological Prospecting in Antarctica* under active consideration within the Antarctic Treaty system, including in relation to obligations under Article III(1)(c) of the Treaty.

VOLUME 2

PART II

Measures, Decisions and Resolutions (Cont.)

4. Management Plans

Management Plan for

Historic Site and Monument No. 77 and

Antarctic Specially Managed Area No. 3

CAPE DENISON, COMMONWEALTH BAY, GEORGE V LAND, EAST ANTARCTICA

Latitude 67° 00’ 13” S — 67° 00’ 50” S, Longitude 142° 40’ 00.1” E — 142° 41’ 27” E

Introduction

Cape Denison, Commonwealth Bay is one of the principal sites of early human activity in Antarctica. It is the location of the base of the Australasian Antarctic Expedition of 1911-14 organised and led by Dr (later Sir) Douglas Mawson. An important symbol of the ‘heroic age’ of Antarctic exploration (1895-1917), it is one of only six hut sites remaining from this period. Cape Denison hosted some of the earliest comprehensive studies of Antarctic geology, geography, terrestrial magnetism, astronomy, meteorology, glaciology, oceanography, biology, zoology and botany. It was also the base of numerous explorations inland and features artefacts associated with these sledging parties, including food caches and equipment.

Due to its considerable historical, cultural and scientific significance, Cape Denison is designated under Measure 1 (2004) as Antarctic Specially Managed Area (ASMA) No. 3, consistent with Articles 2, 4, 5 and 6 of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty. It is also listed under Measure 3 (2004) as Historic Site and Monument No. 77, in accordance with Article 8(2) of Annex V of the Protocol.

Cape Denison is characterised by four valleys aligned northwest/southeast. The majority of Australasian Antarctic Expedition artefacts, including buildings (‘Mawson’s Huts’) and other structures, are concentrated in the westernmost valley and on the ridges on either side of the valley. The four Australasian Antarctic Expedition historic huts and their immediate surrounds are designated under Measure 2 (2004) as Antarctic Specially Protected Area (ASPA) No. 162 Mawson’s Huts.

1 Description of Values to be Protected

1.1 Primary values

The ASMA is established because Cape Denison is a site of historic, archaeological, social and aesthetic values.

Historic value

Antarctica’s ‘heroic age’ was a period of great human adventure and discovery. Cape Denison, Commonwealth Bay provides the setting for the buildings, structures and relics of the Main Base of the Australasian Antarctic Expedition (AAE) of 1911–14, led by Dr Douglas Mawson.

Mawson’s prime focus was scientific research. Nevertheless, the expedition also had an exploratory agenda, with the aim of charting the entire Antarctic coastline immediately south of Australia. For this purpose at least five sledging expeditions were undertaken from Cape Denison from spring 1912, including the infamous Far-Eastern Sledging Party during which expeditioners Belgrave, Ninnis and Xavier Mertz perished, and Mawson himself barely survived. Overall, more than 6,500 km of coastline and hinterland was explored by sledging parties of the Expedition.

Cape Denison contains numerous relics relating to the work of Mawson’s expedition, including Mawson’s Huts and other significant and relatively untouched artefacts from the ‘heroic age’. While the majority is concentrated in the westernmost valley and its immediate surrounds, the historical boundaries of the Main

Base extend further. Artefacts and other evidence of occupation, such as food caches, extend across the entire Cape, forming a rich resource of material available for research and interpretation, and potentially yielding scientific data and information about aspects of expeditioner life not included in official written accounts.

Aesthetic values

The ASMA is designated to preserve not only the artefacts remaining in situ but also the cultural landscape of Cape Denison in which Mawson and his men lived and worked. Cape Denison is characterised by its almost incessant blizzard conditions, which severely limit access to the region and activities at the site. Katabatic winds pour down the plateau and funnel through the Cape's valleys, blasting the hut with gusts that in May 1912 reached 322 km/h. (The average wind speed for the month was 98 km/h). Cape Denison is not only the windiest place in Antarctica, but also the windiest place on Earth at sea level. The site thus demonstrates the physical and symbolic context of the extreme isolation and harsh conditions endured by the expedition members and, by association, all other 'heroic age' researchers and explorers. In designating the entire area as an ASMA, Cape Denison's unique 'sense of place' is protected, with Mawson's Huts and Boat Harbour as the focus of the visual catchment. Mawson's Huts themselves are provided with additional protection in ASPA No. 162.

Educational values

Cape Denison's wildlife and undisturbed artefacts, framed against the dramatic backdrop of the Antarctic Plateau, represent significant educational values. The Area's isolation and extreme weather provide visitors with a unique insight into the conditions endured by 'heroic age' researchers and explorers, and a chance to form a deeper appreciation of their achievements.

Environmental values

The paucity of relatively ice-free areas in the immediate region means that Cape Denison represents an important assemblage of life forms (Appendices A and C). The closest ice-free areas of similar or greater size to Cape Denison are approximately 20 km to the east of Cape Denison (from the centre of the ASMA), and approximately 60 km to the west. A haul-out site for Weddell, leopard and elephant seals, the Cape is also an important breeding area for Adélie penguins, Wilson's storm-petrels, snow petrels and south polar skuas.

Flora at Cape Denison is represented by 13 lichen species distributed on boulders and other moraines throughout the peninsula. These species are listed at Appendix A to the management plan for ASPA 162. No bryophytes are evident. The lichens' distribution on rocks, which are subject to different patterns of snow ablation, makes them vulnerable to trampling and other interference by visitors, however infrequent visitation may be.

Cape Denison has 13 small lakes. These are associated with glacial action, are a permanent feature, and are frozen over for most of the year. Since such lakes are also susceptible to physical, chemical and biological modification within their catchment boundaries, a catchment-based approach to the management of human activities is required.

Scientific values

Mawson, a geologist, planned his expedition in order to examine the theories about continental connection and the processes of glaciation and climate. He also sought to study the South Magnetic Pole and magnetic charting for navigational purposes; to conduct biological studies, including the identification of new species; and to establish a weather station.

Cape Denison provides opportunities to repeat Mawson's experiments and conduct further research into magnetism, meteorology, biology, and other sciences. For example, although Antarctic lakes are generally recognised as valuable due to their relatively simple natural ecosystems, the lakes at Cape Denison have neither been sampled nor their biota studied. There are also numerous non-marine algae present; however, no surveys have been undertaken. The records from Mawson's expedition provide a dataset against which the results of modern research may be compared, and the site's isolation lends it considerable value for future use as a reference site for other areas that experience a greater level of human activities.

2. Aims and Objectives

Management of the Area aims to assist in planning and co-ordinating current and future activities in the Area, to avoid possible conflicts, and to improve co-operation between Parties in order to avoid degradation of, or substantial risk to, the values of the Area. Management objectives are:

- to prevent degradation of the Area, its features, artefacts, and values;
- to maintain the heritage values of the Area through planned conservation[1] and archaeological work programs; and
- to provide for management activities which support the protection of the values and features of the Area.

3. Management Activities

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

- research and other activities essential or desirable for understanding, protecting and maintaining the values of the Area;
- the removal of objects not related to the AAE of 1911–14 and/or the British Australian New Zealand Antarctic Research Expeditions (BANZARE) of 1929–31 and that compromise the historic and aesthetic values of the Area, provided that removal does not adversely impact on the values of the Area, and that the objects are appropriately documented prior to removal. Priority should be given to the removal of field infrastructure from the Visual Protection Zone, giving consideration to the needs (including those of safety) of conservation workers and the program of conservation works;
- essential maintenance of other objects and infrastructure, including the Automatic Weather Station;
- installation of signage to indicate the boundaries of the HSM and ASMA;
- visitation of the Area as necessary to assess whether it continues to serve the purposes for which it was designated and to ensure that management activities are adequate; and
- consultation with other national Antarctic programs operating in the region, or those with an interest or experience in Antarctic historic site management, with a view to ensuring the above provisions are implemented effectively.

4. Period of designation

The ASMA is designated for an indefinite period.

5. Description of the Area

5.1 Geographical coordinates, boundary markers and natural features

Cape Denison (67° 00’ 13” S—67° 00’ 0.50” S; 142° 39’ 02” E—142° 41’ 28” E) is located in the centre of Commonwealth Bay, a 60 km-wide stretch of coast in George V Land some 3,000 km south of Hobart, Australia. The Cape itself is a rugged, 1.5 km-wide tongue of ice, snow, rock and moraine projecting into Commonwealth Bay from the steeply rising wall of the ice cap of continental Antarctica. On the western side of the Cape is Boat Harbour, a 400m-long indentation in the coast.

The designated ASMA (Map A) extends from Land’s End (67° 00’ 46” S, 142° 39’ 24” E) in the west, along the coastline to the northern tip of the western shore of Boat Harbour (67° 00’ 24” S, 142° 39’ 28” E), across the mouth of Boat Harbour (in a straight north-easterly diagonal) to the northern tip of Penguin Knob (67° 00’ 17” S, 142° 39’ 31” E) on the eastern shore of Boat Harbour, and then along the coastline in a south-easterly direction down to John O’Groats (67° 00’ 47” S, 142° 41’ 27” E). The southern boundary extends in a straight line from Land’s End to John O’Groats along latitude 67° 00’ 47” S. With the exception of the

[1] In the context of this Management Plan the term *conservation* “means all the processes of looking after a place so as to retain its cultural significance”, as defined in Article 1.4 , of *The Burra Charter: The Australian ICOMOS Burra Charter, 1999*.

boundary across the mouth of Boat Harbour, the northern coastal boundary extends to that land above the lowest tide.

The shoreline and the ice cliffs at both ends of the Cape (Land's End and John O'Groats) form a clearly defined boundary; as such, no boundary markers have been installed because the coast is a clearly defined boundary.

Natural features: Topography and geomorphology

The topography of Cape Denison is defined by a series of four rocky ridges, running south- southeast to north-northwest, and three valleys. The largest, most westerly of these valleys contains the AAE buildings, which are protected within ASPA No. 162. The basement rock of the Cape Denison area consists of partially migmatised, massive felsic orthogneiss intruded about 2350 million years ago (Ma) into an older metamorphosed sequence. Above the basement the area features a lower zone of relatively polished rock and a higher zone of relatively unpolished rock; the former being especially prominent below 12 metres above sea level and indicative of more recent uplift and exposure than the upper zone. An upper and lower moraine are apparent, with the upper moraine, closer to the edge of plateau, containing a diversity of angular boulders. The lower moraine is dominated by local rocks sorted into bands, perhaps the result of an 'ice push' from the sea rather than being genuine glacial moraine.

Water bodies

Cape Denison contains 13 small glacial lakes, which are generally oriented parallel to the foliation of the basement rocks. At the height of summer Cape Denison also features numerous melt streams which flow into Commonwealth Bay. It is not known whether the streams flow down established courses, or whether the streams are a feature of the regular freeze/thaw cycle.

Biological features

Cape Denison is the summer habitat for breeding Adélie penguins, Wilson's storm-petrels, snow petrels and the south polar skua (Map C). Other species sighted in the area include the Cape petrel, Antarctic petrel, southern giant petrel and emperor penguin. A full list of species and number of breeding pairs (where available) is attached as Appendix A. Weddell seals, southern elephant seals and leopard seals have been recorded as hauling out and, in the case of elephant seals, moulting at Cape Denison. However, the sporadic nature of visits to the Area means that monitoring has been inconsistent and the exact extent of the seal population uncertain. Some data is presented in Appendix B(ii).

The only flora evident at Cape Denison is lichens, for which a list of species is included at Appendix A to the management plan for ASPA 162, and non-marine algae, which have yet to be studied.

5.2 Access to the Area

Sea, land and air access to Cape Denison is difficult due to the rugged topography and climate of the area. Sea ice extent and uncharted bathymetry may constrain ship access to approximately 3nm from the coastline. Access can be gained either by small watercraft or by helicopter, although attempts to land are frequently hampered by heavy seas and prevailing north-westerly or katabatic winds. Boat landings can be made at Boat Harbour and due north of Sørensen Hut. The helicopter landing site and approach and departure flight paths are indicated on Map C.

There are no roads or other transport infrastructure on shore. Land vehicles should only be used in accordance with the Code of Conduct (see Section 8).

Pedestrian access within the Area is unrestricted except in places where AAE buildings, artefacts, or bird or lichen colonies are present, and should be conducted in accordance with the Code of Conduct (see Section 8).

5.3 Location of structures and other anthropogenic objects within and near to the Area

Cape Denison is notable for being the location of four historic buildings and a Memorial Cross constructed by the AAE of 1911-1914. The buildings and their immediate environs are protected by ASPA 162.

Within the ASMA there are several AAE structures, including survey markers and the mast on top of Anemometer Hill, about 150 m east of Mawson's Main Hut. On 5 January 1931 members of the BANZARE party (including Douglas Mawson) visited Cape Denison to claim formal possession of George V Land on behalf of Great Britain, and used the mast to support the proclamation flag and canister containing the proclamation itself. A small timber plaque and proclamation, still attached to the mast, are the only 'formal' artefacts of that visit remaining in situ today.

Cape Denison additionally features six other structures: an automatic weather station (AWS); a field shelter known as Sørensen Hut; a red fibreglass 'Apple' hut; a wooden platform on which tents may be pitched; a field shelter known as Granholm Hut, and a plaque near Mawson's Main Hut indicating that the hut is a Historic Monument.

The AWS is located at 67° 00' 33" S; 142° 39' 51" E on a rise near Round Lake and approximately 150 m southeast of Mawson's Main Hut. It has been operating since 1990 as part of the Antarctic Automatic Weather Project of the University of Wisconsin—Madison, and is the property of that institution.

Sørensen Hut is located about 400m east of Mawson's Main Hut at 67° 00' 29" S; 142° 40' 12" E. It was constructed by the Australian Antarctic program in 1986 to provide temporary shelter for parties conducting conservation works on Mawson's Huts and contains some provisions and field equipment. Numerous items are also stored underneath and immediately adjacent to Sørensen Hut, and in the adjacent Apple hut.

Granholm Hut is situated at 67° 00' 29" S; 142° 39' 26" E, some 160 m northwest of Mawson's Main Hut. It was constructed in 1978 to provide a temporary shelter and workshop for parties working on Mawson's Huts. It contains numerous building materials, some field equipment and limited provisions.

The signage will be in the English, French, Spanish and Russian languages, and will indicate the protection status of the site and its contents under the Antarctic Treaty.

Objects left by Mawson's expedition are scattered throughout the Area, and appear from year to year depending on snow cover. These include cairns; cached seal and penguin carcasses; timbers; and a large collection of disassembled penguin skeletons. It is believed that a significant number of artefacts exist under the snow and have yet to be uncovered. It is additionally possible that artefacts from the ice cave known as 'Aladdin's Cave', sledging depot excavated by Mawson's expedition in 1912, may also be present in the vicinity of the ASMA, if not within the ASMA itself. The cave was originally located on the plateau at 67° 05' S, 142° 38' E, some 8 km south of Mawson's Main Hut, but it may have been relocated (via the movement of ice) up to 4.5 km down-slope from the original 1912 location. Its exact location has yet to be determined.

5.4 Location of other protected areas in or near to the Area

ASPA No. 162 , encompassing the four AAE huts, is located within the Cape Denison ASMA, and exists to protect their historic and social values.

The Cape Denison ASMA is to be simultaneously listed as Historic Site and Monument No. 77 under the Antarctic Treaty.

There are no other ASPAs or ASMAs within 50 km of Cape Denison.

6. Zones within the Area

All activities within the Area are to comply with the provisions of the Protocol on Environmental Protection to the Antarctic Treaty, the Code of Conduct contained in this management plan (see Section 8), and any other applicable instruments adopted by the Antarctic Treaty Consultative Meeting. In addition to these general guidelines, three zones are defined in which restrictions on certain activities are deemed necessary in order to meet the management objectives for the Area.

6.1 ASPA 162

ASPA 162 (Mawson's Huts) is located within the ASMA. This ASPA encompasses the four Australasian Antarctic Expedition huts in order to protect their historic and social values. Entry to the ASPA and activities within it require a permit and must be carried out in accordance with the ASPA Management Plan.

6.2 Visual Protection Zone

The visual catchment of Mawson's Huts and the Memorial Cross is of particular importance within the Cape Denison cultural landscape. In order to protect the landscape setting and 'sense of place' of Mawson's Huts, a Visual Protection Zone is defined within the ASMA. To preserve these values, no new structures should be built within the Visual Protection Zone. The Visual Protection Zone is illustrated on Maps A and B and is generally defined as the area enclosed by the western and eastern ridge lines of the valley containing the historic structures. The boundary extends from the coastline (67° 00' 24.9" S, 142° 39' 14.3" E) and runs southeast along the western side of the westernmost ridge to the ice plateau (67° 00' 46.8" S, 142° 39' 37.2" E); northeast along the edge of the ice plateau to 67° 00' 43.9" S, 142° 40' 5.6" E; north- northwest between Round Lake and Long Lake to 67° 00' 33.7" S, 142° 39' 59.8" E; then as far as Magnetograph House (67° 00' 20.3" S, 142° 39' 46.6" E); and then northwest along the eastern side of the eastern ridge line to the sea (67° 00' 15.7" S, 142° 39' 28.2" E).

6.3 Helicopter Zone

Helicopter operations have the potential to disturb breeding and moulting wildlife. To minimise disturbance to seals and nesting birds at Cape Denison during the summer months, helicopters should only land at the site indicated on Map C and approach and depart in accordance with the flight paths indicated on the map. Departure paths have been selected to avoid wildlife concentrations as much as possible. Use of a single-engined helicopter is preferable; however twin-engined helicopters may be used with due regard for the potentially greater disturbance to wildlife. The presence of seals and the breeding cycle of birds nesting in the Area are charted at Appendices B(i) and B(ii); twin-engine helicopter operations should be avoided during weeks that birds are hatching eggs or raising chicks (late October to early March).

7. Maps of the Area

Map A: Cape Denison Management Zones.

This map shows the boundaries of the ASMA, the Historic Site, the Visual Protection Zone, ASPA No. 162, and significant topographic features of the Area. The inset map indicates the location in relation to the Antarctic continent.

Map B: Cape Denison Visual Protection Zone

This map shows the boundaries of the Visual Protection Zone and indicates the position of significant historic artefacts, including the four Australasian Antarctic Expedition huts, the Memorial Cross, and Anemometer Hill, and the site of the BANZARE Proclamation Pole.

Map C: Cape Denison Flight Paths and Bird Colonies.

This map indicates the approaches, departures and landing site for helicopters, as well as the location of bird colonies in the vicinity.

Specification for all maps

Projection: UTM Zone 54

Horizontal Datum: WGS84

8. Code of Conduct

The actions of individuals contribute significantly to protecting the Antarctic environment. This Code of Conduct is intended to provide general guidelines to help minimise environmental impacts at Cape Denison, but it cannot be expected to cover every situation. All visitors, including national program personnel and tourists, should consider their responsibilities and seek to minimise their impact on all aspects of the environment and most particularly the values described.

8.1 Access to and movement within or over the Area

All land vehicles are prohibited within the Area, with the exception of small all-terrain vehicles which, due to the colonisation of rocky areas by lichens and seabirds, should be used on snow and ice surfaces only and

with due consideration of the location of historic artefacts. Pedestrian access within the Area is unrestricted but artefact-rich areas (such as the scatter immediately to the north of the Main Hut), bird or lichen colonies, and penguin 'highways' (the established route of birds moving between their nest and the sea) should be avoided.

8.2 Activities which are or may be conducted within the Area

- Historic conservation and archaeological work.
- Research, including scientific research.
- Visitation for the purposes of education or recreation, including tourism.
- Essential maintenance of non-historic infrastructure, including the Automatic Weather Station, and removal of non-historic objects that compromise the historic and aesthetic values of the Area. These activities should be conducted by authorised personnel only.

8.3 The installation, modification, or removal of structures

To preserve the historic, archaeological, social, aesthetic and environmental values of the ASMA, no new structures should be constructed, nor additional scientific equipment installed in the Area, except for the conservation, research or maintenance activities specified in Section 3 above.

All equipment and infrastructure left in the Area should be periodically reviewed for maintenance and potential removal.

8.4 The location of field camps

Existing non-historic infrastructure should be used by Parties undertaking activities in accordance with this management plan, in preference to establishing new infrastructure.

Tents should be pitched on the wooden platform adjacent to Sørensen Hut. Use of the huts and any supplies should be reported to the Australian Antarctic program as soon as practicable to ensure the safety of other people who may be reliant upon known stores.

8.5 The taking of or harmful interference with native flora and fauna

Approach distances to wildlife should be consistent with those agreed within the Committee for Environmental Protection. Until guidelines are adopted by the Committee, Table 1 below provides guidance.

Visitors should not wash, swim or dive in the lakes. These activities could contaminate the water body and disturb the water column, microbial communities, and sediments.

Table 1: Minimum distances to maintain when approaching wildlife on foot

Species	**Phase of life**	**On foot (m)**
Snow petrels	Nesting	15
Wilson's storm-petrels	Nesting	15
South polar skuas	Nesting	15
Adélie penguins	Summer: on ice or away from colony	5
	Summer: breeding birds in colonies	15
Breeding Weddell seals and pups (includes weaners)	All times	15
Mature seals on their own (all species)	All times	5

8.6 The collection or removal of anything not brought into the Area by the visitor

Cape Denison is listed as a Historic Site under the Antarctic Treaty. In accordance with Annex V, Article 8 (4) of the Protocol, no historic structure or other artefact at Cape Denison should be damaged, destroyed or removed, unless removal of an artefact is essential for conservation purposes. Any artefacts may only be

removed by authorised and appropriately trained personnel. The repatriation of the artefact to the location at Cape Denison from which it was removed is generally preferable unless further damage or deterioration may result from repatriation.

If an artefact is to be removed, the Australian Antarctic program should be informed so that documentation regarding that program's archaeological research at Cape Denison may be amended accordingly.

8.7 The disposal of waste

All wastes, including human wastes, should be removed from the Area .

Refuelling of vehicles, generators and other essential equipment should be conducted with due care for the surrounding environment. Refuelling activities should not be conducted in the catchment areas of lakes or melt streams, at the ice edge, or in other sensitive areas.

8.8 Reports to be made to the appropriate authority regarding visits to the Area

To enhance cooperation and the coordination of activities in the Area, to allow for effective site monitoring and management, to facilitate the consideration of cumulative impacts, and to fulfil the aims and objectives of this Management Plan:

National program personnel, tourists and other non-government personnel proposing to visit, land, and/or conduct activities in the Area should inform the Australian Antarctic program of their intentions as far in advance of a visit as is practicable.

The details of all field activities should be accurately recorded for transfer to the management database of the Australian Antarctic program. See Section 9 below.

9. Information exchange

Parties with active programs in the Area and non-government operators should exchange information obtained during visits to the Area that may have a bearing on the operation of this Management Plan. For example, the expedition or tour leader should submit to the appropriate authority a report describing the activities undertaken in the Area. Such reports should include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of Resolution 2 (1998). Parties should maintain a record of such activities including 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 this information in a publicly accessible archive to maintain a record of visitation or usage of the site, to be used both in any review of this Management Plan and to assist in organising the use of the Area.

10. Supporting Documentation

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Appendix A

Fauna recorded at Cape Denison, Commonwealth Bay: Breeding populations (pairs) of seabirds at Cape Denison

Species	No. pairs, December 2002
Adélie penguin *Pygoscelis adeliae*	18,737
Wilson's storm-petrel *Oceanites oceanicus*	38
Snow petrel *Pagodroma nivea*	30
South polar skua *Catharacta maccormicki*	8

? Antarctic prion *Pachyptila desolata* (indeterminate breeding status)
? Cape petrel *Daption capense* (indeterminate breeding status)

Other seabirds sighted at Cape Denison

Species
Antarctic petrel *Thalassoica antarctica*
Southern giant petrel *Macronectes giganteus*
Sing penguin *Aptenodytes patagonica*
Royal penguin (carcase) *Eudyptes schlegeli*
Chinstrap penguin *Pygoscelis Antarctica*
Emperor penguin *Aptenodytes forsteri*

Seals recorded at Cape Denison Species

Weddell seal *Leptonychotes weddellii*
Leopard seal *Hydrurga leptonyx*
Southern elephant seal *Mirounga leonina*

Appendix B(i)

Helicopter operations: Breeding cycles of nesting seabirds at Cape Denison, Commonwealth Bay

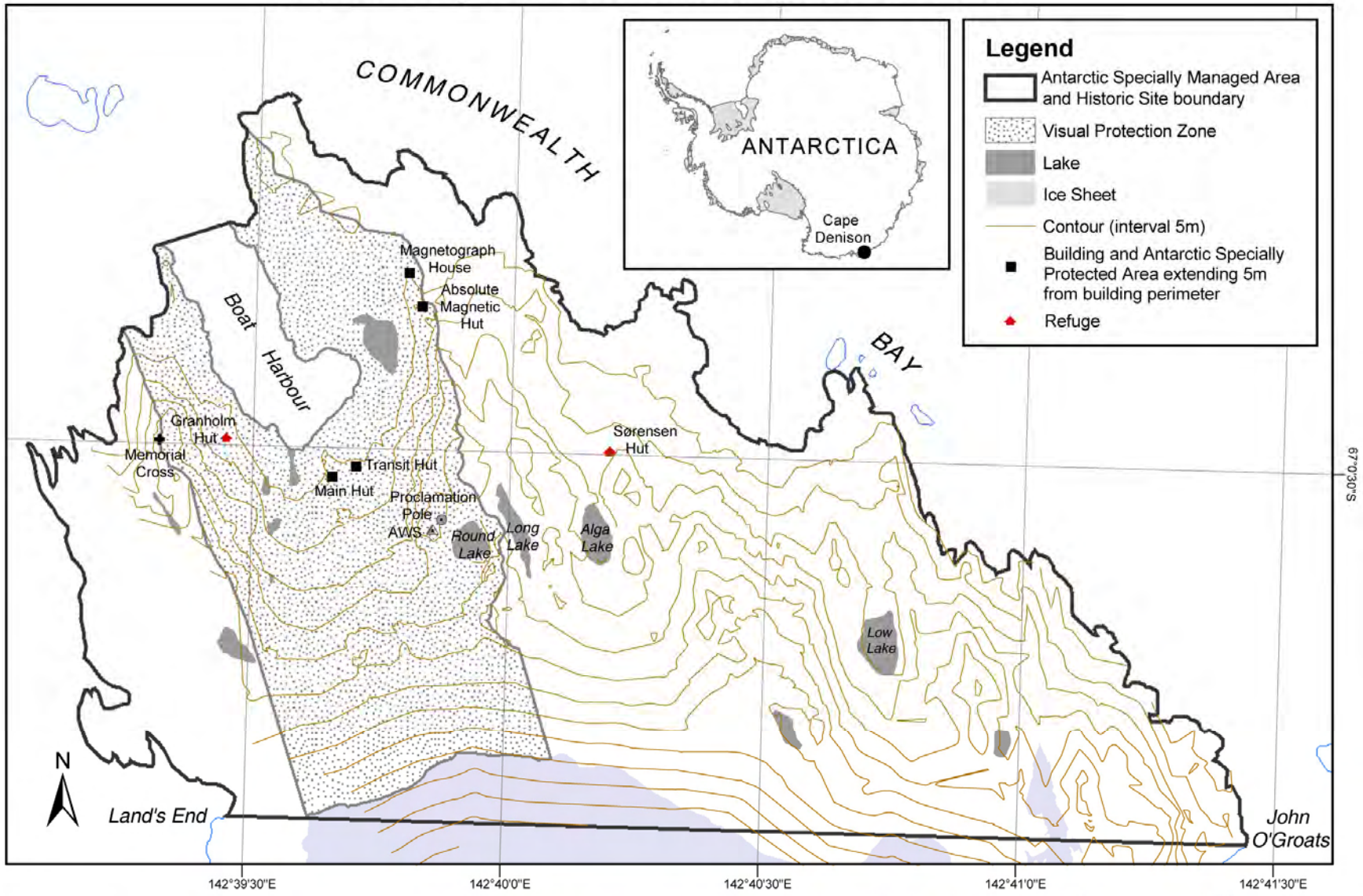
Species breeding at Cape Denison	**Number**	**Summer breeding cycle**
Wilson's storm-petrel (Oceanites oceanicus)	Approximately 38 pairs; three small colonies	Before mid-December: adults; after mid- December: adults, eggs and chicks
Snow petrel (Pagodroma nivea)	Approximately30; one small colony	Before late November: adults; after late November: adults, eggs and chicks
Adélie penguin (Pygoscelis adeliae)	Approximately 18,800 pairs, numerous colonies	Before November: adults; after November: adults, eggs and chicks
South polar skua (Catharacta maccormicki)	Approximately 8 pairs, scattered nests on fringes of penguin colonies	Before mid-December: adults; after mid- adults and chicks

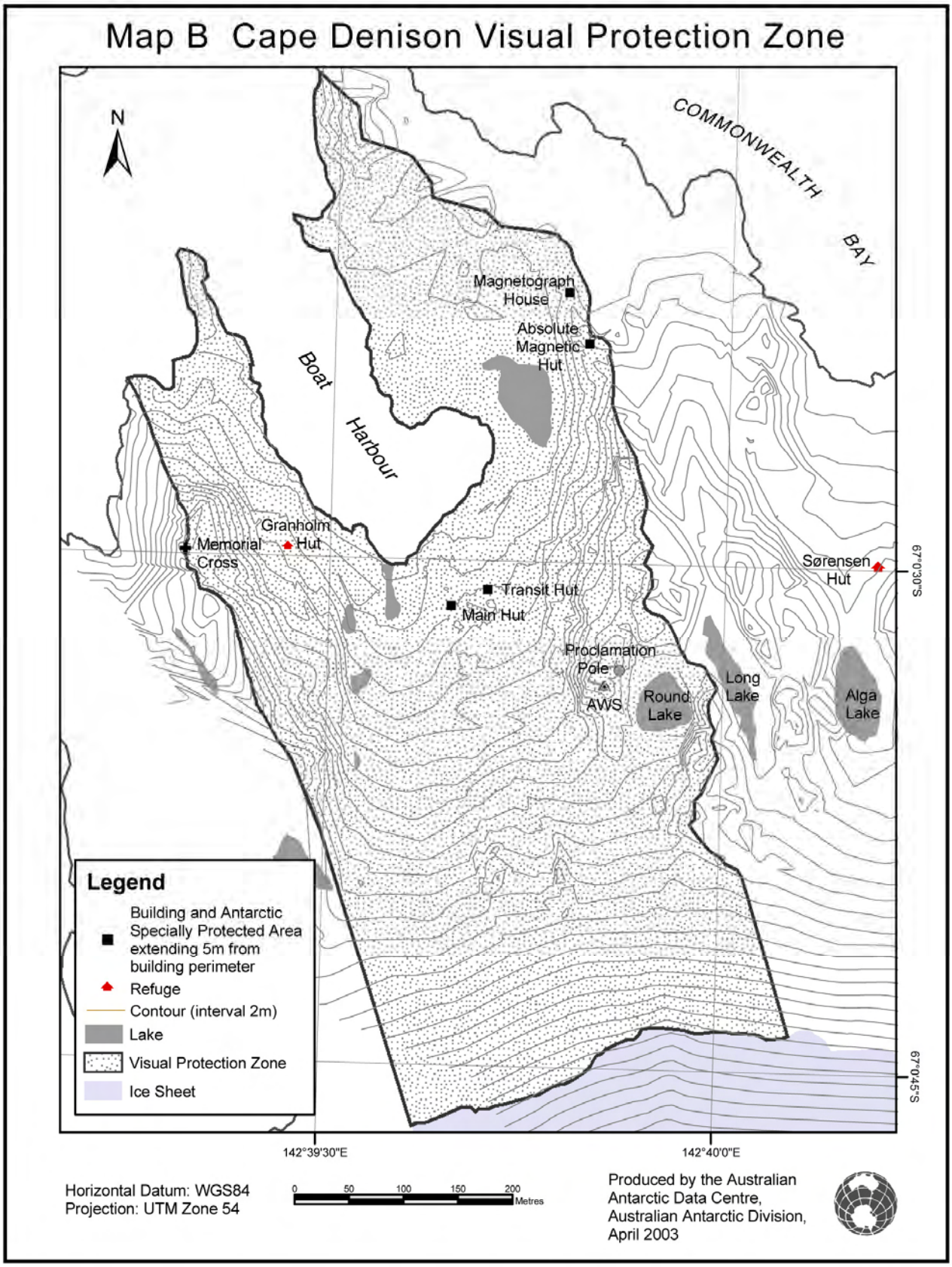
Appendix B(ii)

Helicopter operations: Seals at Cape Denison, Commonwealth Bay

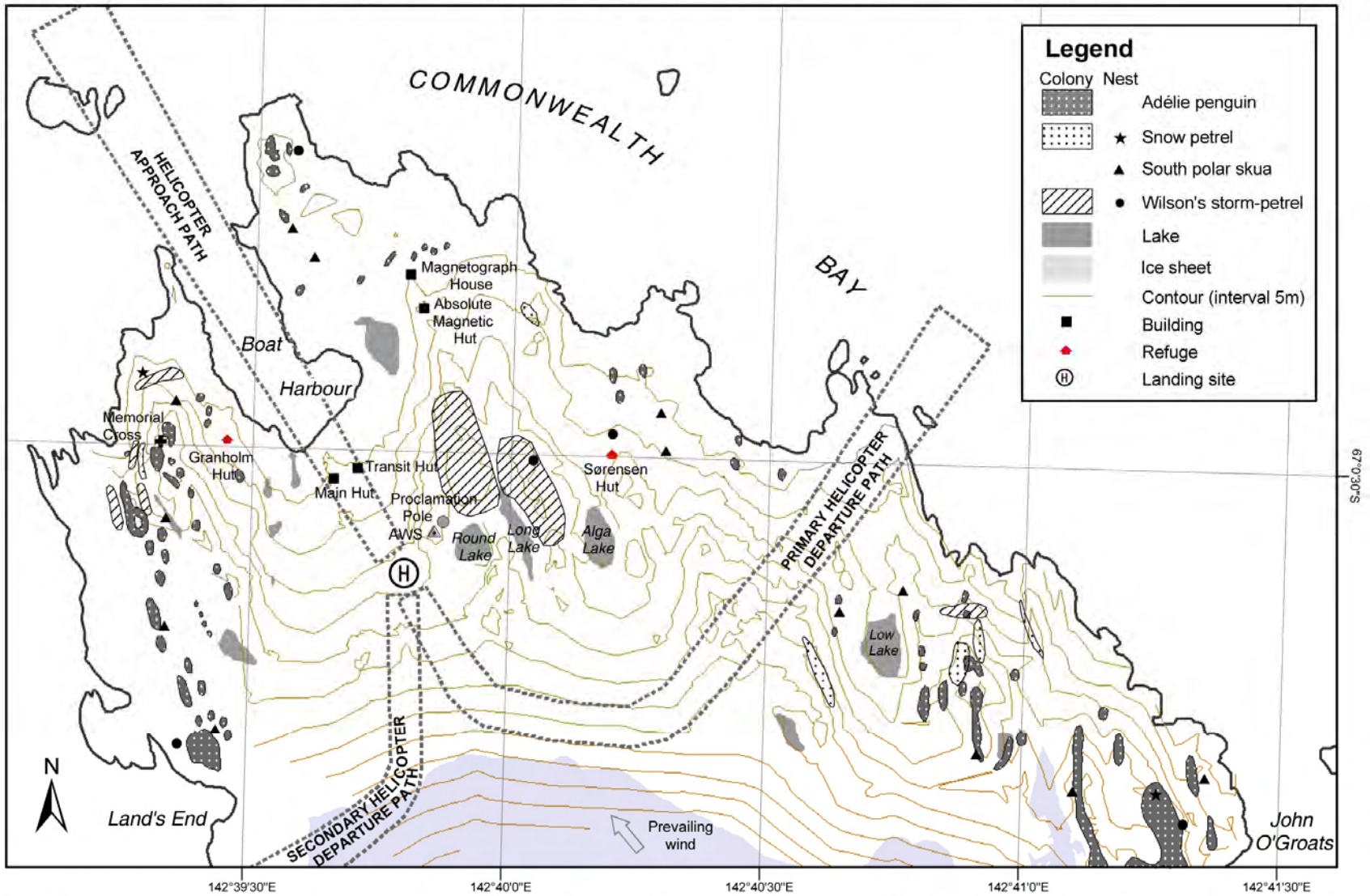
Species	**Number**	**Summer breeding cycle**
Weddell seal (Leptonychotes weddellii)	Exact number not known, no established colonies	Before November: no seals; between mid-November to end December, approx. 24 adults per day
Southern elephant seal(Mirounga leonina)	Exact number not known, no established colonies	Approx. 2 or adults per day in December

Map A Cape Denison Management Zones




Map B Cape Denison Visual Protection Zone
N
COMMONWEALTH BAY
Boat Harbour
Magnetograph House
Absolute Magnetic Hut
Granholm Hut
Memorial Cross
Transit Hut
Main Hut
Proclamation Pole
AWS
Round Lake
Long Lake
Alga Lake
Sørensen Hut
67°30'S
67°45'S
142°39'30"E
142°40'0"E
Legend
Building and Antarctic Specially Protected Area extending 5m from building perimeter
Refuge
Contour (interval 2m)
Lake
Visual Protection Zone
Ice Sheet
Horizontal Datum: WGS84
Projection: UTM Zone 54
0 50 100 150 200 Metres
Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, April 2003

Map C Cape Denison Flight Paths and Bird Colonies



Horizontal Datum: WGS84
Projection: UTM Zone 54

Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, April 2003

Management Plan for

Antarctic Specially Managed Area No. 7

SOUTHWEST ANVERS ISLAND AND PALMER BASIN

Introduction

The region that includes southwest Anvers Island and the Palmer Basin and its fringing island groups has a wide range of important natural, scientific and educational values and is an area of considerable and increasing scientific, tourist and logistic activities. The importance of these values and the need to provide an effective means to manage the range of activities was recognised with adoption of the area as a Multiple-Use Planning Area for voluntary observance at the XVIth Antarctic Treaty Consultative Meeting (1991). With the acquisition of new data and information and changes to logistics and the pressures arising from human activities in the region, the original plan has been comprehensively revised and updated to meet current needs as an Antarctic Specially Managed Area (ASMA).

In particular, scientific research being undertaken within the Area is important for considering ecosystem interactions and long-term environmental changes in the region, and how these relate to Antarctica and the global environment more generally. This research is important to the work of the Committee for Environmental Protection, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Antarctic Treaty System as a whole. There is a risk that these globally important research programs and long-term datasets could be compromised if activities were to occur in the marine area that were not appropriately managed to avoid potential conflicts and possible interference. While marine harvesting activities are not currently being conducted within the Area, and the marine component of the Area represents only 0.5% of CCAMLR Subarea 48.1, it is important that should harvesting be undertaken within the Area then it should be carried out in such a way that it would not impact on the important scientific and other values present within the Area.

Important values present in the proposed ASMA in the vicinity of Palmer Station and key activities to be managed are summarised as follows:

1. Values to be protected and activities to be managed

(i) Scientific values

The diverse and easily accessible assemblages of marine and terrestrial flora and fauna in the southwest Anvers Island and Palmer Basin area are particularly valuable for science, with some datasets spanning the past 100 years and intensive scientific interest beginning in the 1950s. Studies have been carried out on a wide variety of topics, including long-term monitoring of seal and bird populations, surveys of plants and animals in both the terrestrial and sub-tidal environments, investigations of the physiology and biochemistry of birds, seals, terrestrial invertebrates and zooplankton, the behavior and ecology of planktonic marine species, physical oceanography, and marine sedimentology and geomophology. While the United States (US) maintains the only permanent research station within the Area, research in these fields has been undertaken by scientists from a broad range of Antarctic Treaty Parties, often as collaborative projects with US scientists. Some important recent examples from the Palmer Long Term Ecological Research (LTER) program are described below.

The southwest Anvers Island and Palmer Basin area has exceptional importance for long-term studies of the natural variability in Antarctic ecosystems, the impact of world-wide human activities on Antarctica and on the physiology, populations and behaviour of its plants and animals. Research in this region is essential for understanding the linkages among avifauna, krill dynamics and the changing marine habitat.

In particular, the United States Antarctic Program (USAP) has a major and ongoing commitment to ecosystem research in the Antarctic Peninsula region, which was formalized through the designation in 1990 of the area around Palmer Station (US) as a Long Term Ecological Research (LTER) site. The Palmer LTER (PAL-LTER)

site is part of a wider network of LTER sites, and one of only two in the Antarctic, designed specifically to address important research questions related to environmental change over a sustained period spanning more than several decades. Since 1991, the PAL-LTER program has included spatial sampling during annual and seasonal cruises within a large-scale (200,000 km^2) regional grid along the west coast of the Antarctic Peninsula, as well as temporal sampling from October to March in the local area adjacent to Palmer Station. The Palmer LTER and the British Antarctic Survey are collaborating on research comparing the marine ecosystem in the Palmer Basin region with that in Marguerite Bay approximately 400 km further to the south. In the Palmer region, the ecosystem is changing in response to the rapid regional warming first documented by BAS scientists. In addition, recent collaboration has been established as part of the International Polar Year with scientists from France and Australia using metagenomic tools to understand microbial community adaptations to the polar winter.

A major theme in the PAL-LTER is the study of sea-ice dynamics and related impacts on all aspects of the ecosystem (Smith *et al.* 1995). The annual advance and retreat of sea-ice is a major physical determinant of spatial and temporal changes in the structure and function of the Antarctic marine ecosystem, from total and annual primary production to breeding success in seabirds. The Western Antarctic Peninsula (WAP) is a premier example of a region experiencing major changes in species abundance, range and distribution, in response to regional climate change. This change is manifested primarily as a southern migration of regional climate characteristics (Smith *et al.* 1999, 2001). Paleoecological records on sea-ice, diatom stratigraphy and penguin colonization have also placed the current LTER data into a longer-term context (Smith *et al.* 1999, 2001). In particular, the Palmer Basin has been the site of extensive paleoecological and climate change studies. The Palmer Basin also exhibits a variety of geomorphological features of value.

Extensive seabird research has focused on the ecology of Adélie penguins and their avian predators and scavengers within the inshore 50 km^2 PAL-LTER grid close to Palmer Station. Colonies on 18 islands in this area are visited every 2-7 days in the summer season, and three more distant control sites within the ASMA are also visited infrequently to assess the extent of possible disturbance from activities around Palmer Station. Sea ice forms a critical winter habitat for Adélie penguins, and interdisciplinary research has focused on the impacts of changes in the frequency, timing and duration of sea-ice on the life histories of this and other bird species, as well as on prey populations.

Torgersen Island is the site of a study on the impacts of tourism, and has been divided into two areas, one open to visitors and the other closed as a site for scientific reference. This site together with other nearby islands not visited by tourists provide a unique experimental setting to examine the relative effects of natural versus human-induced variability on Adélie penguin populations. The long-term data sets obtained from this site are of particular value in understanding the impacts of tourism on birds.

The southwest Anvers Island and Palmer Basin region also hold particular scientific interest in terms of newly-exposed terrestrial areas that have been subject to vegetation colonization after glacial retreat. With continuing trends of glacial retreat, these areas are likely to be of increasing scientific value.

Seismic monitoring at Palmer Station contributes to a global seismic monitoring network, and the remote location of the station also makes it a valuable site for long-term monitoring of global levels of radionuclides.

It is important that the region is carefully managed so that these scientific values can be maintained and the results of the long-term research programs are not compromised.

(ii) Flora and fauna values

The southwest Anvers Island and Palmer Basin region is one of the most biologically diverse in Antarctica, with numerous species of bryophytes, lichens, birds, marine mammals and invertebrates (Appendix C). These organisms are dependent on both the marine and terrestrial ecosystems for food and habitat requirements, with the Palmer Basin exerting a substantial influence on regional ecological processes.

Breeding colonies of birds and seals are present on ice-free areas along the coast of Anvers Island, as well as on many of the offshore islands within the region. Eleven species of birds breed in the Area, with Adélie penguins (*Pygoscelis adeliae*) the most abundant, and several other species are frequent non-breeding visitors. Five species of seals are commonly found in the Area, but are not known to breed there. Palmer Basin is an important foraging area for birds, seals and cetaceans.

The two native Antarctic vascular plants, *Deschampsia antarctica* and *Colobanthus quitensis*, are commonly found on surfaces with fine soil in the area around Arthur Harbor, although they are relatively rare along the Antarctic Peninsula (Komárková *et al.* 1985). The vascular plant communities found at Biscoe Point (ASPA No. 139) and on the Stepping Stones are some of the largest and most extensive in the Anvers Island region, and are particularly abundant for such a southerly location. Dense communities of mosses and lichens are also found on Litchfield Island (ASPA No. 113) – a site specially protected for exceptional vegetation values – and at several other locations around Arthur Harbor.

The soils and plant communities provide an important habitat for invertebrates, and the ice-free islands and promontories close to Palmer Station are particularly valuable for their abundant populations of the endemic wingless midge *Belgica antarctica*, the southernmost, free-living true insect. This is also of significant value for scientific studies, since this species has not been found to the same extent close to other research stations on the Antarctic Peninsula.

(iii) Educational and visitor values

The southwest Anvers Island area holds a special attraction to tourists because of its biological diversity, accessibility and the presence of Palmer Station. These features offer tourists the opportunity to observe wildlife, and gain an appreciation of Antarctic environments and scientific operations. Outreach to tourists via local tours and shipboard lectures given by scientists is a valuable educational tool, and information is also made available to high school students in the US by initiatives through the LTER program.

2. Aims and objectives

The aim of this Management Plan is to conserve and protect the unique and outstanding environment of the southwest Anvers Island and Palmer Basin region by managing the variety of activities and interests in the Area. The Area requires special management to ensure that these important values are protected and sustained in the long-term, especially the extensive scientific data sets collected over the last 100 years. Increasing human activity and potentially conflicting interests have made it necessary to manage and coordinate activities more effectively within the Area.

The specific objectives of management in the Palmer Basin region are to:

- Facilitate scientific research while maintaining stewardship of the environment;
- Assist with the planning and coordination of human activities in the region, managing potential or actual conflicts of interest among different values, activities and operators, including between different areas of scientific research;
- Ensure that any marine harvesting activities are coordinated with scientific research and other activities taking place within the Area. This coordination could include the development of a plan for harvesting within the Area in advance of any such activities taking place.
- Ensure the long-term protection of scientific, ecological, and other values of the Area through the minimization of disturbance to or degradation of these values, including disturbance to fauna and flora, and to minimize the cumulative environmental impacts of human activities;
- Minimize the footprint of all facilities and scientific experiments established in the Area, including the proliferation of field camps and boat landing sites;
- Promote the use of energy systems and modes of transport that have the least environmental impact, and minimize the use of fossil fuels for the conduct of activities in the Area;
- Encourage communication and co-operation between users of the Area, in particular through dissemination of information on the Area and the provisions that apply.

3. Management activities

To achieve the aims and objectives of this Management Plan, the following management activities are to be undertaken:

- National Programs operating within the Area should establish a Southwest Anvers Island and Palmer Basin Management Group to oversee coordination of activities in the ASMA. The Management Group is established to:
    - facilitate and ensure effective communication among those working in or visiting the Area;
    - provide a forum to resolve any potential conflicts in uses;
    - maintain a record of activities and, where practical, impacts in the Area;
    - develop strategies to detect and address cumulative impacts;
    - evaluate the effectiveness of management activities; and
    - disseminate information on the values and objectives of the ASMA to those working in or visiting the Area.

The Management Group should convene on an annual basis to review past, existing, and future activities and to make recommendations on the implementation of this Management Plan, including its revision when necessary.

- To guide activities in the Area, a general Code of Conduct for activities is included in this Management Plan (see Section 7) and further Guidelines relating to specific activities and zones are included in the Appendices.
- National Programs operating within the Area and tour operators visiting should ensure that their personnel (including staff, crew, visiting scientists and passengers) are briefed on, and are aware of, the requirements of this Management Plan;
- The USAP determines annually the number of tourist vessel visits to Palmer Station (approximately 12 per season) through a pre-season scheduling and approval process;
- Signs and markers shall be erected where necessary and appropriate to show the boundaries of Antarctic Specially Protected Areas (ASPAs) and other zones within the Area. Signs shall be secured and maintained in good condition, and removed when no longer necessary;
- Copies of this Management Plan and supporting documentation will be made available at Palmer Station (US). In addition, the Management Group shall make this information freely available in electronic form to enable visitors to consult plan requirements in advance and to enable them to carry a copy when visiting;
- Visits should be made to the Area as necessary (no less than once every 5 years) to evaluate the effectiveness of the Management Plan, and to ensure that management and maintenance measures are adequate. The Management Plan, Code of Conduct and Guidelines will be revised and updated as necessary.

Note: any activity planned inside an ASPA within the Area requires a permit and must refer to the appropriate management plan for guidance.

4. Period of Designation

Designated for an indefinite period.

5. Maps and photographs

Map 1. Regional map and ASMA boundary.

Map 2. SW Anvers Island Restricted Zones: Rosenthal, Joubin and Dream islands.

Map 3. Arthur Harbor & Palmer Station access.

Map 4. Palmer Station Operations Zone.

Map 5. Torgersen Island Zones.

Map 6. Dream Island Restricted Zone.

Map 7. Litchfield Island, ASPA No.113.

Map 8. Biscoe Point, ASPA No.139.

6. Description of the Area

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

General description

Anvers Island is the largest and most southerly island in the Palmer Archipelago, located approximately 25 km west of the Antarctic Peninsula. It is bounded by Neumayer Channel and Gerlache Strait in the southeast and Bismarck Strait to the south (Map 1). Anvers Island is heavily glaciated, the southwestern half being dominated by the Marr Ice Piedmont, a broad expanse of permanent ice rising gently from the coast to around 1000 m elevation. The southern and western coastlines of Anvers Island within the Area comprise mainly ice cliffs on the edge of the Marr Ice Piedmont, punctuated by small rocky outcrops, ice-free promontories and numerous small near-shore islands. Other prominent land features within the Area include ice-free Cape Monaco at the southwestern extremity of Anvers Island, and Cape Lancaster in the southeast. These ice-free areas form important sites for animal and plant colonisation.

Six main island groups exist within the Area: in the north are the Rosenthal Islands (~22 km NW of Palmer Station). Fringing the Palmer Basin are the Joubin Islands, the Arthur Harbor island group (location of Palmer Station), the Wauwermans Islands, the Dannebrog Islands and the Vedel Islands. These island groups are of low relief, generally of less than 100 m in elevation, although local topography can be rocky and rugged together with small relict ice-caps.

Palmer Station (US) (64°46'27"S, 64°03'15"W) is located within Arthur Harbor on Gamage Point, an ice-free promontory on the southwestern coast of Anvers Island at the edge of the Marr Ice Piedmont (Maps 3 & 4). Immediately to the south of the station are Hero Inlet and Bonaparte Point. Norsel Point lies 2.7 km from Palmer Station at the NW extremity of the largest island in Arthur Harbor, which until recently was joined to Anvers Island by an ice-bridge. Other islands within a few km west of the station include Torgersen (Map 5), Humble, Breaker and Litchfield (Map 7) islands, the latter designated as ASPA No. 113. Those nearby to the southeast include Shortcut, Christine, Hermit, Limitrophe, Laggard and Cormorant islands (Map 3). More distant, Biscoe Point, ASPA No. 136, lies on a small island ~14 km to the southeast that was until recently also joined by an ice-bridge to Anvers Island (Map 8). To the west, Fraser, Halfway (Map 2) and Dream (Map 6) islands lie 5.9, 6.4 and 9.4 km respectively NW of Palmer Station in Wylie Bay.

There are three dominant marine features in the Palmer Basin region:

1. Shallow shelves: extend from Anvers Island and the adjacent island groups to depths of 90-140 m.
2. Bismarck Strait: located south of Palmer Station and north of the Wauwermans Islands on an east–west axis, with depths generally between 360 to 600 m, connecting the southern entrances to Gerlache Strait and Neumayer Channel to Palmer Basin.
3. Palmer Basin: the only deep basin in the area, located 22 km southwest of Palmer Station and with a maximum depth of ~1400 m. It is bordered by the Joubin Islands to the north, the Wauwermans Islands to the east, and the Dannebrog and Vedel island groups in the southeast, and is surrounded by shelves shallower than 165 m. A channel of ~460 m depth connects Palmer Basin to the continental shelf edge west of the Area.

Boundaries of the Area

The Southwest Anvers Island and Palmer Basin ASMA encompasses an area of approximately 3275 km^2, including both terrestrial and marine components. For ease of navigation, the boundaries of the Area follow geographic features where practical and latitude/longitude lines in open ocean areas remote from prominent land features. The northeastern boundary of the Area is defined as a line extending parallel to and approximately one kilometer inland from the southwest Anvers Island coastline. This terrestrial boundary extends from a northerly location at 64°33'S, 64°06'03"W, ~3.1 km north of Gerlache Island, to 64°51'21"S, 63°42'36"W at Cape Lancaster in the south. From Cape Lancaster, the eastern boundary is defined as the 63°42'36"W line of longitude extending 7.9 km across Bismarck Strait to 64°55'36"S on Wednesday Island,

the most easterly of the Wauwermans Islands. The boundary then follows a general southwesterly direction to 65°08'33"S, 64°14'22"W at the southern extremity of the Vedel Islands, following the eastern coastlines of the Wauwermans, Dannebrog and Vedel island groups. The southern boundary of the area is defined as the 65°08'33"S line of latitude extending due west from 64°14'22"W in the Vedel Islands to 65°00'W.

The northern boundary is defined as the line of latitude extending from 64°33'S, 64°06'03"W to the coast (~3.1 km north of Gerlache Island) and thence due west to the 65°00'W line of longitude. The western boundary of the Area is defined as the 65°00'W line of longitude, extending between 64°33'S in the north and 65°08'33"S in the south.

The boundaries of the Area have been designed to include areas of high ecological value while also maintaining a practical configuration for ease of use and navigation. The original Multiple-use Planning Area boundary has been extended northwards to include the Rosenthal Islands, which contain several large colonies of chinstrap and gentoo penguins that may function as source populations for other colonies in the southwest Anvers Island region (W. Fraser *pers. comm.* 2006). The original boundary has also been extended westwards and southwards to include the full extent of the Palmer Basin, because of the biological, palaeoecological and oceanographic importance of this feature.

The extent of the terrestrial component has been revised from the original Multiple-use Planning Area boundary to exclude extensive ice fields on the Marr Ice Piedmont, which do not possess values related to the core objectives of the management plan. The boundary encompasses all ice-free coastal areas, the Palmer Basin which plays a key role in regional ecosystem processes, and the nearby associated island groups, which are biologically important and also the focus of most human activity in the region.

Climate

The western Antarctic Peninsula is experiencing the most rapid warming of any marine ecosystem on the planet (Ducklow *et al.* 2007). The mean annual temperature at Palmer Station between 1974-96 was –2.29° C, with an average minimum monthly air temperature over this period of –7.76° C in August, and a maximum of 2.51° C in January (Baker 1996). Data from Faraday / Vernadsky Station 53 km to the south demonstrate a statistically significant trend of annual average temperature rise, from –4.4º in 1951 to –2.0º in 2001, an average rate of 0.057º C per annum (Smith *et al.* 2003). The minimum recorded temperature at Palmer Station as of 2006 is –31° C, and the maximum is 9° C. Storms and precipitation are frequent, with approximately 35-50 cm water equivalent of precipitation received annually in the form of snow and rain (Smith *et al.* 1996). Winds are persistent but generally light to moderate in strength, prevailing from the northeast.

Glaciology, geology and geomorphology

The dominant glacial feature within the Area is the Marr Ice Piedmont. Smaller glaciers and ice-caps are found on many of the islands and promontories, the largest of which is located on Gerlache Island in the Rosenthal Islands (Map 2). Recent observations show the local glaciers to be retreating by approximately 10 m annually, with a number of ice-bridges between the Marr Ice Piedmont and offshore islands having collapsed.

Anvers Island and the numerous small islands and rocky peninsulas along its southwestern coast are composed of late-Cretaceous to early-Tertiary age granitic and volcanic rocks belonging to the Andean Intrusive Suite. These rocks dominate the Anvers Island area (Hooper 1962) and similar rock types extend into the island groups further south.

The main marine geomorphological feature within the Area is Palmer Basin, an erosional, inner-shelf trough located at the convergence of former ice-flows that once drained across the continental shelf from three distinct accumulation centers on the Antarctic Peninsula and Anvers Island (Domack *et al.* 2006). Seafloor features include relict terraces, sub-glacial lake deltas, channels, debris slopes and morainal banks. These remain as evidence of the development of a sub-glacial lake within the Palmer Basin during, or prior, to the last glacial maximum, its subsequent drainage, and the recession of the Palmer Basin ice stream system (Domack *et al*. 2006).

Freshwater habitat

Throughout the Area there are no significant lakes or streams, although there are numerous small ponds and temporary summer melt streams (Lewis Smith 1996). These are mainly on Norsel Point and some of the offshore islands in Arthur Harbor: notably on Humble Island, and also found on Breaker, Shortcut, Laggard, Litchfield and Hermit islands, and at Biscoe Point (W. Fraser, *pers. comm.* 2006), although many are heavily contaminated by neighboring penguin colonies and groups of non-breeding skuas. The streams possess few biota other than marginal mosses (e.g. *Brachythecium austrosalebrosum*, *Sanionia uncinata*), which are a favored habitat for the larvae of the Antarctic wingless midge, *Belgica antarctica*. However, the ponds support a diverse micro-algal and cyanobacterial flora, with over 100 taxa being recorded, although numbers vary considerably between ponds (Parker 1972, Parker & Samsel 1972). Of the freshwater fauna there are numerous species of protozoans, tardigrades, rotifers, and nematodes, and a few free-swimming crustaceans of which the anostracan *Branchinecta gaini* (Antarctic fairy shrimp) and copepods *Parabroteus sarsi* and *Pseudoboeckella poppii* are the largest and most conspicuous (Heywood 1984).

Flora

The Area lies within the cold maritime Antarctic environment of the western Antarctic Peninsula, where conditions of temperature and moisture availability are suitable to support a high diversity of plant species, including the two native flowering plants Antarctic hairgrass (*Deschampsia antarctica*) and Antarctic pearlwort (*Colobanthus quitensis*) (Longton 1967; Lewis Smith 1996, 2003). In Antarctica these flowering plants occur only in the western Peninsula region, South Shetland and South Orkney Islands, occurring most frequently on sheltered, north-facing slopes, especially in gullies and on ledges near sea level. In a few favourable sites the grass has developed locally extensive closed swards (Lewis Smith 1996), notably at Biscoe Point (ASPA No. 139), where closed swards cover up to 6500 m^2. Throughout the maritime Antarctic, and especially in the Arthur Harbor area, the warming trend since the early 1980s has resulted in populations of both species rapidly increasing in number and extent, and numerous new colonies becoming established (Fowbert & Lewis Smith 1994; Day *et al.* 1999).

Vegetation within the Area is otherwise almost entirely cryptogamic (Lewis Smith 1979), with bryophytes dominating moist to wet habitats and lichens and some cushion-forming mosses occupying the drier soils, gravels and rock surfaces (Komárková *et al.* 1985). Dense communities of mosses and lichens are found at several locations around Arthur Harbor, including Norsel Point, Bonaparte Point and Litchfield Island, as well as some of the outer islands and Cape Monaco. In particular, sheltered north-facing slopes support locally extensive communities of the moss turf sub-formations up to 30 cm in depth, with stands of the *Polytrichum strictum–Chorisodontium aciphyllum* association predominating (Lewis Smith 1982). In Arthur Harbor large banks of these mosses can be found overlying an accumulation of peat exceeding a meter in depth and radio-carbon dated at almost 1000 years old. These are particularly apparent on Litchfield Island (ASPA No. 113), which is protected principally because of its outstanding vegetation values. Smaller examples are found on Laggard Island, Hermit Island and on Norsel Point, with small banks occurring on coastal promontories and islands throughout the Area. The largest of the Joubin Islands has a peat bank composed solely of *Chorisodontium* (Fenton & Lewis Smith 1982). From the late 1970s relictual patches of centuries-old peat formed by these mosses became exposed below the receding ice cliffs of Marr Ice Piedmont, notably on Bonaparte Point (Lewis Smith 1982). Wet level areas and seepage slopes usually support communities of the moss carpet and mat sub-formation in which *Sanionia uncinata, Brachythecium austrosalebrosum* and *Warnstorfia* spp. are usually dominant. One exceptionally extensive stand on Litchfield Island was destroyed by the increasing summer influx of fur seals during the 1980s.

Lichen-dominated (e.g. species of *Usnea*, *Pseudephebe*, *Umbilicaria* and many crustose forms) communities of the fruticose and foliose lichen sub-formation (often referred to as fellfield) are widespread on most stable, dry stony ground and exposed rock surfaces, often with associated cushion-forming mosses (e.g. species of *Andreaea*, *Hymenoloma*, *Orthogrimmia* and *Schistidium*) (Lewis Smith & Corner 1973). Rocks and boulders close to the shore, especially where influenced by nutrient (nitrogen) input from nearby penguin and petrel colonies, usually support various communities of the crustose and foliose lichen sub-formation. Many of the species (e.g. *Acarospora*, *Amandinea*, *Buellia*, *Caloplaca*, *Haematomma*, *Lecanora*, *Lecidea*, *Xanthoria*) are brightly coloured (orange, yellow, gray-green, brown, white).

The green foliose alga *Prasiola crispa* develops a conspicuous zone on the highly nutrient enriched soil and gravel around penguin colonies. In late summer melting ice fields and permanent snow patches develop a

reddish hue as huge aggregations of unicellular snow algae accumulate in the melting firn. Elsewhere, green snow algae give the surface a distinctive coloration.

A checklist of flora observed in the Area is included in Appendix C.

Invertebrates

The vegetation communities found within the Area serve as important habitat for invertebrate fauna. As is common elsewhere on the Antarctic Peninsula, springtails and mites are especially prominent. Colonies of the mite *Alaskozetes antarcticus* are frequently observed on the sides of dry rocks, while other species are associated with mosses, fruticose lichens and Antarctic hairgrass. The most common springtail, *Cryptopygus antarcticus*, is found in moss beds and under rocks. Springtails and mites are also found in other habitats, including bird nests and limpet accumulations (Lewis Smith 1966).

The islands near Palmer Station are notable for their abundant populations of the wingless midge *Belgica antarctica*, a feature not found to the same extent close to other research stations on the Antarctic Peninsula. This endemic species is significant because it is the southernmost, free-living true insect. It inhabits a wide range of habitats including moss, the terrestrial alga *Prasiola crispa* and nutrient-enriched microhabitats adjacent to elephant seal wallows and penguin colonies. Larvae are exceptionally tolerant of freezing, anoxia, osmotic stress and desiccation.

Colonies of the seabird tick *Ixodes uriae* are frequently found beneath well-drained rocks adjacent to seabird nests and especially Adélie penguin colonies. This tick has a circumpolar distribution in both hemispheres and exhibits the greatest range of thermal tolerance (-30 to 40°C) of any Antarctic terrestrial arthropod. The abundance of this tick has decreased during the past three decades concomitantly with observed decreases in Adélie penguin populations (R. Lee *pers. comm.* 2007).

Birds

Three species of penguins, Adélie (*Pygoscelis adeliae*), chinstrap (*P. antarctica*) and gentoo (*P. papua*), breed in the southwest Anvers Island area (Parmelee & Parmelee 1987, Poncet & Poncet 1987, Woehler 1993). The most abundant species is the Adélie penguin, which breeds on Biscoe Point, Christine, Cormorant, Dream, Humble, Litchfield and Torgersen islands, as well as the Joubin and Rosenthal islands (Maps 2-8). Numbers of Adélie penguins have declined significantly over the last 30 years, thought to be linked to the effects of the changing climate on sea-ice conditions, snow accumulation and prey availability (Fraser & Trivelpiece 1996, Fraser & Hofmann 2003, Fraser & Patterson 1997, Trivelpiece & Fraser 1996). Numbers of Adélie penguins breeding on Litchfield Island declined from 884 pairs to 143 pairs between 1974/75 and 2002/03, with no pairs breeding in 2006/07 (W. Fraser *pers. comm.* 2007). Chinstrap penguins are present on Dream Island, on small islands near Gerlache Island, and on the Joubin Islands. The Rosenthal Islands contain source populations of chinstrap and gentoo penguins that are likely to be closely linked to other colonies in the southwest Anvers Island region. Gentoo penguins are thought to be increasing in the region in response to the regional warming, and may be colonising new sites in recently deglaciated areas or sites vacated by Adélie penguins. In particular, small glaciers on the Wauwermans Islands are retreating and may provide important habitat for new gentoo colonies (W. Fraser *pers. comm.* 2006).

Southern giant petrels (*Macronectes giganteus*) breed at numerous locations within the Area. Blue-eyed shags (*Phalacrocorax* [atriceps] *bransfieldensis*) breed on Cormorant Island, Elephant Rocks and in the Joubin Islands. Other breeding bird species occurring in the Area include kelp gulls (*Larus dominicanus*), Wilson's storm petrels (*Oceanites oceanicus*), sheathbills (*Chionis alba*), south polar skuas (*Catharacta maccormicki*), brown skuas (*C. loennbergi*) and Antarctic terns (*Sterna vittata*). Common non-breeding visitors include southern fulmars (*Fulmarus glacialoides*), Antarctic petrels (*Thalassoica antarctica*), cape petrels (*Daption capense*) and snow petrels (*Pagadroma nivea*). A full list of breeding, frequent and less common or transient visitors recorded in the Area is provided in Appendix C.

Marine mammals

There are few published data on the marine mammals within the area. Cruises conducted in Gerlache Strait have observed fin (*Balaenoptera physalus*), humpback (*Megaptera novaeangliae*) and southern bottlenose (*Hyperoodon planifrons*) whales (Thiele 2004). Anecdotal observations by Palmer Station personnel and visitors have noted fin, humpback, sei (*Balaenoptera borealis*), southern right (*Eubalaena australis*), minke (*Balaenoptera bonaerensis*) and killer (*Orcinus orca*) whales within the Area, as well as hourglass dolphins

(*Lagenorhynchus cruciger*) (W. Fraser *pers. comm.* 2007). Non-breeding Weddell (*Leptonychotes weddellii*) and southern elephant seals (*Mirounga leonina*) haul out on accessible beaches, and crabeater (*Lobodon carcinophagus*) and leopard seals (*Leptonyx hydrurga*) are also commonly seen at sea and on ice floes within the Area. Numbers of non-breeding Antarctic fur seals (*Arctocephalus gazella*), mainly juvenile males, have increased in recent years, and depending on the time of year hundreds to thousands of individuals may be found on local beaches throughout the Area. Their increasing abundance is damaging vegetation at lower elevations (Lewis Smith 1996, Harris 2001). Despite the lack of published data concerning marine mammals within the Area, their presence is likely to be related to foraging for Antarctic krill, which forms an important component in their diets (Ducklow *et al.* 2007). A list of marine mammals observed within the Area is provided in Appendix C.

Oceanography

The Western Antarctic Peninsula is unique as the only region where the Antarctic Circumpolar Current (ACC) is adjacent to the continental shelf. The ACC flows in a northeasterly direction off the shelf, and there is also some southward flow on the inner part of the shelf (Smith *et al.* 1995). Circumpolar Deep Water (CDW) transports macronutrients and warmer, more saline water onto the shelf, which has significant implications for heat and salt budgets in the southwest Anvers Island and Palmer Basin region. Circulation patterns and the presence of the CDW water mass may also affect the timing and extent of sea ice (Smith *et al.* 1995). The extent of sea ice cover and the timing of the appearance of the marginal ice zone (MIZ) in relation to specific geographic areas have high interannual variability (Smith *et al.* 1995), although Smith and Stammerjohn (2001) have shown a statistically significant reduction in overall sea-ice extent in the Western Antarctic Peninsula region over the period for which satellite observations are available. The ice edge and the MIZ form major ecological boundaries, and are of particular interest in the region because of their interaction with many aspects of the marine ecosystem, including phytoplankton blooms and seabird habitat. Within the Area, the Palmer Basin is a focal point of biological and biogeochemical activity and an important area of upwelling.

Marine ecology

The marine ecosystem west of the Antarctic Peninsula is highly productive, with dynamics that are strongly coupled to the seasonal and interannual variations in sea ice. The rapid climate changes occurring on the western Antarctic Peninsula, with resultant changes in sea ice, is affecting all levels of the food web (Ducklow *et al.* 2007). Marine flora and fauna within the Area are strongly influenced by factors including low temperatures, a short growing season, high winds influencing the depth of the mixed layer, proximity to land with the potential for input of micronutrients, and the varying sea-ice coverage. It is a high-nutrient, low-biomass environment.

High levels of primary production are observed within the region, maintained by topography-induced upwellings and stratification by fresh water input from glaciers (Prézelin *et al.* 2000, 2004; Dierssen *et al.* 2002). In terms of biomass, the phytoplankton communities are dominated by diatoms and cryptomonads (Moline & Prezelin 1996). Species distribution and composition varies with water masses, fronts and the changing position of the ice edge.

Salps and Antarctic krill (*Euphausia* sp.) often dominate the total zooplankton biomass (Moline & Prezelin 1996). Dominant organisms in the neritic province on the shelf southwest of Anvers Island are *E. superba, E. crystallorophias,* and fish larvae (Ross *et al.* 1996). The distribution and abundance of zooplankton is variable over time, and Spiridonov (1995) found krill in the Palmer Archipelago to exhibit a highly variable life cycle as compared with other areas of the western Antarctic Peninsula.

There is a high level of endemism among fish species sampled on the Antarctic continental shelf as compared with other isolated marine communities, with new species still being regularly discovered (Eastman 2005). Examples of fish collected within the Area are six species of Nototheniidae (*Notothenia coriiceps neglecta, N. gibberifrons, N. nudifrons, Trematomus bernachii, T. hansoni* and *T. newnesi*), one of Bathydraconidae (*Parachaenichthys charcoti*) and one of Channichthydae (*Chaenocephalus aceratus*) (De Witt & Hureau 1979, Detrich 1987, McDonald *et al.* 1992).

The soft-bottomed macrobenthic community of Arthur Harbor is characterised by high species diversity and abundance, being dominated by polychaetes, peracarid crustaceans and molluscs (Lowry 1975, Richardson

& Hedgpeth 1977, Hyland *et al.* 1994). Samples collected during a study of UV effects on marine organisms carried out close to Palmer Station during the austral spring (Karentz *et al.* 1991) yielded 57 species (1 fish, 48 invertebrates, and 8 algae). Sampling was from a combination of rocky intertidal areas (yielding 72% of organisms), subtidal and planktonic habitats. Of the marine invertebrates collected, the greatest number of species was found in the phylum Arthropoda (12 species). The Antarctic limpet (*Nacella concinna*) is common in Arthur Harbor (Kennicutt *et al*. 1992b).

Human activities and impact

'Base N' (UK) was built on Norsel Point (Map 3) in 1955 and operated continuously until 1958. The United States established 'Old Palmer' Station nearby on Norsel Point in 1965, although in 1968 transferred the main US operations to the present site of Palmer Station on Gamage Point. 'Base N' was used as a biological laboratory by US scientists from 1965-71, although this burnt to the ground in 1971. 'Old Palmer' station was removed by the US in 1991, and all that remains of both 'Old Palmer' and 'Base N' are the original concrete footings.

On 28 January 1989, the Argentine vessel *Bahia Paraiso* ran aground 750 m south of Litchfield Island, releasing more than 600,000 liters (150,000 gallons) of petroleum into the surrounding environment (Kennicutt 1990, Penhale *et al.* 1997). Contamination was lethal to some of the local biota including krill, intertidal invertebrates and seabirds, particularly Adélie penguins and blue-eyed shags (Hyland *et al.* 1994, Kennicutt *et al.* 1992a&b, Kennicutt & Sweet 1992). A summary of the spill, research on the environmental impact, and the joint 1992/1993 clean-up by Argentina –and The Netherlands can be found in Penhale *et al.* (1997).

All fin-fishing is currently prohibited in the western Antarctic Peninsula region (CCAMLR Statistical Subarea 48.1) under CCAMLR Conservation Measure 32-02 (1998) (CCAMLR 2006a). Krill fishing occurs in the offshore region to the northwest of the Palmer Archipelago, and is currently concentrated mainly around the South Shetland Islands further to the north. The total krill catch for Subarea 48.1 was reported at 7095 tonnes in the 2004/05 season (CCAMLR 2006b), and there has been some limited historical activity in the vicinity of the ASMA. However, fine-scale data show krill catches in the southwest Anvers Island region during only one 3-month period between 2000 and 2005, with a total catch of less than 4 tonnes (Q2, 2002/03)(CCAMLR 2006b: 187). CCAMLR-related activities are therefore occurring within or close to the Area, but are currently minimal.

Current human activities in the Area are mainly related to science and associated logistic activities, and tourism. Palmer Station (US) serves as the base for scientific research and associated logistic operations conducted in the western Antarctic Peninsula and Palmer Archipelago by the United States Antarctic Program (USAP) and collaborators from a number of other Antarctic Treaty Parties. Scientific and logistic support is received from ships operated or chartered by the USAP, which visit the station approximately 15 times per year. Aircraft are not operated routinely from Palmer Station, although helicopters may visit occasionally in summer. Local scientific transport and support is provided using small inflatable boats, which are operated throughout the 3-mile (~5 km) 'safe boating limit' area during the summer season (Map 3). Frequent visits are made to islands within the safe boating limit for scientific research, and also for recreation by base personnel.

Published information on the impacts of science (for example from sampling, disturbance or installations) within the Area is limited. However, numerous welding rods inserted into soil to mark vegetation study sites (Komárková 1983) were abandoned at Biscoe Point (ASPA No. 139) and Litchfield Island (ASPA No. 113) in 1982. Where these remained, surrounding vegetation had been killed as an apparent result of highly localised contamination by chemicals from the rods (Harris 2001).

Between 1984/85 and 1990/91, the number of tour ship visits each season at Palmer Station increased from 4 visits (340 visitors) to 12 (1300 visitors). Since 1991 the number of tour ship visits to Palmer Station has been maintained at approximately 12 vessels annually, with visits arranged prior to the start of the season. Tourists typically land at the station itself for a tour of the facilities, visit the Visitor Zone on Torgersen Island (Map 5), and make short cruises around the nearshore islands using inflatable boats. Yachts also visit Palmer Station and the surrounding area, with 17 vessels visiting during the 2007/08 season. Studies of changes in penguin

populations on Torgersen Island and nearby islands suggest that the impacts of visits by tourists, base personnel, and scientists on breeding performance have been small compared to longer-term climate-related forcing factors (Fraser & Patterson 1997, Emslie *et al.* 1998, Patterson 2001).

(ii) Structures within the Area

Modern Palmer Station (Map 4) consists of two main buildings, a laboratory facility and several ancillary structures including an aquarium, small boathouse, workshops, storage and communications facilities. The station is powered by one diesel-electric generator, the fuel for which is stored in two double-walled tanks. A pier has been constructed adjacent to the station at the entrance to Hero Inlet, which may accommodate medium-sized scientific and logistic support ships. The station is operated year-round and can accommodate approximately 44 people, with a summer occupancy of at least 40, and a winter complement of around 10.

(iii) Restricted and managed zones within the Area

Three types of management zones (Restricted, Visitor and Operations) are designated within the Area. Two ASPAs are also located within the Area.

(a) Restricted Zones

Sixteen sites of special ecological and scientific value are designated as Restricted Zones (Maps 2-6). These sites are particularly sensitive to disturbance during the summer months, and are listed as follows:

Table 1: Restricted Zones within the Southwest Anvers Island and Palmer Basin ASMA

Bonaparte Point (incl. 'Diana's Island' and 'Kristie Cove')	Laggard Island
Christine Island	Limitrophe Island
Cormorant Island	Norsel Point
Dream Island	Rosenthal Islands
Elephant Rocks	Shortcut Island
Hermit Island	Shortcut Point
Humble Island	Stepping Stones
Joubin Islands	Torgersen Island (SW half of island)

The Restricted Zones include a buffer extending 50 m from the shore into any adjacent marine area (Map 2). A 50 m Restricted Zone buffer also extends around Litchfield Island (ASPA No. 113). In order to protect sensitive bird colonies throughout the breeding season to the maximum extent possible, and also plant communities, access to Restricted Zones between 1 October to 15 April inclusive is restricted to those conducting essential scientific research, monitoring or maintenance. All non-essential small boat traffic should avoid transit of or cruising within the 50 m marine buffers of Restricted Zones.

Specific guidelines for scientific research activities within Restricted Zones are included in the Scientific Guidelines for the ASMA (Appendix A).

(b) Visitor Zone

The northeastern half of Torgersen Island is designated as a Visitor Zone (Map 5). Visitors are currently directed to this part of the island, while access to the Restricted Zone in the southwest part of the island, which is set aside as a scientific reference area, is restricted to those conducting essential scientific research, monitoring or maintenance. Specific guidelines for activities within the Visitor Zone are included in the Visitor Guidelines for the ASMA (Appendix B).

(c) Operations Zone

Palmer Station facilities are largely concentrated within a small area on Gamage Point. The Operations Zone is designated as the area of Gamage Point encompassing the station buildings, together with adjacent masts, aerials fuel storage facilities and other structures and extending to the permanent ice edge of the Marr Ice Piedmont (Map 4).

(d) Antarctic Specially Protected Areas (ASPAs)

Two Antarctic Specially Protected Areas, ASPA No. 113 Litchfield Island and ASPA No. 139 Biscoe Point, are located within the ASMA (Maps 7 and 8). Revised management plans for both sites were adopted by the Antarctic Treaty Parties in 2004. All entry is prohibited unless in accordance with a Permit issued by an appropriate national authority.

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

In addition to ASPA No. 113 and ASPA No. 139 within the Area, the only other protected area within close proximity is ASPA No. 146, South Bay, Doumer Island, 25 km southeast of Palmer Station (Map 1). There are no Historic Sites and Monuments within the Area, with the nearest being HSM No. 61, Base A, Port Lockroy, Goudier Island, 30 km east of Palmer Station (Map 1).

7. General Code of Conduct

The Code of Conduct in this section is the main instrument for the management of activities in the Area. It outlines the overall management and operational principles for the Area. More specific environmental, scientific and visitor guidelines are provided in the appendices.

(i) Access to and movement within the Area

Access to the Area is generally by ship (Map 4), with occasional access by helicopter. There are no special restrictions on the transit of vessels through the Area, with the exception of seasonal buffer zones extending 50 m from the shore at a small number of islands designated as Restricted Zones (see Section 6(iii)(a)). Prior to visiting Palmer Station, radio contact should always be made to obtain guidance on local activities being conducted in the region (Map 3).

Tour ships, yachts and National Program vessels may stand offshore and access Palmer Station and the surrounding coast and islands by small boat, taking into account the access restrictions applying within designated zones. The region of safe small boat operations and preferred small boat landing sites within the area local to Palmer Station are shown on Map 3 (see also Appendix A).

Access to Restricted Zones between 1 October – 15 April inclusive is restricted to those conducting essential scientific research, monitoring or maintenance, including the nearshore marine area within 50 m of the coast of these zones (see Section 6(iii)(a) for details). Access to ASPAs is prohibited except in accordance with a Permit issued by an appropriate national authority.

Aircraft operating within the Area should follow the ‘Guidelines for the operation of aircraft near concentrations of birds in Antarctica’ (Resolution 4, XXVII Antarctic Treaty Consultative Meeting). The primary helicopter landing site at Palmer Station is a flat, rocky area approximately 400 m east of Palmer Station. Helicopter approach should be high over the peninsula east of Palmer Station or up the channel from SE (refer to Palmer Station page in the Anvers Island section of the *Wildlife Awareness Manual* (Harris 2006)). Overflight of wildlife colonies should be avoided throughout the Area, and specific overflight restrictions apply at Litchfield Island (ASPA No.113) and Biscoe Point (ASPA No.139) (Maps 7 & 8 and specific provisions in the ASPA management plans).

Movement on land within the Area is generally on foot, although vehicles are used in the Operations Zone. A route leading from Palmer Station up onto the Marr Ice Piedmont is marked by flags to avoid crevassed areas. The precise route varies according to conditions and visitors should obtain the latest information on the route from Palmer Station. In the winter, snowmobiles are sometimes used on this route. All movement should be undertaken carefully to minimise disturbance to animals, soil and vegetated areas.

(ii) Activities that are or may be conducted within the Area

Activities that may be conducted in the Area include:

- scientific research, or the logistical support of scientific research, that will not jeopardise the values of the Area;
- management activities, including the maintenance or removal of facilities, clean-up of abandoned work-sites, and monitoring the implementation of this Management Plan; and
- tourist or private expedition visits consistent with the provisions of this Management Plan and the Visitor Guidelines (Appendix B);
- media, arts, education or other official national program visitors;
- harvesting of marine living resources, which should be conducted in accordance with the provisions of this Management Plan and with due recognition of the important scientific and environmental values of the Area. Any such activities should be conducted in coordination with research and other activities taking place, and could include development of a plan and guidelines that would help to ensure that harvesting activities did not pose a significant risk to the other important values of the Area.

All activities in the Area should be conducted in such a manner so as to minimize environmental impacts. Specific guidelines on the conduct of activities within the Area, including within specific zones, can be found in the Appendices.

(iii) Installation, modification or removal of structures

Site selection, installation, modification or removal of temporary refuges or tents should be undertaken in a manner that does not compromise the values of the Area. Installation sites should be re-used to the greatest extent possible and the location recorded. The footprint of installations should be kept to the minimum practical.

Scientific equipment installed in the Area should be clearly identified by country, name of principal investigator, contact details, and date of installation. All such items should be made of materials that pose minimal risk of contamination to the area. All equipment and associated materials should be removed when no longer in use.

(iv) Location of field camps

Temporary field camps may be made where required for research, and in accordance with the Restricted Zone and ASPA provisions. Field camps should be located on non-vegetated sites, or on thick snow or ice cover when practical, and should avoid concentrations of mammals or breeding birds. The location of field camps should be recorded, and previously occupied campsites should be re-used where appropriate. The footprint of campsites should be kept to the minimum practical.

Emergency caches are located on several islands within the Area for safety purposes, and are identified on Map 3. Please respect the caches and only use them in a genuine emergency, reporting any such use to Palmer Station so the cache can be restocked.

(v) Taking or harmful interference with native flora and fauna

Taking (including killing or capturing) 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* (1998).

(vi) Collection or removal of anything not brought into the Area

Material not covered by 7(v) above should only be removed from the area for scientific and associated educational purposes or essential management or conservation purposes, and should be limited to the minimum necessary to fulfill those needs. Material of human origin likely to compromise the values of the Area may be removed unless the impact of removal is likely to be greater than leaving the material in place. If this is the case the appropriate authority should be notified. Do not disturb experimental sites or scientific equipment.

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

Visitors should seek to minimize the risk of introduction of non-native species to the maximum extent practical.

(viii) Waste disposal / management

All wastes other than human wastes and domestic liquid waste shall be removed from the Area. Human and domestic liquid wastes from stations or field camps may be disposed of into the sea below the high water mark. In accordance with Article 4, Annex III of the Protocol on Environmental Protection, wastes shall not be disposed of into freshwater streams or lakes, onto ice-free areas, or onto areas of snow or ice which terminate in such areas or have high ablation.

(ix) Requirements for Reports

Reports of activities in the Area should be maintained by the Management Group to the greatest extent possible, and made available to all Parties. In accordance with Article 10 of Annex V of the Protocol on Environmental Protection, arrangements should be made for collection and exchange of reports of inspection visits and on any significant changes or damage within the Area.

Tour operators should record their visits to the Area, including the number of visitors, dates, and any incidents in the Area.

8. Exchange of information

In addition to the normal exchange of information by means of the annual national reports to the Parties of the Antarctic Treaty, and to SCAR and COMNAP, Parties operating in the Area should exchange information through the Management Group. All National Antarctic Programs planning to conduct scientific activities within the Area should, as far as practical, notify the Management Group in advance of their nature, location and expected duration, and any special considerations related to the deployment of field parties or scientific instrumentation within the Area.

All tour ships and yachts should, as far as practical, provide the Management Group with details of scheduled visits in advance.

All those planning to conduct marine harvesting activities within the Area should, as far as practical, notify the Management Group in advance of their nature, location and expected duration, and of any special considerations related to how these activities could impact on scientific investigations being carried out within the Area.

Information on the location of scientific activities within the Area should be disseminated as far as practical.

9. Supporting documentation

This Management Plan includes the following supporting documents as appendices:

- Appendix A: Scientific and Environmental Guidelines (including guidelines for Restricted Zones);
- Appendix B: Visitor Guidelines (including guidelines for the Visitor Zone);
- Appendix C: Plant, bird and mammal species recorded within the Southwest Anvers Island and Palmer Basin ASMA;
- Appendix D: References.

Appendices

Appendix A - Supporting Guidelines and Data

Scientific and Environmental Guidelines (including guidelines for Restricted Zones)

The coastal marine environmental of the West Antarctic Peninsula has become an important site for scientific research, with a history of study going back some fifty years. This code suggests how you can help to protect the values of the area for future generations and ensure that your presence in the region will have as little impact as possible.

- Everything taken into the field must be removed. Do not dump any unwanted material on the ground or in the water.
- Do not collect specimens or any natural material of any kind, including fossils, except for approved scientific and educational purposes.
- For those based at Palmer Station, stay within the safe boating limits: these are approximately 5 km (3 miles) from the station and no closer than 300 m from the glacier front along the Anvers Island coastline (Map 3).
- Visit only approved islands at approved times. Do not harass wildlife. Do not disturb mummified seals or penguins.
- When traveling on foot, stay on established trails whenever possible. Do not walk on vegetated areas or rock formations. Some of the biological communities in them have taken several thousand years to develop.
- Ensure that equipment and supplies are properly secured at all times to avoid dispersion by high winds. High velocity winds can arrive suddenly and with little warning.
- Avoid any activities that would result in the dispersal of foreign substances (e.g., food, fuel, reagents, litter). Do not leave any travel equipment behind.

Fuel and chemicals:

- Take steps to prevent the accidental release of chemicals such as laboratory reagents and isotopes (stable or radioactive). When permitted to use radioisotopes, precisely follow all instructions provided.
- Ensure you have spill kits appropriate to the volume of fuel or chemicals you have and are familiar with their use.

Sampling and experimental sites:

- All sampling equipment should be clean before being brought into the field.
- Once you have drilled a sampling hole in sea ice or dug a soil pit, keep it clean and make sure all your sampling equipment is securely tethered.
- Avoid leaving markers (e.g. flags) and other equipment for more than one season without marking them clearly with your event number and duration of your project.

Glaciers:

- Minimize the use of liquid water (e.g., with hot water drills) which could contaminate the isotopic and chemical record within the glacier ice.
- Avoid the use of chemical-based fluids on the ice.
- If stakes or other markers are placed on a glacier, use the minimum number of stakes required to meet the needs of the research; where possible, label these with event number and project duration.

Restricted Zones:

- Research in Restricted Zones should be carried out with particular care to avoid or minimize trampling of vegetation and disturbance of wildlife;
- Minimize any disturbance to birds during the breeding season (1 October to 15 April) except for compelling scientific reasons;
- Access to the mooring adjacent to the Restricted Zone on Bonaparte Point should be by small boat when ice and weather permit. If it is necessary to approach the mooring from within the Restricted Zone, walk as close to the coastline as possible to avoid south polar skua (*Catharacta* [skua] *maccormicki*) nesting territories on the ridge crest.
- All visits to and activities within Restricted Zones should be recorded, in particular records should be kept of the type and quantity of all sampling.

Appendix B- Visitor Guidelines (including guidelines for the Visitor Zone)

These guidelines are for commercial tour operators and private expeditions, as well as for National Antarctic Program staff when undertaking recreational activities within the Area.

- Visitor activities should be undertaken in a manner so as to minimize adverse impacts on the southwest Anvers Island and Palmer Basin ecosystem and/or on the scientific activities in the Area;
- Tour operators should provide visit schedules to National Programs operating in the Area in advance of their visits, which should be circulated to the Management Group as soon as they become available;
- In addition to the above, tour vessels and yachts planning to visit Palmer Station should make contact with the station at least 24 hours before arrival to confirm details of the visit;
- At Palmer Station, no more than 40 passengers should be ashore at any time;
- Small boat cruising should avoid any disturbance of birds and seals, and take account of the 50 m operation limit around Restricted Zones;
- Visitors should maintain a distance of 5 meters from birds or seals, to avoid causing them disturbance. Where practical, keep at least 15 meters away from fur seals;
- Visitors should avoid walking on any vegetation including mosses and lichens;
- Visitors should not touch or disturb scientific equipment, research areas, or any other facilities or equipment;
- Visitors should not take any biological, geological or other souvenirs, or leave behind any litter;
- Within the group of islands in Arthur Harbor, tourist landings should be confined to the designated Visitor Zone.

Visitor Zone (Torgersen Island)

Visits to Torgersen Island should be undertaken in accordance with the general visitor guidelines outlined above. Further site-specific guidelines are as follows:

- Landings on Torgersen Island should be made at the designated small boat landing site at 64°46'17.8"S, 64°04'31"W on the northern shore of the island;
- No more than 40 passengers should be ashore at any time;
- Visitors should limit their visit to the Visitor Zone portion of the island, as the Restricted Zone is a control site for scientific research (Map 5).

Appendix C- Plant, bird and mammal species recorded within the Southwest Anvers Island and Palmer Basin ASMA

Table C.1: Plant species recorded within the Area (extracted from British Antarctic Survey Plant Database (2007)).

Flowering plants	**Lichens**
Colobanthus quitensis	*Acarospora macrocyclos*
Deschampsia antarctica	*Amandinea petermannii*
Liverworts	*Buellia anisomera, B. melanostola, B. perlata, B. russa*
Barbilophozia hatcheri	*Catillaria corymbosa*
Cephaloziella varians	*Cetraria aculeata*
Lophozia excisa	*Cladonia carneola, C. deformis, C. fimbriata, C. galindezii, C. merochlorophaea var. novochloro, C. pleurota, C. pocillum, C. sarmentosa, C. squamosa*
Mosses	*Coelopogon epiphorellus*
Andreaea depressinervis, A. gainii var. gainii, A. regularis M	*Haematomma erythromma*
Bartramia patens	*Himantormia lugubris*
Brachythecium austrosalebrosum	*Lecania brialmontii*
Bryum archangelicum, B. argenteum, B. boreale, B. pseudotriquetrum	*Lecanora polytropa, L. skottsbergii*
Ceratodon purpureus	*Leptogium puberulum*
Chorisodontium aciphyllum	*Massalongia carnosa*
Dicranoweisia crispula, D. dryptodontoides	*Mastodia tessellata*
Grimmia reflexidens	*Melanelia ushuaiensis*
Hymenoloma grimmiaceum	*Ochrolechia frigida*
Kiaeria pumila	*Parmelia cunninghamii, P. saxatilis*
Platydictya jungermannioides	*Physcia caesia, P. dubia*
Pohlia cruda, P. nutans	*Physconia muscigena*
Polytrichastrum alpinum	*Pseudephebe minuscula, P. pubescens*
Polytrichum juniperinum, P.piliferum, P. strictum	*Psoroma cinnamomeum, P. hypnorum*
Sanionia uncinata	*Rhizoplaca aspidophora*
Sarconeurum glaciale	*Rinodina turfacea*
Schistidium antarctici, S. urnulaceum	*Sphaerophorus globosus*
Syntrichia magellanica	*Stereocaulon alpinum*
Syntrichia princeps, S. sarconeurum	*Umbilicaria antarctica, U. decussata*
Warnstorfia laculosa	*Usnea antarctica, U. aurantiaco-atra*
	Xanthoria candelaria
	Xanthoria elegans

Notes: The number of species recorded within the Area = 83

Table C.2: Bird and mammal species recorded within the Area (Parmelee et al. 1977; W. Fraser pers. comm. 2007).

Common name	Scientific name	Status within Area
Birds		
chinstrap penguin	*Pygoscelis antarctica*	Confirmed breeder
Adélie penguin	*Pygoscelis adeliae*	Confirmed breeder
gentoo penguin	*Pygoscelis papua*	Confirmed breeder
southern giant petrel	*Macronectes giganteus*	Confirmed breeder
blue-eyed shag	*Phalacrocorax* [atriceps] *bransfieldensis*	Confirmed breeder
kelp gull	*Larus dominicanus*	Confirmed breeder
Wilson's storm petrel	*Oceanites oceanites*	Confirmed breeder
sheathbill	*Chionis alba*	Confirmed breeder
south polar skua	*Catharacta maccormicki*	Confirmed breeder
brown skua	*Catharacta loennbergi*	Confirmed breeder
Antarctic tern	*Sterna vittata*	Confirmed breeder
southern fulmar	*Fulmarus glacialoides*	Frequent visitor
Antarctic petrel	*Thalassoica antarctica*	Frequent visitor
cape petrel	*Daption capense*	Frequent visitor
snow petrel	*Pagadroma nivea*	Frequent visitor
emperor penguin	*Aptenodytes forsteri*	Occasional visitor
king penguin	*A. patagonicus*	Occasional visitor
macaroni penguin	*Eudyptes chrysolophus*	Occasional visitor
rockhopper penguin	*Eudyptes chrysocome*	Occasional visitor
Magellanic penguin	*Spheniscus magellanicus*	Occasional visitor
black-browed albatross	*Diomedea melanophris*	Occasional visitor
gray-headed albatross	*D. chrystosoma*	Occasional visitor
northern giant petrel	*Macronectes halli*	Occasional visitor
black-bellied storm petrel	*Fregetta tropica*	Occasional visitor
red phalarope	*Phalaropus fulicarius*	Occasional visitor
South Georgia pintails	*Anas georgica*	Occasional visitor
black-necked swan	*Cygnus melancoryphus*	Occasional visitor
sandpiper	(sp. unknown)	Occasional visitor
cattle egret	*Bubulcus ibis*	Occasional visitor
Arctic tern	*Sterna paradisaea*	Occasional visitor
Seals (no data on breeding or numbers available)		
Weddell seal	*Leptonychotes weddellii*	Frequent visitor
southern elephant seal	*Mirounga leonina*	Frequent visitor
crabeater seal	*Lobodon carcinophagus*	Frequent visitor
leopard seal	*Leptonyx hydrurga*	Frequent visitor
Antarctic fur seals	*Arctocephalus gazella*	Frequent visitor
Whales and dolphins (no data on breeding or numbers available)		
fin whale	*Balaenoptera physalus*	Observed
humpback whale	*Megaptera novaeangliae*	Observed
sei whale	*Balaenoptera borealis*	Observed
southern right whale	*Eubalaena australis*	Observed
minke whale	*Balaenoptera bonaerensis*	Observed
killer whale	*Orcinus orca*	Observed
hourglass dolphins	*Lagenorhynchus cruciger*	Observed

Appendix D: References

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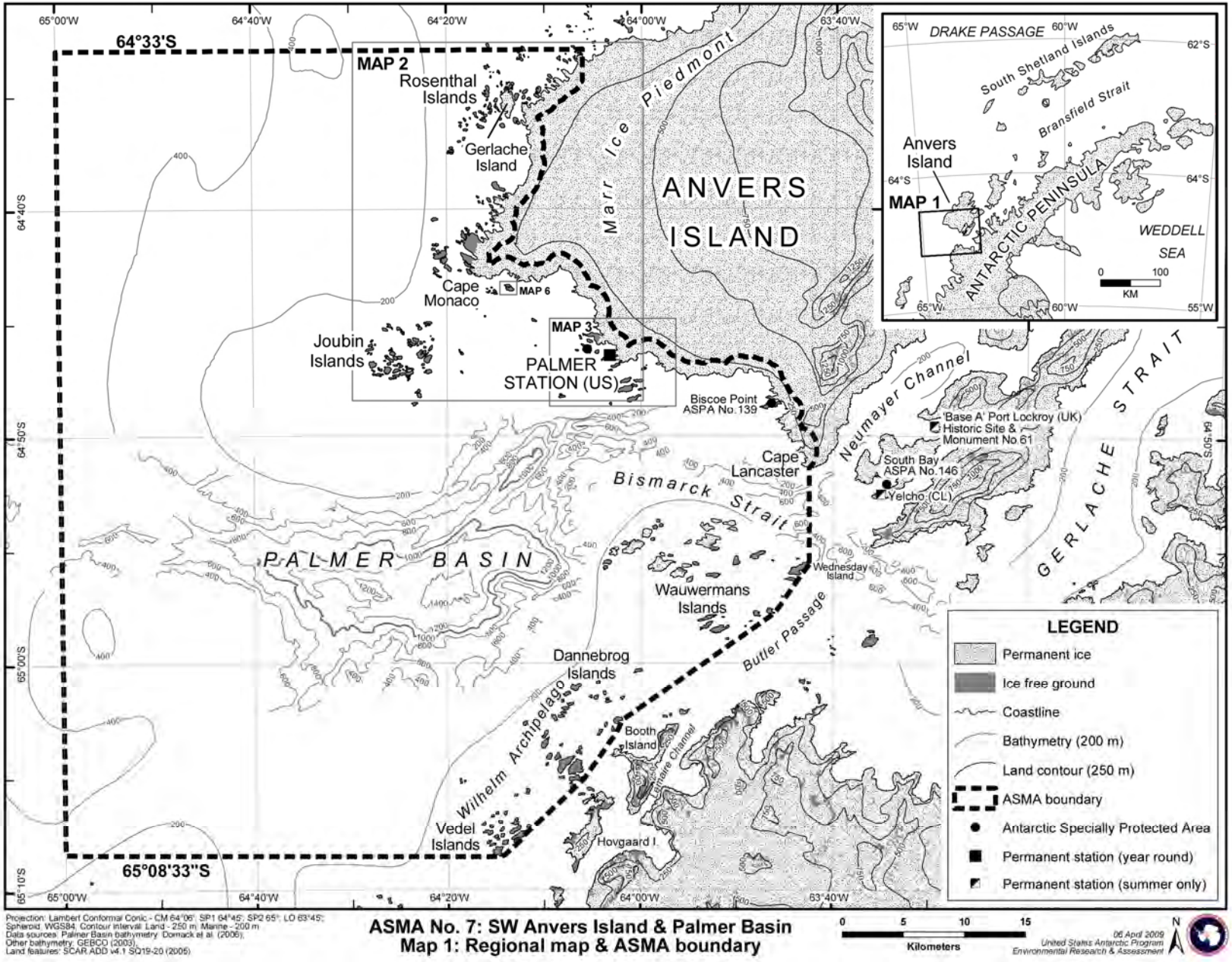
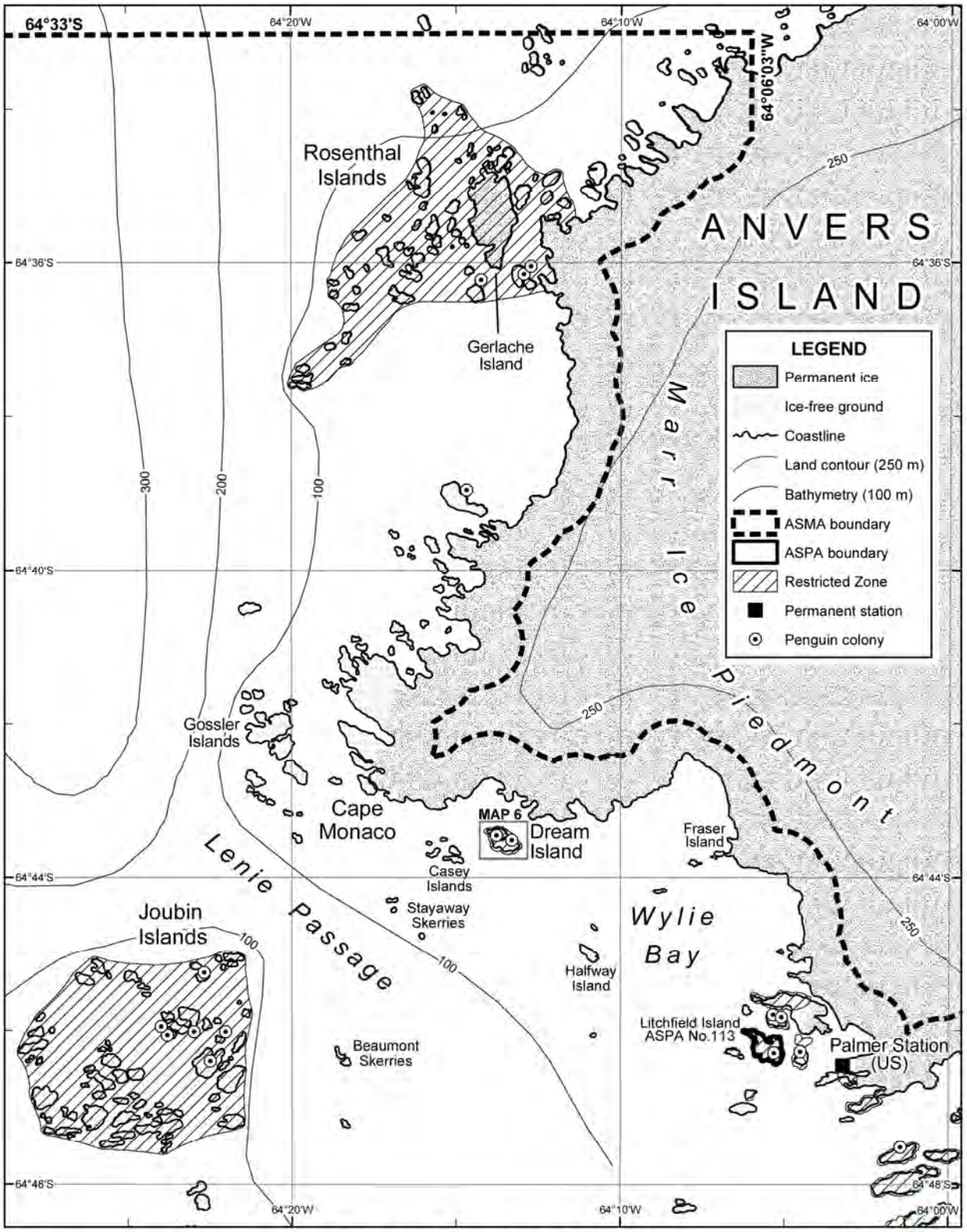

65°00'W
64°40'W
64°20'W
64°00'W
63°40'W
64°33'S
65°08'33"S
64°40'S
64°50'S
65°00'S
65°10'S
MAP 2
Rosenthal Islands
Gerlache Island
Marr Ice Piedmont
ANVERS ISLAND
Cape Monaco
MAP 6
MAP 3
Joubin Islands
PALMER STATION (US)
Biscoe Point ASPA No.139
Cape Lancaster
Bismarck Strait
PALMER BASIN
Wauwermans Islands
Dannebrog Islands
Wilhelm Archipelago
Vedel Islands
Booth Island
Lemaire Channel
Hovgaard I.
Butler Passage
Wednesday Island
Neumayer Channel
'Base A' Port Lockroy (UK) Historic Site & Monument No.61
South Bay ASPA No.146
Yelcho (CL)
GERLACHE STRAIT
DRAKE PASSAGE
South Shetland Islands
Bransfield Strait
Anvers Island
MAP 1
ANTARCTIC PENINSULA
WEDDELL SEA
0 100 KM
LEGEND
Permanent ice
Ice free ground
Coastline
Bathymetry (200 m)
Land contour (250 m)
ASMA boundary
Antarctic Specially Protected Area
Permanent station (year round)
Permanent station (summer only)
Projection: Lambert Conformal Conic - CM 64°06'; SP1 64°45'; SP2 65°; LO 63°45';
Spheroid: WGS84. Contour interval: Land - 250 m; Marine - 200 m
Data sources: Palmer Basin bathymetry: Domack et al. (2006);
Other bathymetry: GEBCO (2003);
Land features: SCAR ADD v4.1 SQ19-20 (2005)
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 1: Regional map & ASMA boundary
0 5 10 15
Kilometers
N
06 April 2009
United States Antarctic Program
Environmental Research & Assessment



Projection: Lambert Conformal Conic
Central Meridian: 64°15'W;
Standard parallels: 64°38'S, 64°44'S; Spheroid: WGS84
Contour interval: Land - 250 m; Marine - 100 m
Data sources: Base map - SCAR ADD v4.1 (2005) (horizontally adjusted to USGS orthophotos along SW Anvers Island coastline. Ice coastline in Wylie Bay from BAS SQ19-20 3&4 (2005)); Bathymetry - GEBCO (2003); Penguin colonies - Harris (2006)

ASMA No. 7: SW Anvers Island & Palmer Basin
Map 2: SW Anvers Island Restricted Zones
Rosenthal, Joubin & Dream islands

0 1 2 3 4 5
Kilometers

N

11 December 2008
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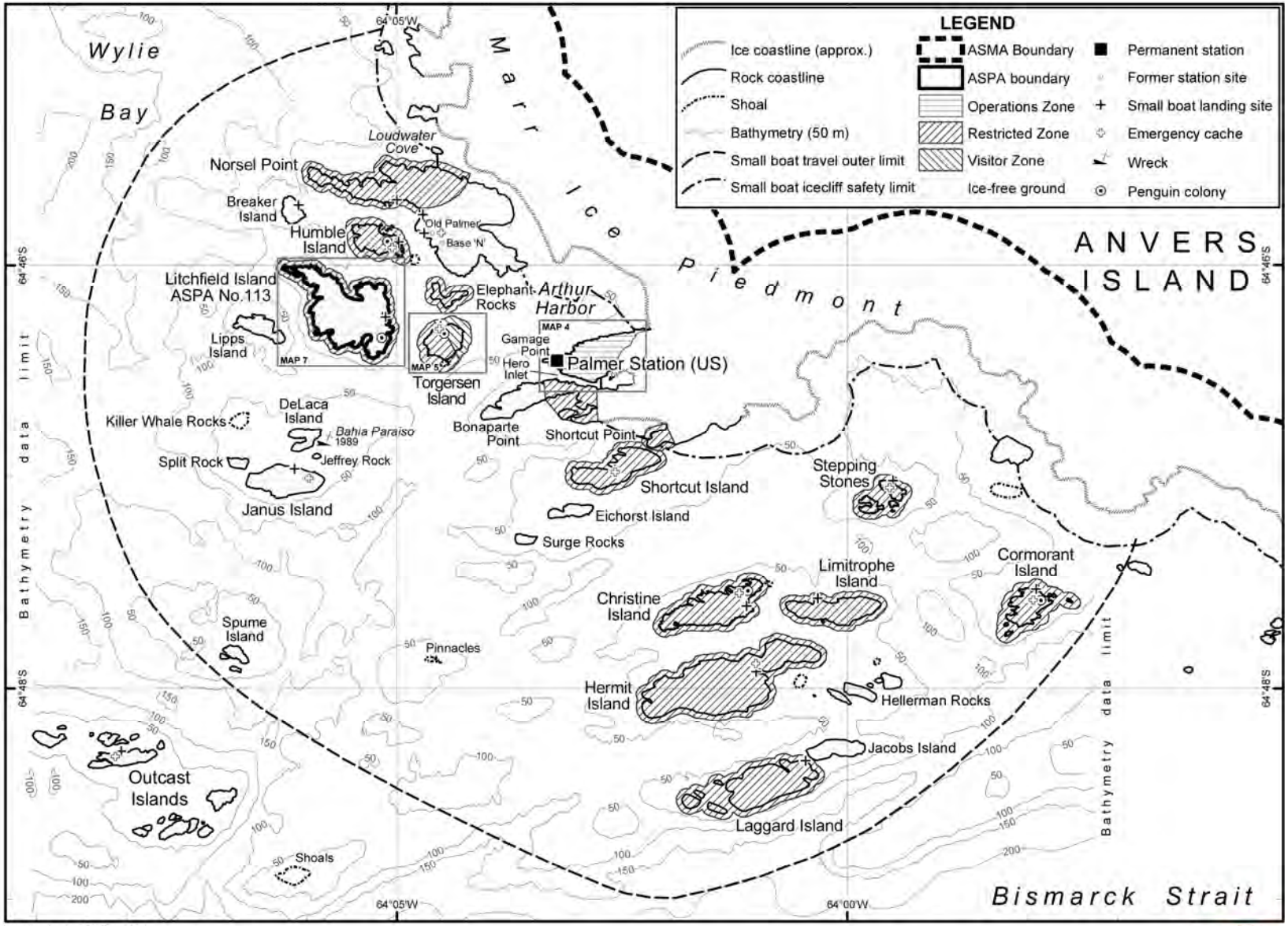

Projection: Lambert Conformal Conic
Central Meridian: 64°02'W; Standard parallels: 64°46'S, 64°48'S;
Spheroid: WGS84; Contour interval: Marine - 50 m;
Data sources: Coast: USGS orthophotos, RPSC Survey & CAD (Gamage Point) & GPS boat surveys (2004); TM3210 24v rectified image (BAS/USGS 1998); Asper & Gallagher PRIMO bathymetric survey (2004); BAS SQ19-20 3&4 (2005) & SCAR ADD 4.1 (horizontally adjusted); Bathymetric contours derived from Asper & Gallagher PRIMO survey data.

ASMA No. 7: SW Anvers Island & Palmer Basin

Map 3: Arthur Harbor & Palmer Station access

0 500 1000 1500 2000
Meters

N

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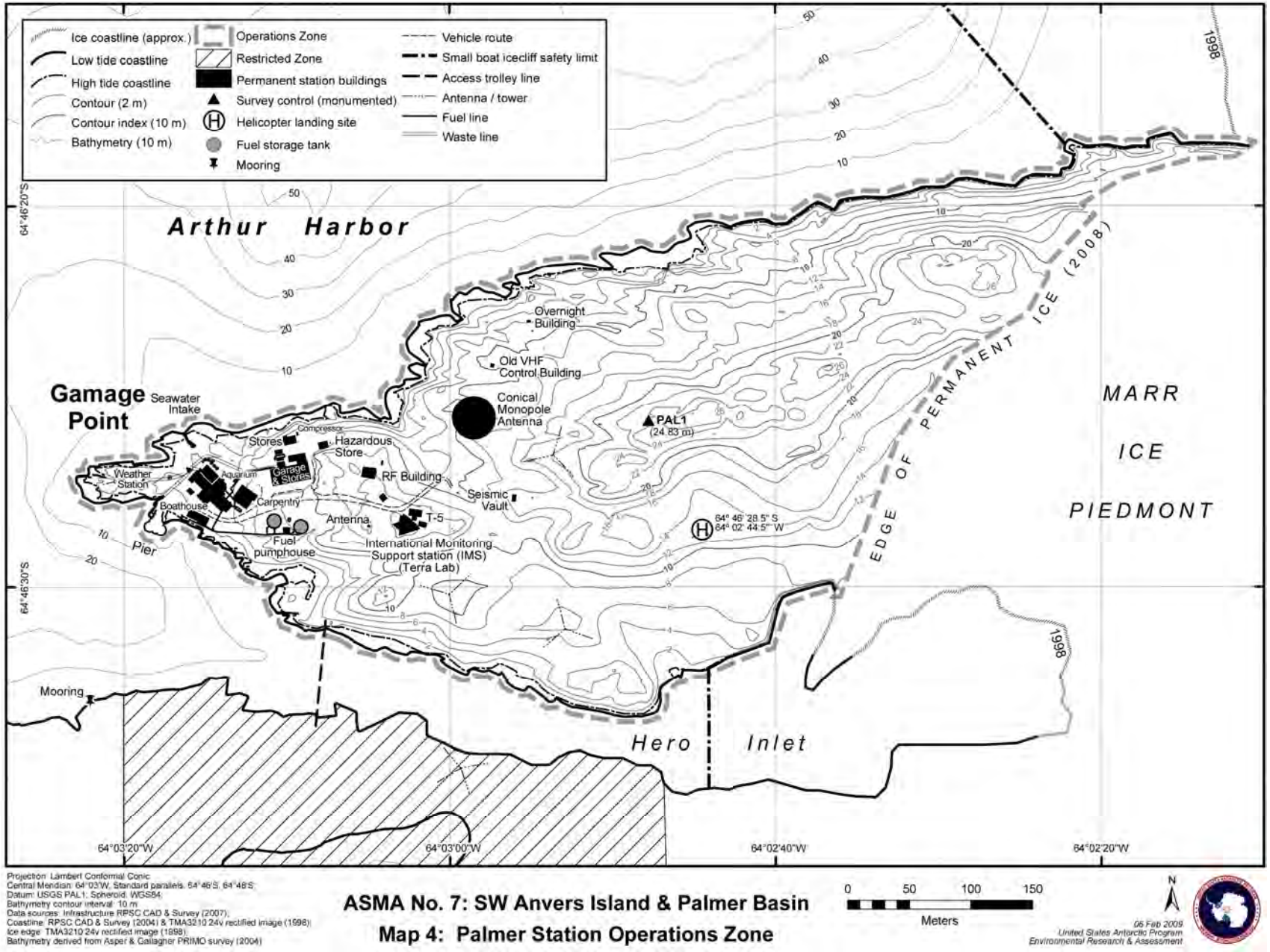

Projection: Lambert Conformal Conic
Central Meridian: 64°03'W, Standard parallels: 64°46'S, 64°48'S
Datum: USGS PAL1; Spheroid: WGS84.
Bathymetry contour interval: 10 m
Data sources: Infrastructure RPSC CAD & Survey (2007);
Coastline: RPSC CAD & Survey (2004) & TMA3210 24v rectified image (1998)
Ice edge: TMA3210 24v rectified image (1998)
Bathymetry derived from Asper & Gallagher PRIMO survey (2004)

ASMA No. 7: SW Anvers Island & Palmer Basin

Map 4: Palmer Station Operations Zone

0 50 100 150
Meters

N

06 Feb 2008
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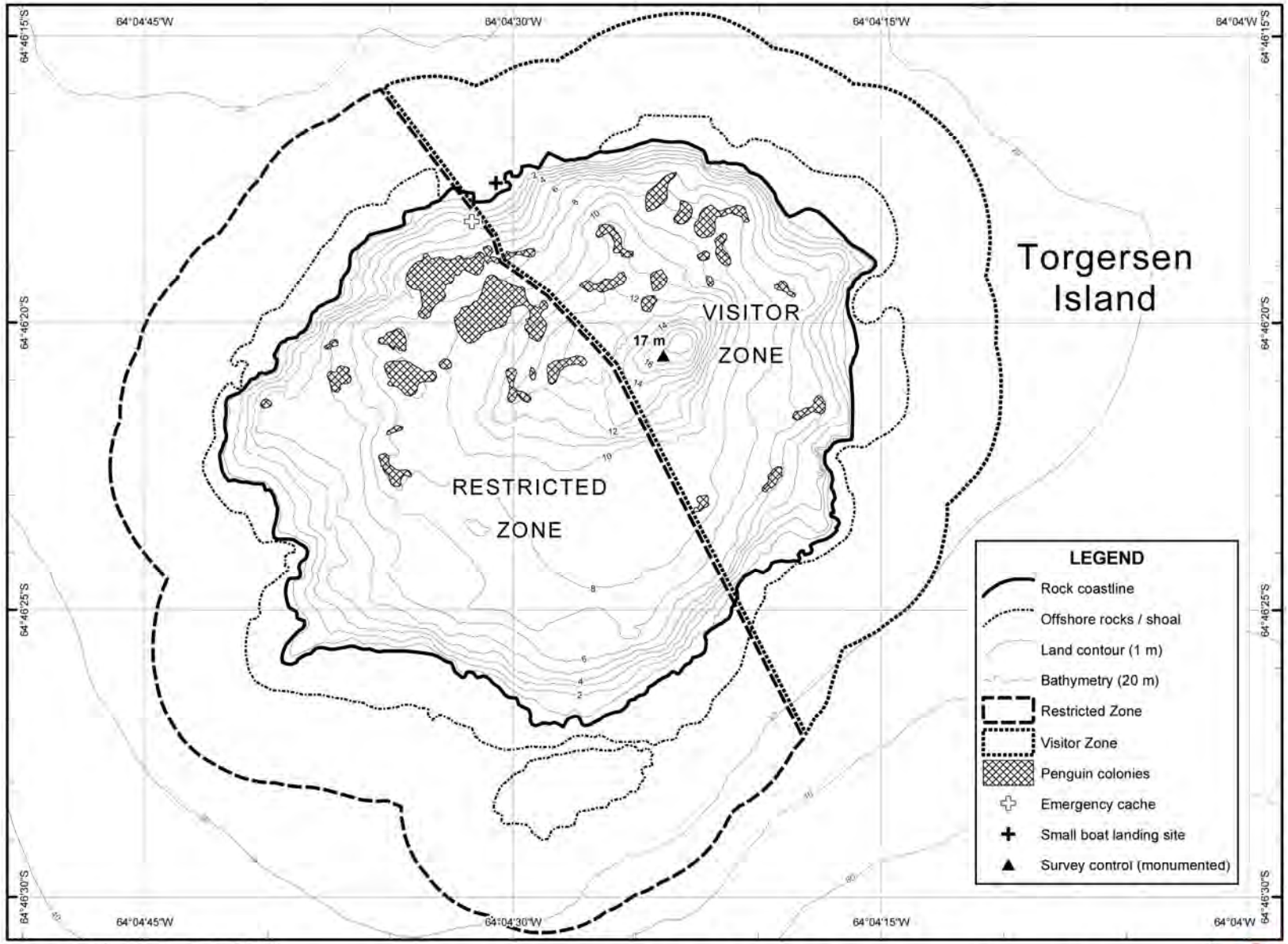
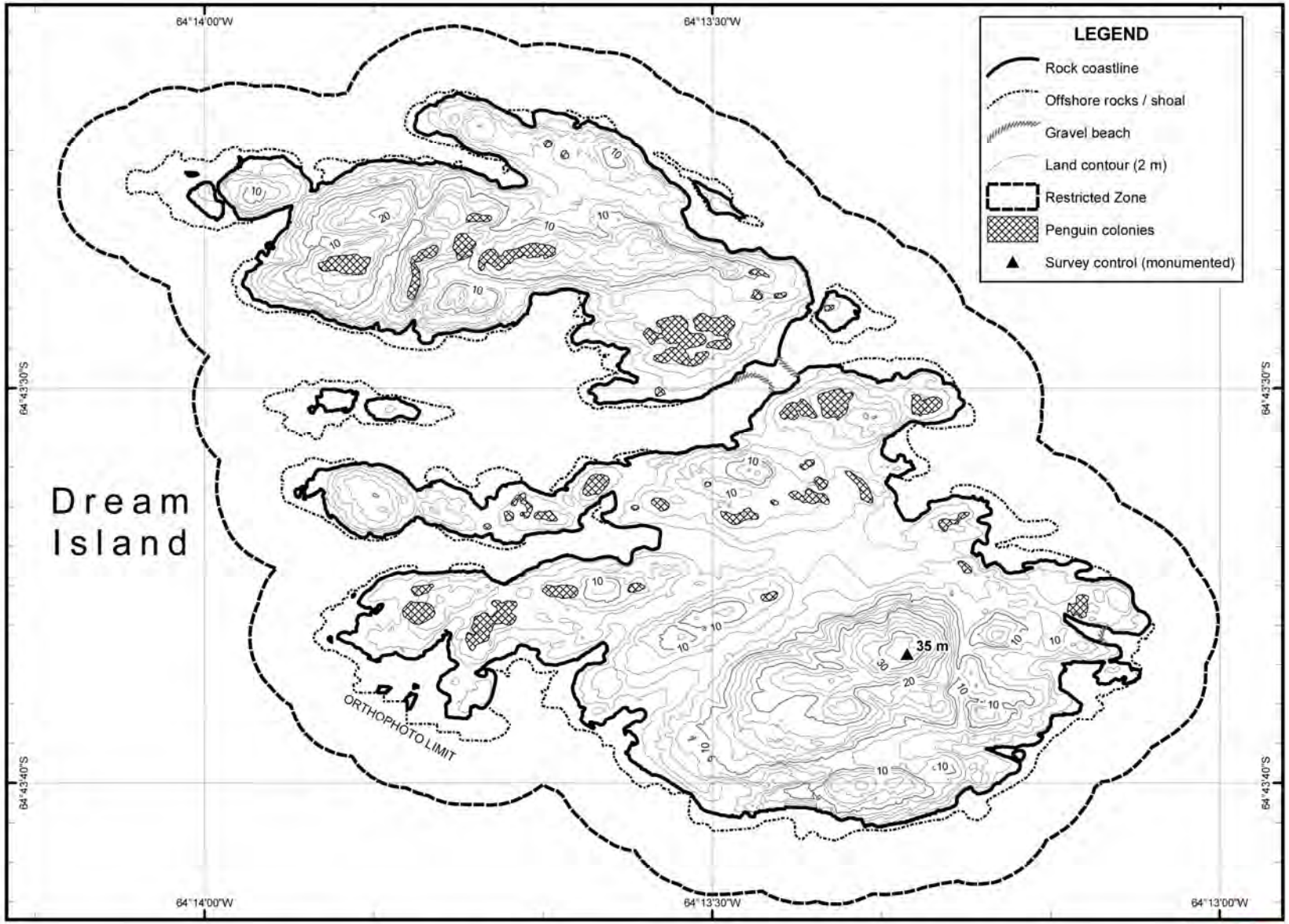
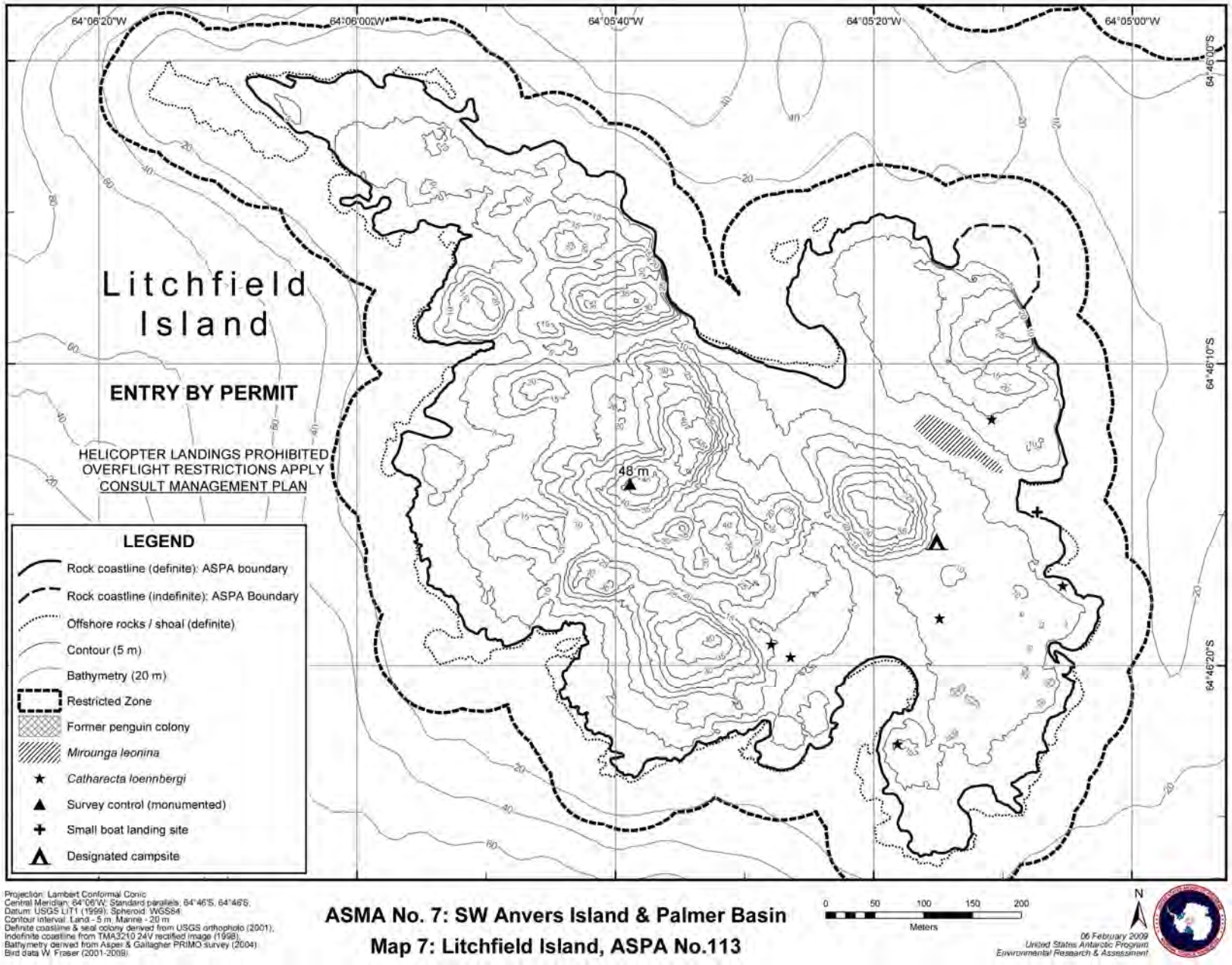
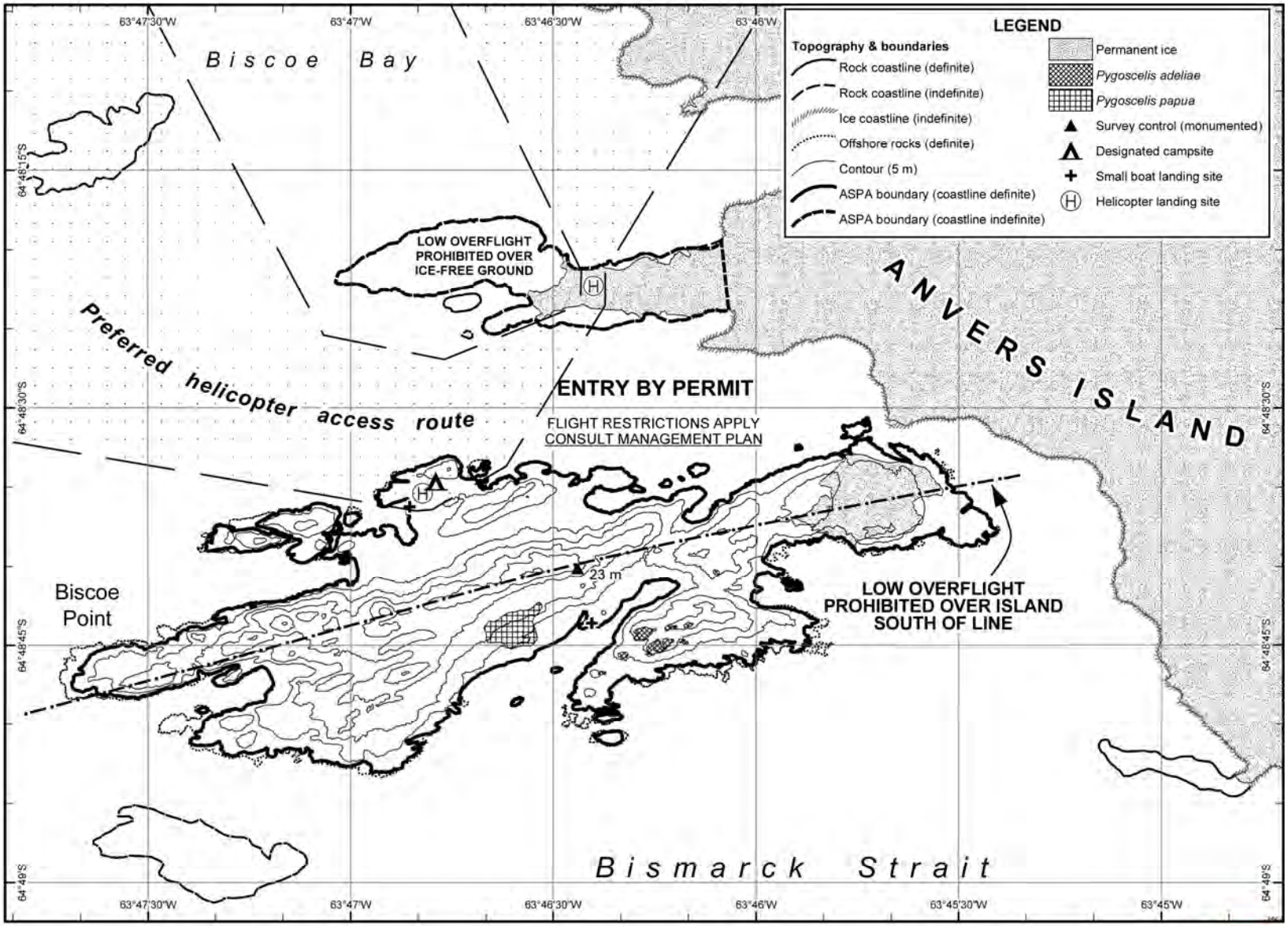

64°04'45"W
64°04'30"W
64°04'15"W
64°04'W
64°46'15"S
64°46'20"S
64°46'25"S
64°46'30"S
Torgersen Island
VISITOR ZONE
RESTRICTED ZONE
17 m
LEGEND
Rock coastline
Offshore rocks / shoal
Land contour (1 m)
Bathymetry (20 m)
Restricted Zone
Visitor Zone
Penguin colonies
Emergency cache
Small boat landing site
Survey control (monumented)
Projection: Lambert Conformal Conic; Central Meridian: 64°04'30"W; Standard parallels: 64°46'S, 64°48'S; Datum: USGS TDR1; Spheroid: WGS84; Contour interval: Land - 1 m, Marine - 20 m
Data sources: Coastline & penguin colonies derived from USGS orthophoto (2001) & Patterson (2001); Bathymetry derived from Asper & Gallagher PRIMO survey (2004)
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 5: Torgersen Island Zones
0
50
100
Meters
N
11 December 2008
United States Antarctic Program
Environmental Research & Assessment


64°14'00"W
64°13'30"W
64°13'00"W
64°43'30"S
64°43'40"S
LEGEND
Rock coastline
Offshore rocks / shoal
Gravel beach
Land contour (2 m)
Restricted Zone
Penguin colonies
Survey control (monumented)
Dream Island
35 m
ORTHOPHOTO LIMIT
Projection: Lambert Conformal Conic
Central Meridian: 64°13'30"W; Standard parallels: 64°43'S, 64°44'S
Datum: USGS.DRE1 (1999); Spheroid: WGS84.
Contour interval: 2 m
Data sources:
Coastline & penguin colonies derived from USGS orthophoto (2001).
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 6: Dream Island Restricted Zone
0 50 100 150
Meters
N
11 December 2008
United States Antarctic Program
Environmental Research & Assessment


64°06'20"W
64°06'00"W
64°05'40"W
64°05'20"W
64°05'00"W
64°46'00"S
64°46'10"S
64°46'20"S
Litchfield Island
ENTRY BY PERMIT
HELICOPTER LANDINGS PROHIBITED
OVERFLIGHT RESTRICTIONS APPLY
CONSULT MANAGEMENT PLAN
48 m
LEGEND
Rock coastline (definite): ASPA boundary
Rock coastline (indefinite): ASPA Boundary
Offshore rocks / shoal (definite)
Contour (5 m)
Bathymetry (20 m)
Restricted Zone
Former penguin colony
Mirounga leonina
Catharacta loennbergi
Survey control (monumented)
Small boat landing site
Designated campsite
Projection: Lambert Conformal Conic
Central Meridian: 64°06'W; Standard parallels: 64°46'S, 64°46'S.
Datum: USGS LIT1 (1999); Spheroid: WGS84
Contour interval: Land - 5 m; Marine - 20 m
Definite coastline & seal colony derived from USGS orthophoto (2001);
Indefinite coastline from TMA3210 24V rectified image (1998);
Bathymetry derived from Aspen & Gallagher PRIMO survey (2004)
Bird data W. Fraser (2001-2008)
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 7: Litchfield Island, ASPA No.113
0 50 100 150 200
Meters
N
06 February 2009
United States Antarctic Program
Environmental Research & Assessment



Projection: Lambert Conformal Conic
Central Meridian: 63°46'W; Standard parallels: 64°48'S, 64°50'S
Datum: USGS BIS1 (1999); Spheroid: WGS84; Contour interval: Land - 5 m
Data sources: Map updated from ASPA management plan (2004).
Definite coastline derived from USGS orthophoto (2001).
Indefinite coastline derived from TMA3208 006V rectified image (1998).
Penguin colonies & other features from orthophoto & GPS survey (ERA 2001).

ASMA No. 7: SW Anvers Island & Palmer Basin

Map 8: Biscoe Point, ASPA No.139

0 100 200 300 400
Meters

N

11 December 2006
United States Antarctic Program
Environmental Research & Assessment

Management Plan For
Antarctic Specially Protected Area No. 104

SABRINA ISLAND, NORTHERN ROSS SEA, ANTARCTICA

Introduction

Sabrina Island, in the Balleny Archipelago, was originally designated as SPA No. 4 in Recommendation IV-4 (1966) on the grounds that "The Balleny Islands, as the most northerly Antarctic land in the Ross Sea region, support fauna and flora which reflect many circumpolar distributions at this latitude and that Sabrina Island in particular provides a representative sample of such fauna and flora."

1. Description of values to be protected

Sabrina Island has outstanding environmental and scientific value. It is a representative sample of the Balleny Islands which is the only oceanic archipelago located within the main Antarctic Coastal Current. (Peter I Island, some 4000km away, is the only other oceanic island in the Current). As such, they provide important resting and breeding habitat for seabird and seal species (see Tables 1 and 2), and are significant in circumpolar distributions of a variety of species. Being isolated and prone to difficult weather and ice conditions, the Islands have had very little human disturbance.

The Islands are the only known breeding site for chinstrap penguins (*Pygoscelis antarctica*) between Bouvetoya and Peter I Islands (a span of 264° longitude). The chinstrap nests occur within Adélie penguin (*Pygoscelis adeliae*) colonies. Adélies and chinstraps have very different breeding ranges and there are few sites where the species coexist. Sabrina Island's Adélie colony is of particular importance because it is the largest in the archipelago (and has the majority of the chinstrap pairs), and because it is growing very rapidly.

2. Aims and Objectives

Management of Sabrina Island aims to:

- Protect a representative Antarctic oceanic island from unnecessary human disturbance and exposure to biological introductions;
- avoid disturbance to a chinstrap penguin colony which is anomalous in terms of species distribution; and
- allow scientific research to better understand the Island's ecosystem.

3. Management activities

The following measures shall be taken to protect the values of the Area:

- Expeditions traveling in the vicinity of the Balleny Islands should carry a copy of this Management Plan.
- Parties should coordinate to ensure the Area and the need for permits for entry is noted on charts of the region.
- Given the difficulties of access, erection of signage does not currently seem warranted, however this should be reviewed if visits to the Area increase.

4. Period of Designation

Designated for an indefinite period.

5. Description of the Area

5(i) Geographical coordinates, boundaries and natural features of the Area

Location and general description:
The Balleny Islands are located around 325km north of the Pennell Coast, Northern Victoria Land. The Islands are the exposed portion of a volcanic seamount chain. There are three main islands and a number of smaller islands and exposed rocks. Sabrina Island is located at 66°55S, 163°19E, three kilometres off the southern end of Buckle Island (the central of the main islands). It is less than 2km across and reaches an estimated height of 180m above sea level. A volcanic plug approximately 80m high, named the Monolith, is attached to the southern end of Sabrina Island by a boulder spit. A small islet lies to the north east of Sabrina, commonly known as Chinstrap Islet.

Boundaries:
The ASPA comprises all of Sabrina Island above sea level, including the Monolith, and Chinstrap Islet.

Natural Features:
Approximately a quarter of the island is covered in permanent snow and ice, and an ice foot meets the sea at the northern end. A steep ridge runs across the island, with scoria slopes to the east and south. Sheer cliffs form the majority of the island's coast except for a cobble beach in the south west.

The scoria slopes to the east of the central ridge on the Island are occupied by Adélie and chinstrap penguin nests. The birds access their nesting sites via the beach. Sabrina has the largest of the Balleny Island penguin colonies with approximately 3770 Adélie pairs recorded in 2000 and 202 chinstrap adults and 109 chicks in 2006. Only 24 chinstrap nests were observed on Sabrina in 2000, suggesting a rapidly increasing population. Chinstrap Islet, just to the south east of Sabrina had 2298 penguin pairs in 2000, with approximately 10 chinstrap pairs recorded on the Islet in 1965 and 1984.

Cape pigeons were seen nesting on Sabrina Island in 2006 and also on the southern side of the Monolith in 1965 (although this has not been confirmed by more recent expeditions). Individual macaroni penguins have been sighted on Sabrina Island (1964, possible sighting 1973).

Various species of algae (including *Myxopycophyta, Xanthophyceae* (*Tribonema* spp.*)* and *Chlorophycophyta* (*prasiola* spp.*)*) have been recorded on Sabrina. Chromogenic (brightyellow) bacteria, yeasts, 14 species of *filamentous fungi*, two species of *thermophilous fungi* (*Aspergillus fumigatus* and *Chaetomium gracile*), mites (*Stereotydeus mollis, Nanorchestes antarcticus, Coccorhgidia* spp.) and nematodes have also been reported. Rock encrusting lichens, mainly *Caloplaca* or *Xanthoria* species occur on top of the main ridge.

5(ii) Access to the Area
Landings by small boat or helicopter can be made on the beach to the south west of the Island, 66°55.166'S, 163°18.599'E (see figure 1). All air movements in the vicinity of the Island should avoid disturbance to the penguin colonies as much as possible. Movement within the Area shall be by foot only.

5(iii) Location of structures within or adjacent to the Area
Although some records suggest shelters have been erected on Borradaile Island and Sabrina Island, recent visits have not identified any existing structures in or adjacent to the Area.

5 (iv) Location of other Protected Areas within close proximity
The nearest Antarctic Specially Protected Area is No. 106, Cape Hallett, approximately 675km to the south east.

6. Special Zones within the Area
There are no prohibited, restricted or specially managed zones within the Area.

7. Maps and photographs

Map A: Location of ASPA 104, Sabrina Island. Chart NZ14912 (INT9012) sourced from Land Information New Zealand, Crown Copyright Reserved. Scale: 1:300000. Projection: Mercator. Central Meridian: 161°20'00". Standard Parallel: 66°45'00".

Figure 1: Sketch Map of Sabrina Island. Reproduced with permission from Macdonald, JA., Barton, Kerry J., Metcalf, Peter. 2002. Chinstrap penguins (*Pygoscelis antarctica*) nesting on Sabrina Islet, Balleny Islands, Antarctica. *Polar Biology* 25:443-447.

Figure 2: Aerial view of penguin breeding areas, Sabrina Island. Photographer: Kerry Barton, Landcare Research New Zealand, December 2000.

Figure 3: Overview of Sabrina and neighbouring islands. Photographer: Kerry Barton, Landcare Research New Zealand, December 2000.

Figure 4: Landing beach at south west of Sabrina Island and the Monolith. Photographer: Rebecca McLeod, University of Otago, 2006.

Figure 5: Adélie and chinstrap penguins on south ridge of Sabrina Island, looking south to the Monolith. Photographer: Rebecca McLeod, University of Otago, 2006.

8. Supporting documentation

The following documents were used in preparation of this management plan:

Bradford-Grieve, Janet and Frenwick, Graham. November 2001. *A Review of the current knowledge describing the biodiversity of the Balleny Islands: Final Research Report for Ministry of Fisheries Research Projects ZBD2000/01 Objective 1 (in part).* NIWA, New Zealand.

de Lange W., Bell R. 1998. Tsunami risk from the southern flank: Balleny Islands earthquake. *Water and atmosphere*. 6(3), pp 13-15.

Macdonald, JA., Barton, Kerry J., Metcalf, Peter. 2002. Chinstrap penguins (*Pygoscelis antarctica*) nesting on Sabrina Islet, Balleny Islands, Antarctica. *Polar Biology* 25:443-447

Robertson,CJR, Gilbert, JR, Erickson, AW. 1980. Birds and Seals of the Balleny Islands, Antarctica. *National Museum of New Zealand Records* 1(16).pp 271-279

Sharp, Ben R. 2006. *Preliminary report from New Zealand research voyages to the Balleny Islands in the Ross Sea region, Antarctica, during January-March 2006.* Ministry of Fisheries, Wellington, New Zealand.

Smith, Franz. 2006. *Form 3: Format and Content of Voyage Reports: Balleny Islands Ecology Research Voyage.*

Varian, SJ. 2005. *A summary of the values of the Balleny Islands, Antarctica.* Ministry of Fisheries, Wellington, New Zealand.

9. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by an appropriate national authority.

Conditions for issuing a permit to enter the Area are that:

- it is issued only for a compelling scientific purpose which cannot be served elsewhere, or for essential management purposes;
- the actions permitted will not jeopardize the natural ecological system in the Area;
- the actions permitted are in accordance with this Management Plan;
- the Permit, or a copy, must be carried within the Area;
- a report is supplied to the authority issuing the Permit; and
- the Permit is issued for a stated period.

9(i) Access to and movement within the Area

Landings by small boat or helicopter can be made on the beach to the south west of the Island, 66°55.166'S, 163°18.599'E (see figure 1). All air movements in the vicinity of the Island should avoid disturbance to the penguin colonies as much as possible. Movement within the Area shall be by foot only.

9(ii) Activities which may be conducted within the Area

Only scientific research or essential management activities (such as inspection, monitoring or review), in accordance with a Permit, may be conducted within the Area.

9(iii) Installation, modification or removal of structures

No structures are to be erected in the Area, or scientific equipment installed, except for essential scientific or management activities, as specified in the Permit. Any equipment

installed should be labeled with name and country of the principal investigator and year of installation. Any such equipment should be made of materials which can withstand the environmental conditions and designed so as to pose no entrapment risk for wildlife. Removal of equipment once its purpose has been served shall be a condition of the Permit.

9(iv) Location of field camps
Field camps may be established if necessary to support permitted scientific or management activity. The camp location should be selected to minimise disturbance to wildlife as much as possible and care should be taken to secure all equipment.

9(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.

All sampling equipment, footwear, outer clothing, backpacks and other equipment used or brought into the Area shall be thoroughly cleaned before entering the Area. Scrubbing footwear in a disinfectant footbath before each landing is recommended.

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

No herbicides or pesticides shall be brought into the Area. Any other chemicals, which may be introduced for compelling scientific, management or safety purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted.

Fuel, food and other materials are not to be deposited in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted. All such materials introduced are to be removed when no longer required. Permanent depots are not permitted.

Spill response materials appropriate to the volume of fuels or other hazardous liquids taken into the Area should be carried. Any spills should be immediately cleaned up, provided the response has less environmental impact than the spill itself.

9(vi) Taking or harmful interference with native flora and fauna
Taking or harmful interference with native flora and fauna is prohibited, except in accordance with a Permit.

Where animal taking or harmful interference is involved this should be in accordance with the SCAR Code of Conduct for Use of Animals for Scientific Purposes in Antarctica, as a minimum standard.

9(vii) Collection and removal of anything not brought into the Area by the Permit holder
Material may be collected or removed from the Area only in accordance with a Permit. Material of human origin not introduced in accordance with 9(iii) may be removed, where doing so causes less environmental impact than leaving it in place. Any such material should be noted in the visit report.

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

9(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 carry out environmental monitoring and site inspection, which may involve the collection of small samples for analysis or audit, to erect or maintain signposts, or for other management measures.

Research within the Area has been very limited and any new information collected should be incorporated into future reviews of the Management Plan.

9(x) Requirements for reports

The Principal Permit Holder for each issued Permit shall submit a report of activities conducted in the Area including, as appropriate, the information specified in the Visit Report form suggested by SCAR. This report shall be submitted to the authority named in the Permit as soon as practicable, but not later than 6 months after the visit has taken place. Parties should retain such reports indefinitely, making them available to interested Parties (preferably publicly accessible) and including summary information in the Annual Exchange of Information.

Spills of any size should be reported to the authority named in the permit, using the COMNAP Spill Report Form as appropriate.

Map data currently available for the Area is very limited. New Zealand, as the Party responsible for review of this Management Plan, would therefore appreciate copies of data and images which could assist future management of the Area.

Table 1: Bird species recorded from the Balleny Islands
The table lists sightings recorded in expedition reports and scientific publications. Species indicated as breeding have been confirmed in recent expeditions (i.e. since 2000), those marked with S breed on Sabrina Island itself.

Common name	Species	Breeding
Adélie penguin	*Pygoscelis adeliae*	✓ S
Antarctic fulmar	*Fulmarus glacialoides*	✓
Antarctic petrel	*Thalassoica antarctica*	✓
Antarctic prion	*Pachyptila desolata*	
Antarctic tern	*Sterna paradisea*	
Black browed mollymawk	*Diomedea melanophrys*	
Cape pigeon	*Daption capense*	✓ S
Chinstrap penguin	*Pygoscelis antarctica*	✓ S
Grey-headed mollymawk	*Diomedea chrysostoma*	
Light-mantled sooty albatross	*Phoebetria palpebrata*	
Macaroni penguin	*Eudyptes chrysolphus*	
Snow petrel	*Pagodroma nivea*	✓
Sooty shearwater	*Puffinus griseus*	
Southern giant petrel	*Macronectes giganteus*	
Southern skua	*Catharacta lonnbergi*	
Wandering albatross	*Diomedea exulans*	
White chinned petrel	*Procellaria aequinoctialis*	
Wilson's storm petrel	*Oceanites oceanicus oceanicus*	

Table 2: Seal species recorded from the Balleny Islands
The table lists sightings recorded in expedition reports and scientific publications. Breeding has not been confirmed for any species.

Common name	Species
Crabeater seal	*Lobodon carcinophagus*
Elephant seal	*Mirounga leonina*
Leopard seal	*Hydrurga leptonyx*
Weddell seal	*Leptonychotes weddellii*

Map A - Location of Antarctic Specially Protected Area 104 Sabrina Island

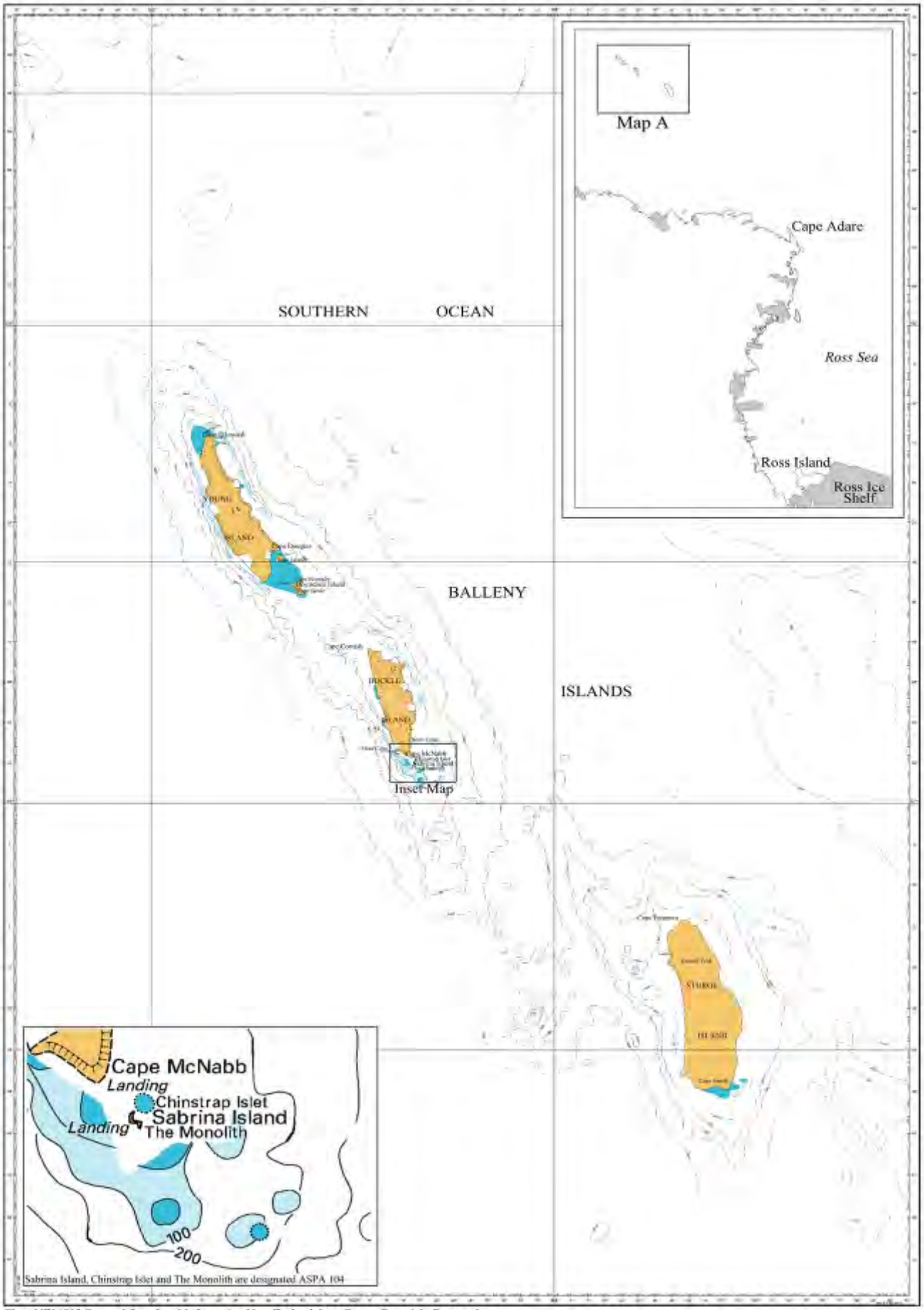
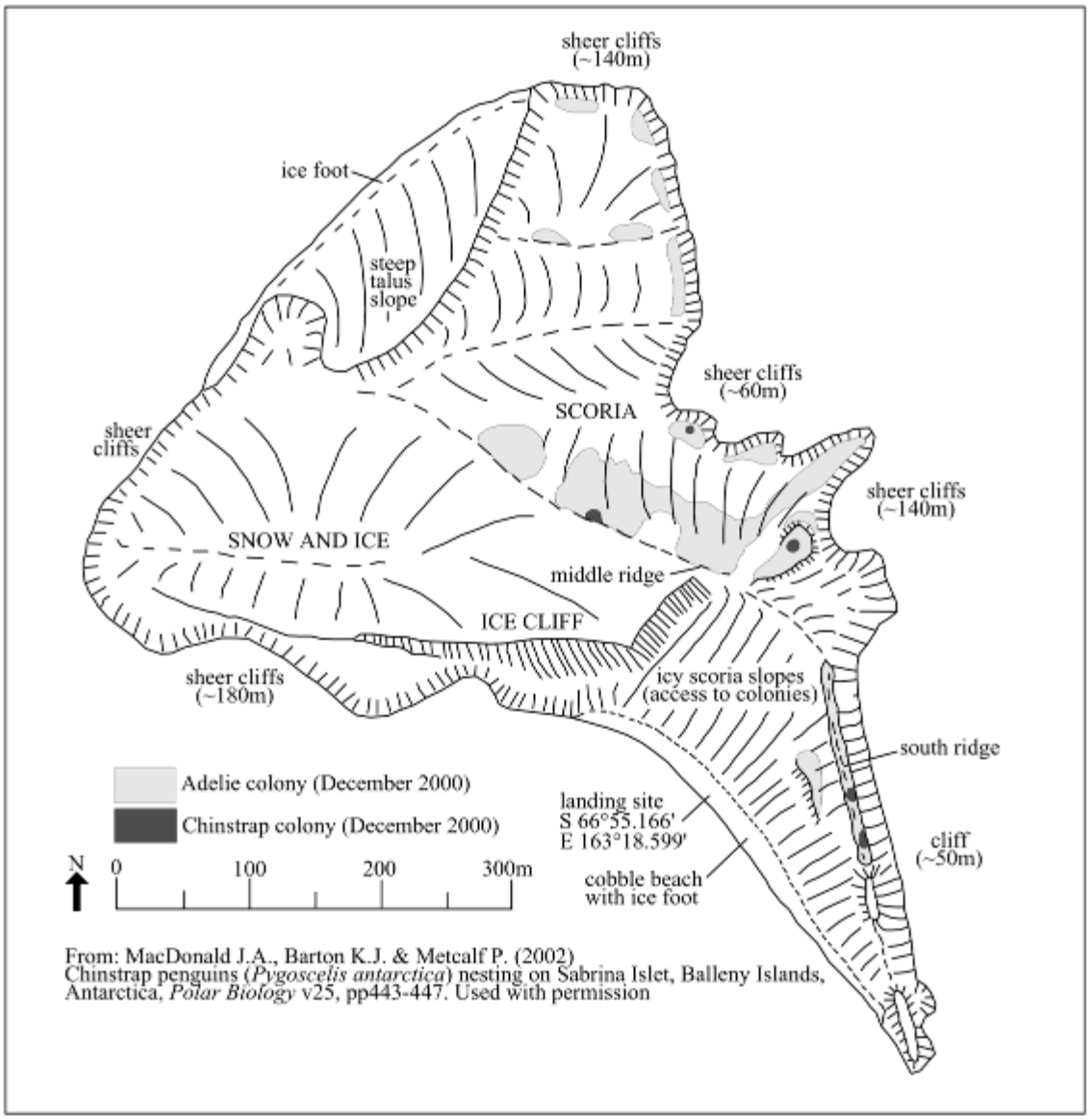


Chart NZ14912 Sourced from Land Information New Zealand data. Crown Copyright Reserved

Scale: 1:300,000
Depths and Heights in Metres

Projection: Mercator, Central Meridian: 161°20'00", Standard Parallel: 66°45'00"
Datum: WGS84

Figure 1: Sketch Map of Sabrina Island



From: MacDonald J.A., Barton K.J. & Metcalf P. (2002) Chinstrap penguins (*Pygoscelis antarctica*) nesting on Sabrina Islet, Balleny Islands, Antarctica, *Polar Biology* v25, pp443-447. Used with permission

Figure 2: Aerial view of penguin breeding areas, Sabrina Island
Photographs: Kerry Barton, Landcare Research New Zealand, December 2000
Red shading highlights areas of penguin nesting (Adélie and chinstrap not distinguishable).
Refer to Figure 1 for location.

Figure 3: Overview of Sabrina and neighbouring islands.
Kerry Barton, Landcare Research New Zealand, December 2000.
Left to right: the Monolith, Sabrina Island, Chinstrap Island. Buckle Island in background

Figure 4: Landing beach at south west of Sabrina Island and the Monolith.
Rebecca McLeod, University of Otago, 2006.

Figure 5: Adélie and chinstrap penguins on south ridge of Sabrina Island, looking south to the Monolith
Rebecca McLeod, University of Otago, 2006.

Management Plan for
Antarctic Specially Protected Area No. 113

LITCHFIELD ISLAND, ARTHUR HARBOR

ANVERS ISLAND, PALMER ARCHIPELAGO

Introduction

Litchfield Island lies within Arthur Harbor, SW Anvers Island, at 64°46'S, 64°06'W. Approximate area: 2.7km^2. Designation on the grounds that Litchfield Island, together with its littoral zone, possesses an unusually high collection of marine and terrestrial life, is unique amongst the neighboring islands as a breeding place for six species of native birds and provides an outstanding example of the natural ecological system of the Antarctic Peninsula area. In addition, Litchfield Island possesses rich growths of vegetation and has the most varied topography and the greatest diversity of terrestrial habitats of the islands in Arthur Harbor. Proposed by the United States of America. Adopted through Recommendation VIII-1 (1975, SPA No. 17); renamed and renumbered by Decision 1 (2002); original management plan adopted through Measure 2 (2004).

1. Description of values to be protected

Litchfield Island (Latitude 64°46'S, Longitude 64°06'W, 2.7km^2), Arthur Harbor, Anvers Island, Antarctic Peninsula was originally designated as a Specially Protected Area through Recommendation VIII-1 (1975, SPA No. 17) after a proposal by the United States of America. It was designated on the grounds that "Litchfield Island, together with its littoral, possesses an unusually high collection of marine and terrestrial life, is unique amongst the neighboring islands as a breeding place for six species of native birds and provides an outstanding example of the natural ecological system of the Antarctic Peninsula area".

The current management plan reaffirms the original reasons for designation associated with the bird communities. The island supports a diverse assemblage of bird species that is representative of the mid-western Antarctic Peninsula region. The number of bird species recorded as breeding on Litchfield Island is currently six, following the recent local extinction of Adélie penguins (*Pygoscelis adeliae*) on the island. Population decline has been attributed to the negative impact of increased snow accumulation and reduced sea ice extent on both food availability and survival of young (McClintock *et al*. 2008). The species continuing to breed on Litchfield Island are southern giant petrels (*Macronectes giganteus*), Wilson's storm petrels (*Oceanites oceanicus*), kelp gulls (*Larus dominicanus*), south polar skuas (*Catharacta maccormicki*), brown skuas (*Catharacta lonnbergi*), and Antarctic terns (*Sterna vittata*). The status of these bird colonies as being relatively undisturbed by human activities is also an important value of the Area.

In 1964 Litchfield Island supported one of the most extensive moss carpets known in the Antarctic Peninsula region, dominated by *Warnstorfia laculosa* which was then considered near its southern limit (Corner 1964a). *W. laculosa* is now known to occur at a number of sites further south, including Green Island (ASPA No. 108, in the Berthelot Islands) and Avian Island (ASPA No. 118, in Marguerite Bay). Accordingly, the value originally cited that this species is near its southern limit at Litchfield Island is no longer valid. Nevertheless, at the time Litchfield Island represented one of the best examples of maritime Antarctic vegetation off the western coast of Graham Land. Furthermore, several banks of *Chorisodontium aciphyllum* and *Polytrichum strictum* of up to 1.2m in depth were described in 1982, which were considered to be some of the best examples of their kind in the Antarctic Peninsula area (Fenton and Lewis Smith 1982). In February 2001 it was observed that these values have been severely compromised by the impact of Antarctic fur seals (*Arctocephalus gazella*), which have damaged and destroyed large areas of vegetation on the lower accessible slopes of the island by trampling and nutrient enrichment. Some areas previously richly carpeted by mosses have been completely destroyed, while others have suffered moderate-to-severe damage. Slopes of *Deschampsia antarctica* are more resilient and have persisted even where fur seals have been numerous, although here signs of damage are also obvious. However, on the steeper and higher parts of the island, and other areas that are inaccessible to seals, the vegetation remains undamaged. Furthermore, observations suggest that a recent local decline in Antarctic fur seal numbers has led to the recovery of previously damaged vegetation on Litchfield Island (Fraser pers. comm. 2009). While the vegetation is less extensive and some of the moss carpets have been compromised, the remaining vegetation continues to be of value and an important reason for special protection of the island. Litchfield Island also has the most varied topography and the greatest diversity of terrestrial habitats of the islands in Arthur Harbor.

The Antarctic Peninsula is currently experiencing regional warming at a rate that exceeds any other observed globally. The marine ecosystem surrounding Litchfield Island is undergoing substantial and rapid change in response to this climatic warming, which has included a decline in local Adélie penguin and Antarctic fur seal populations and changes in vegetation patterns. As such, maintenance of the relatively undisturbed state of Litchfield Island has potential value for long-term studies of this ecosystem.

Litchfield Island has been afforded special protection for most of the modern era of scientific activity in the region, with entry permits having been issued only for compelling scientific reasons. Litchfield Island has therefore never been subjected to intensive visitation, research or sampling and has value as terrestrial area that has been relatively undisturbed by human activities. The Area is thus valuable as a reference site for some types of comparative studies

with higher use areas, and where longer-term changes in the abundance of certain species and in the micro-climate can be monitored. The island is easily accessible by small boat from nearby Palmer Station (US), and Arthur Harbor is visited frequently by tourist ships. Continued special protection is therefore important to ensure the Area remains relatively undisturbed by human activities.

The designated Area is defined as including all of Litchfield Island above the low tide water level, excluding all offshore islets and rocks.

2. Aims and objectives

Management at Litchfield Island aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance and sampling in the Area;
- allow scientific research on the natural ecosystem and physical environment in the Area provided it is for compelling reasons which cannot be served elsewhere and provided it will not compromise the values for which the Area is protected;
- minimize 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 Palmer Station (US) on Anvers Island.
- Markers, signs or other structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition.
- Visits shall be made as necessary (at least once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map 1: Litchfield Island, ASPA No. 113, in relation to Anvers Island, showing the location of nearby stations (Palmer Station, US; Yelcho Station, Chile; Port Lockroy Historic Site and Monument No. 61, UK), the boundary of Antarctic Specially Managed Area No. 7 SW Anvers Island and Palmer Basin, and the location of nearby protected areas. Projection: Lambert Conformal Conic; Central Meridian: 64°06'W; Standard parallels: 64°45'S, 65°00'S; Datum and Spheroid: WGS84; Contour interval: Land - 250m; Marine - 200m. Data sources: coastline & topography SCAR Antarctic Digital Database V4.1 (2005); Palmer Basin bathymetry Domack *et al.* (2006), other bathymetry GEBCO (2003). Inset: the location of Anvers Island and the Palmer Archipelago in relation to the Antarctic Peninsula.

Map 2: Litchfield Island ASPA No. 113: Physical features and selected wildlife. Map specifications: Projection: Lambert Conformal Conic; Central Meridian: 64°06'W; Standard parallels: 64°46'S, 64°48'S; Datum: USGS LIT1 (1999); Spheroid: WGS84; Contour interval: Land - 5m; Marine - 20m; Definite coastline, topography & seal colony derived from USGS orthophotograph with a horizontal and vertical accuracy of ± 2m (Sanchez and Fraser 2001); Bathymetry derived from Asper & Gallagher PRIMO survey (2004); Bird data W. Fraser (2001-09). The northeastern coastline is beyond the limits of the orthophotograph and is digitized from a rectified aerial image covering the wider area (estimated accuracy ± 10m – image ref: TMA 3210 025V, 23 Dec 98).

6. Description of the Area

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

General description

Litchfield Island (64°46'15"S, 64°05'40"W, 0.35km^2) is situated in Arthur Harbor approximately 1500m west of Palmer Station (US), Gamage Point, Anvers Island, in the region west of the Antarctic Peninsula known as the Palmer Archipelago (Map 1). Litchfield Island is one of the largest islands in Arthur Harbor, measuring approximately 1000m northwest to southeast and 700m from northeast to southwest. Litchfield Island has the most varied topography and the greatest diversity of terrestrial habitats of the islands in Arthur Harbor (Bonner and Lewis Smith 1985). Several hills rise to between 30-40m, with the maximum elevation of 48m being in the central western part of the island (Map 2).

Rocky outcrops are common both on these slopes and on the coast. The island is predominantly ice-free in summer, apart from small snow patches occurring mainly on the southern slopes and in valleys. Cliffs of up to 10m form the northeastern and southeastern coasts, with pebble beaches found in bays in the north and south.

The designated Area is defined as all of Litchfield Island above the low tide water level, excluding all offshore islets and rocks. The coast itself is a clearly defined and visually obvious boundary feature, so boundary markers have not been installed. Several signs drawing attention to the protected status of the island are in place and legible, although deteriorating (Fraser pers. comm. 2009).

Climate

Few meteorological data are available for Litchfield Island, although temperature data were collected at two north- and south-facing sites on Litchfield Island from January – March 1983 (Komárková 1983). The north-facing site was the warmer of the two, with January temperatures generally ranging between 2° to 9°C, February between -2° to 6°C, and March -2° to 4°C in 1983. A maximum temperature of 13°C and a minimum of -3°C were recorded at this site over this period. The south-facing site was generally about 2°C cooler, with January temperatures generally ranging between 2° to 6°C, February between -2° to 4°C, and March -3° to 2°C. A maximum temperature of 9°C and a minimum of -4.2°C were recorded at the south-facing site.

Longer-term data available for Palmer Station show regional temperatures to be relatively mild because of local oceanographic conditions and because of the frequent and persistent cloud cover in the Arthur Harbor region (Lowry 1975). Monthly air temperature averages recorded at Palmer Station during the period 1974 to 2004 show a distinct warming trend but also demonstrate significant inter-annual variability (Figure 1). The maximum temperature recorded during the period was 10.8ºC in December 2000, whilst the minimum was –26ºC in August 1995. Previous studies have identified August as the coldest month and January as the warmest (Baker 1996). Storms and precipitation at Palmer Station are frequent, with winds being persistent but generally light to moderate in strength, prevailing from the northeast.

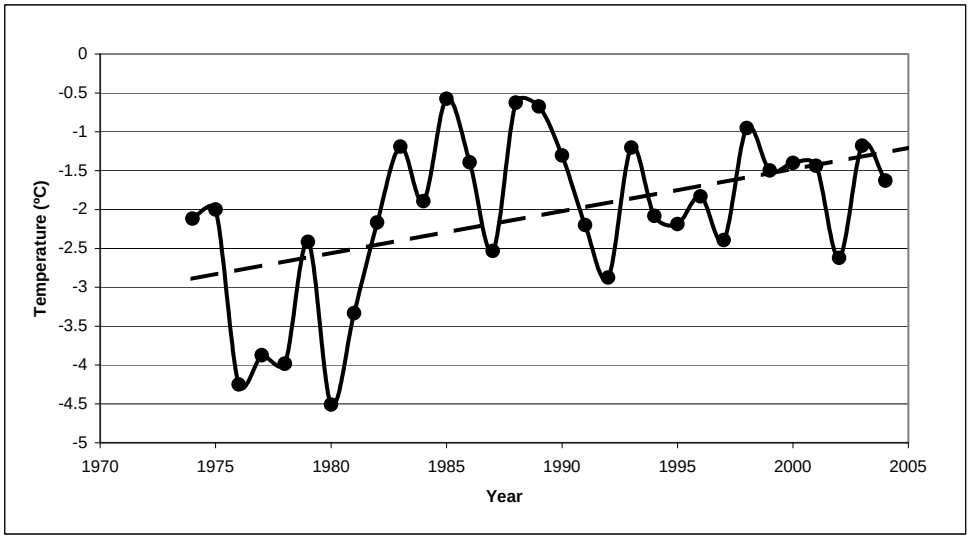


Figure 1. Mean annual surface air temperature at Palmer Station 1974 – 2004.
Data source: Palmer LTER (*http://pal.lternet.edu/data/study_catalog.php#weather)*.

Geology, geomorphology and soils

Litchfield Island is one of numerous small islands and rocky peninsulas along the southwestern coast of Anvers Island which are composed of an unusual assemblage of late Cretaceous to early Tertiary age rock types called the Altered Assemblage (Hooper 1962). The primary rock types of the Altered Assemblage are tonalite, a form of quartz diorite, and trondhjemite, a light-colored plutonic rock. Also common are granite and volcanic rocks rich in minerals such as plagioclase, biotite, quartz and hornblende. Litchfield Island is characterized by a central band of medium-dark gray, fine-grained diorites which separate the predominantly light gray medium-grained tonalites and trondhjemites of the east and west (Willan 1985). The eastern part is characterized by paler dykes up to 40m across and trending north-south and east-west. Minor quartz, epidote, chlorite, pyrite and chalcopyrite veins of up to 8cm thick strike SSE, cutting the tonalite. Dark gray fine-grained plagioclase-phyric dykes with traces of magnetite strike ENE to ESE. Numerous dark gray feldspar-phyric dykes are present in the west, up to 3m thick and trending north-south and ESE. Some cut, or are cut by, sparse quartz, epidote, chlorite, pyrite, chalcopyrite and bornite veins of up to 20cm thick.

The soils of Litchfield Island have not been described, although peaty soils of up to one meter in depth may be found in areas where there is, or once was, rich moss growth.

Freshwater habitat

There are a few small ponds on Litchfield Island: one small pond on a hill in the central, northeastern part of the island has been described as containing the algae *Heterohormogonium* sp. and *Oscillatoria brevis*. Another pond 50m further south has been described as containing *Gonium* sp., *Prasiola crispa, P. tesselata* and *Navicula* sp (Parker *et al*. 1972).

Vegetation

The plant communities at Litchfield Island were surveyed in detail in 1964 (Corner 1964a). At that time, vegetation on Litchfield Island was well-developed and comprised several distinct communities with a diverse flora (Lewis Smith and Corner 1973; Lewis Smith 1982). Both species of Antarctic vascular plant, Antarctic hairgrass (*Deschampsia antarctica*) and Antarctic pearlwort (*Colobanthus quitensis*) were present on Litchfield Island (Corner 1964a; Greene and Holtom 1971; Lewis Smith and Corner 1973). Corner (1964a) noted that *D. antarctica* was common along the northern and northwestern coast of the island, with more localized patches growing further inland on ledges with deposits of mineral material and forms closed swards (Greene and Holtom 1971; Lewis Smith 1982). *C. quitensis* was present in two localities: a patch on the northeastern coast measuring approximately 9x2m and a series of about six cushions scattered over a steep, flushed cliff above the northwestern coast. Commonly associated with the two vascular plants was a moss carpet assemblage comprising *Bryum pseudotriquetrum* (= *Bryum imperfectum*), *Sanionia uncinata* (= *Drepanocladus uncinatus*), *Syntrichia princeps* (= *Tortula grossiretis*) and *Warnstorfia laculosa* (= *Calliergidium austro-stramineum*) (Corner 1964a). Factors controlling the distribution of *C. quitensis* and *D. antarctica* area include the availability of suitable substrate and air temperature (Komarkova *et al*. 1985). In conjunction with recent warming, existing populations of *C. quitensis* have expanded and new colonies have been established within the Arthur Harbor area, although this has not been studied specifically at Litchfield Island (Grobe *et al*. 1997; Lewis Smith 1994).

On well-drained rocky slopes, several banks of *Chorisodontium aciphyllum* (= *Dicranum aciphyllum*) and *Polytrichum strictum* (= *Polytrichum alpestre*) were described in 1982 as up to 1.2m in depth, and were considered to be some of the best examples of their kind in the Antarctic Peninsula area (Fenton and Lewis Smith 1982; Lewis Smith 1982). The more exposed areas of moss turf were covered by crustose lichens, species of *Cladonia* spp. and *Sphaerophorus globosus* and *Coelocaulon aculeatum* (= *Cornicularia aculeata*). In deep, sheltered gullies there was often a dense lichen cover comprising *Usnea antarctica*, *U. aurantiaco-atra* and *Umbilicaria antarctica*. Raised areas of *P. strictum* turf of approximately 0.5m high occurred at the bottom of a narrow, east to west trending, valley. The hepatics *Barbilophozia hatcheri* and *Cephaloziella varians* were associated with the turf communities, particularly in frost heave channels and often occurred as stunted specimens on exposed humus.

There were a number of permanently wet areas on the island, an outstanding feature of which was one of the most extensive moss carpets known in the Antarctic Peninsula region, dominated by *W. laculosa* (Fenton and Lewis Smith 1982). Elsewhere, *S. uncinata* and *Brachythecium austro-salebrosum* formed smaller stands. *Pohlia nutans* lined the drier areas where the moss carpet communities merged with the moss turf communities.

Rock surfaces supported a variety of lichen-dominated communities in addition to the numerous epiphytic species that occurred on the moss banks. An open lichen and bryophyte community covered rocks and cliffs around the coast and in the center of the island. The southern coast of the island consisted of primarily crustose species of lichen, predominantly *Usnea antarctica* along with the mosses *Andreaea depressinervis* and *A. regularis*. The foliose alga *Prasiola crispa* forms small stands associated with the penguin colonies and other seabird habitats.

Other species recorded as present within the Area are: the hepatic *Lophozia excisa*; the lichens *Buellia* spp., *Caloplaca* spp., *Cetraria aculeata*, *Coelopogon epiphorellus*, *Lecanora* spp., *Lecidia* spp., *Lecidella* spp., *Lepraria* sp., *Mastodia tessellata*, *Ochrolechia frigida*, *Parmelia saxatilis*, *Physcia caesia*, *Rhizocarpon geographicum*, *Rhizocarpon* sp., *Stereocaulon glabrum*, *Umbilicaria decussata*, *Xanthoria candelaria* and *X. elegans*; and the mosses *Andreaea gainii* var. *gainii*, *Bartramia patens*, *Dicranoweisia grimmiacea*, *Pohlia cruda*, *Polytrichastrum alpinum*, *Sarconeurum glaciale* and *Schistidium antarctici* (BAS Plant Database 2009).

Previously, increasing populations of Antarctic fur seals (*Arctocephalus gazella*) have caused significant damage to the moss banks and carpets at lower elevations (Lewis Smith 1996; Harris 2001). However, observations suggest the beginning of recovery of previously damaged vegetation at some sites following a recent decline in fur seal populations on Litchfield Island (Fraser pers. comm. 2009). South Polar skuas (*Catharacta maccormicki*) nest in the moss banks and cause some local damage.

Invertebrates, bacteria and fungi

The invertebrate fauna of Litchfield Island has not been studied in detail. The tardigrades *Macrobiotus furciger*, *Hypsibius alpinus* and *H. pinguis* have been observed in moss patches, predominantly on north-facing slopes (Jennings 1976).

Breeding birds

Six bird species breed on Litchfield Island, making it one of the most diverse avifauna breeding habitats within the Arthur Harbor region. A small Adélie penguin (*Pygoscelis adeliae*) colony was previously situated on the eastern side of the island and has been censused regularly since 1971 (Table 1, Map 2). Following the substantial decline in the numbers of breeding pairs over a 30-year period, Adélie penguins are presently extinct on Litchfield Island (Fraser pers. comm. 2009). Population decline has been attributed to changes in both sea ice distribution and snow accumulation (McClintock *et al*. 2008). Adélie penguins are sensitive to changes in sea ice concentration, which has an influence on penguin access to feeding areas and on the abundance of Antarctic krill, which is their primary prey (Fraser and Hofmann 2003; Ducklow *et al*. 2007). The recent substantial extension of ice-free conditions within the Palmer LTER study area occurred concurrently with an 80 percent decrease in krill abundance along the northern half of the western Antarctic Peninsula and as a result may have significantly reduced the food supply of Adélie penguins inhabiting Litchfield Island (Fraser and Hofmann 2003; Forcada *et al*. 2008). In recent years, spring blizzards in the Arthur Harbor area have become more frequent and more intense, which coupled with widespread precipitation increases, is thought to have substantially increased mortality rates of Adélie chicks and eggs (McClintock *et al*. 2008; Patterson *et al*. 2003). The Litchfield Island colony receives the most snowfall of the seven penguin colonies studied in the Palmer area and has shown the most rapid decline, strongly implicating increased snowfall as a contributing factor in Adélie penguin losses (Fraser, in Stokstad 2007).

Table 1. Numbers of breeding Adélie penguins (*Pygoscelis adeliae*) on Litchfield Island 1971-2009

Year	BP	Count Type[1]	Source	Year	BP	Count Type[1]	Source	Year	BP	Count Type[1]	Source
1971-72	890	N3	2	1985-86	586	N1	2	1997-98	365	N1	3
1972-73				1986-87	577	N1	3	1998-99	338	N1	3
1973-74				1987-88	430	N1	3	1999-2000	322	N1	3
1974-75	1000	N4	2	1988-89				2000-01	274	N1	3
1975-76	884	N1	3	1989-90	606	N1	3	2001-02	166	N1	3
1977-78	650	N1	2	1990-91	448	N1	3	2002-03	143	N1	3
1978-79	519	N1	2	1991-92	497	N1	3	2003-04	52		4
1979-80	564	N1	2	1992-93	496	N1	3	2004-05	33		4
1980-81	650	N1	2	1993-94	485	N1	3	2005-06	15		4
1981-82				1994-95	425	N1	3	2006-07	4		4
1982-83				1995-96	410	N1	3	2007-08	0		4
1983-84	635	N1	2	1996-97	346	N1	3	2008-09	0		4
1984-85	549	N1	2								

1. BP = Breeding pairs, N = Nest, C = Chick, A = Adults; 1 = < ± 5%, 2 = ± 5-10%, 3 = ± 10-15%, 4 = ± 25-50% (classification after Woehler, 1993)
2. Parmelee and Parmelee, 1987 (N1 and December counts are shown where several counts were made in one season).
3. W.R. Fraser data supplied February 2003, based on multiple published and unpublished sources.
4. W.R. Fraser data supplied January 2009.

Southern giant petrels (*Macronectes giganteus*) breed in small numbers on Litchfield Island. Approximately 20 pairs were recorded in 1978-79, including an incubating adult that had been banded in Australia (Bonner and Lewis Smith 1985). More recent data on numbers of breeding pairs are given in Table 2 and show a continuing upward trend in numbers. Population increases on Litchfield Island and in the vicinity of Palmer Station provide a notable exception to more widespread decline of southern giant petrels in the Antarctic Peninsula region, and have been attributed to the close proximity of prey-rich feeding grounds and the relatively low level of commercial fishing activity within the region (Patterson and Fraser 2003). In austral summer 2004, six southern giant petrel chicks from four colonies located close to the Palmer Station were found to have poxviral infection (Bochsler *et al*. 2008). While the reasons for the emergence of the virus and its potential impacts on southern giant petrel populations are currently unknown, it has been suggested that Adélie penguins may be equally vulnerable to infection.

Table 2. Numbers of breeding southern giant petrels (*Macronectes giganteus*) on Litchfield Island 1993-2009 (nest counts accurate < ± 5%)

Year	Breeding pairs	Year	Breeding pairs	Year	Breeding pairs
1993-94	26	1998-99	44	2003-04	47
1994-95	32	1999-2000	41	2004-05	48
1995-96	37	2000-01	39	2005-06	43
1996-97	36	2001-02	46	2006-07	50
1997-98	20	2002-03	42	2007-08	45
				2008-09	57

Source: Unpublished data supplied by W.R. Fraser, February 2003 and January 2009.

It is likely that Wilson's storm petrels (*Oceanites oceanicus*) breed within the Area, although numbers have not been determined. Up to 50 pairs of South Polar skuas (*Catharacta maccormicki*) occur on the island, although the number of breeding pairs fluctuates widely from year to year. Brown skuas (*Catharacta lonnbergi*) have in the past been closely associated with the Adélie penguin colony (Map 2), with the number of breeding pairs having ranged from two to eight. The low count of two pairs in 1980-81 followed an outbreak of fowl cholera, which killed many of the brown skuas on Litchfield Island in 1979. Hybrid breeding pairs also occur. Although 12-20 kelp gulls (*Larus dominicanus*) are seen regularly on the island, there are only two or three nests each season. A small number of Antarctic terns (*Sterna vittata*) regularly breed on Litchfield Island, usually less than a dozen pairs (approximately eight pairs in 2002-03) (Fraser pers. comm. 2003). They are most commonly found on the NE coast although their breeding sites change from year to year, and in 1964 they occupied a site on the NW coast (Corner 1964a). A recent visit to Litchfield Island indicates that the number of Wilson's storm petrels, South Polar skuas, brown skuas, kelp gulls and Antarctic terns breeding on the island has undergone minimal change in recent years (Fraser pers. comm. 2009).

Among the non-breeding birds commonly seen around Litchfield Island, the Antarctic shag (*Phalacrocorax* [atriceps] *bransfieldensis*) breeds on Cormorant Island several kilometers to the east; chinstrap penguins (*Pygoscelis antarctica*) and gentoo penguins (*P. papua*) are both regular summer visitors in small numbers. Snow petrels (*Pagodroma nivea*), cape petrels (*Daption capense*), Antarctic petrels (*Thalassoica antarctica*) and southern fulmars (*Fulmarus glacialoides*), are irregular visitors in small numbers, while two gray-headed albatross (*Diomedea chrysostoma*) were sighted near the island in 1975 (Parmelee *et al.* 1977).

Marine mammals

Antarctic fur seals (*Arctocephalus gazella*) started to appear in Arthur Harbor in the mid-1970s and are now common on Litchfield Island from around February each year. Regular censuses conducted in February and March over the period 1988-2003 recorded on average 160 and 340 animals on the island in these months respectively (Fraser pers. comm. 2003). In recent years, however, Antarctic fur seal numbers have decreased within the Arthur Harbor area (Siniff *et al*. 2008). Population decline has been tentatively attributed to reduced Antarctic krill availability within the area, which represents a key component of the diet of Antarctic fur seals, particularly during pupping (Clarke *et al*. 2007; Siniff *et al*. 2008). Diminished Antarctic krill abundance is thought to be a result of reduced sea ice extent and persistence within the Arthur Harbor area (Fraser and Hoffman 2003; Atkinson *et al*. 2004).

Elephant seals (*Mirounga leonina*) haul out on accessible beaches from October to June, numbering on average 43 animals throughout these months since 1988 (Fraser pers. comm. 2003). The larger groups of a dozen or more are found in the low-lying valley on the northeastern side of the island (Map 2). A few Weddell seals (*Leptonychotes weddellii*) occasionally haul out on beaches. Long term census data (1974–2005) indicate that elephant seal populations within the Arthur Harbor area have recently expanded, as larger ice-free areas have become available for breeding. In contrast, data indicate that Weddell seal numbers have declined as a consequence of reduced fast-ice extent, which is necessary for breeding (Siniff *et al*. 2008). Both crabeater seals (*Lobodon carcinophagus*) and leopard seals (*Hydrurga leptonyx*) may also commonly be seen on ice floes near Litchfield Island. Minke whales (*Balaenoptera acutorostrata*) have been sighted in the Arthur Harbor area during both the austral summer (Dec-Feb) and autumn (Mar-May) (Scheidat *et al*. 2008).

Littoral and benthic communities

Strong tidal currents occur between the islands within Arthur Harbor, although there are numerous sheltered coves along the coast (Richardson and Hedgpeth 1977). Subtidal rocky cliffs grade into soft substrate at an average depth of 15m and numerous rock outcrops are found within the deeper soft substrate. Sediments in Arthur Harbor are generally poorly sorted and consist primarily of silt sized particles with an organic content of approximately 6.75% (Troncoso *et*

al. 2008). Significant areas of the seabed within Arthur Harbor are covered by macroalgae, including *Desmarestia anceps* and *D. menziesii*, and sessile invertebrates such as sponges and corals are also present (McClintock *et al*. 2008; Fairhead *et al*. 2006). The predominantly soft mud substrate approximately 200m off the northeastern coast of Litchfield Island has been described as supporting a rich macrobenthic community, characterized by a high diversity and biomass of non-attached, deposit-feeding polychaetes, arthropods, molluscs and crustaceans (Lowry 1975). Analysis of molluscan assemblages within Arthur Harbor, conducted as part of an integrated study of the benthic ecosystem in the austral summers 2003 and 2006, indicates that species richness and abundance are relatively low (Troncoso *et al*. 2008). The fish species *Notothenia neglecta, N. nudifrons* and *Trematomus newnesi* have been recorded between 3 and 15 meters depth (De Witt and Hureau 1979; McDonald *et al*. 1995). The Antarctic limpet (*Nacella concinna*) is common in the marine area around Litchfield Island and is widespread within shallow water areas of the western Antarctic Peninsula (Kennicutt *et al.* 1992b; Clarke *et al*. 2004). Monitoring of zooplankton distribution within the marine area surrounding Litchfield Island indicates that the abundance of *Euphausia superba* and *Salpa thompsoni* decreased significantly between 1993 and 2004 (Ross *et al*. 2008).

Human activities and impact

In January 1989 the vessel *Bahía Paraíso* ran aground 750m south of Litchfield Island, releasing more than 600,000 liters (150,000 gallons) of petroleum into the surrounding environment (Kennicutt 1990; Penhale *et al.* 1997). The intertidal communities were most affected, and hydrocarbon contaminants were found in both sediments and inter- and sub-tidal limpets (*Nacella concinna*), with an estimated mortality of up to 50% (Kennicutt *et al.* 1992a&b; Kennicutt and Sweet 1992; Penhale *et al.* 1997). However, numbers recovered soon after the spill (Kennicutt 1992a&b). Levels of petroleum contaminants found in intertidal sample sites on Litchfield Island were among some of the highest recorded (Kennicutt *et al.* 1992b; Kennicutt and Sweet 1992). It was estimated that 80% of Adélie penguins nesting in the vicinity of the spill were exposed to hydrocarbon pollution, and exposed colonies were estimated to have lost an additional 16% of their numbers in that season as a direct result (Penhale *et al*. 1997). However, few dead adult birds were observed. Samples collected in April 2002 detected hydrocarbons within the waters surrounding the *Bahía Paraíso* wreck, suggesting some leakage of Antarctic gas oil (Janiot *et al*. 2003) and fuel occasionally reaches beach areas on south-western Anvers Island (Fraser pers. comm. 2009). However, hydrocarbons were not found within sediment or biota samples collected in 2002 and high sea energy within the area is thought to significantly limit the impact of fuel leaks on local biota and the persistence of contaminants on beaches. In addition, marine debris, including fishing hooks, lines and floats are occasionally observed on Litchfield Island.

US permit records show that between 1978-92 only about 35 people visited Litchfield Island, with possibly around three visits being made per season (Fraser and Patterson 1997). This suggests a total of approximately 40 visits over this 12-year period, although given that a total of 24 landings were made at the island over two seasons in 1991-93 (Fraser and Patterson 1997), this would seem likely to represent an underestimate. Nevertheless, visitation at Litchfield Island was undoubtedly low over this period, and has remained at a minimal level. Visits have been primarily related to bird and seal censuses and work on terrestrial ecology.

Plant studies carried out on Litchfield Island in 1982 (Komárková 1983) used welding rods inserted into the soil to mark study sites. At nearby Biscoe Point (ASPA No. 139), where similar studies were conducted, numerous rods left *in situ* killed surrounding vegetation (Harris 2001). It is unknown how many of the rods were used to mark sites on Litchfield Island, or whether most were subsequently removed. However, one was found and removed from a vegetated site in a small valley approximately 100m west of the summit of the island after a brief search in February 2001 (Harris, 2001) and welding rods are still occasionally found (Fraser pers. comm. 2009). A more comprehensive search would be required to determine whether further welding rods remain within the Area. No other impacts on the terrestrial environment that could be attributed to human visitation were observed on 28 February 2001, although one of the two protected area signs was in poor condition and insecurely placed. The impact of human activities upon the terrestrial ecology, birds and seals on Litchfield Island from direct visits may thus be considered to have been minor (Bonner and Lewis Smith 1985; Fraser and Patterson 1997; Harris 2001).

6(ii) Restricted and managed zones within the Area

None within the Area, although a Restricted Zone designated under Antarctic Specially Managed Area No. 7 surrounds the Area, encompassing the marine environment within 50m of the coastline of Litchfield Island (Map 2).

6(iii) Structures within and near the Area

With the exception of a cairn on the summit of the island, there are no structures present within the Area. A permanent survey marker, consisting of a 5/8" stainless steel threaded rod, was installed on Litchfield Island by the USGS on 9 February 1999. The marker is located near the summit of the island at 64°46'13.97"S, 64°05'38.85"W at an elevation of 48m, about 8m west of the cairn (Map 2). The marker is set in bedrock and marked by a red plastic survey cap. A survival cache is located near the crest of a small hill overlooking the former Adélie penguin colony, approximately 100m south of the small boat landing site.

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

Litchfield Island lies within Antarctic Specially Managed Area (ASMA) No.7 Southwest Anvers Island and Palmer Basin (Map 1). The nearest Antarctic Specially Protected Areas (ASPAs) to Litchfield Island are: Biscoe Point (ASPA No. 139) which is 16km east of the Area adjacent to Anvers Island; South Bay (ASPA No. 146), which is approximately 27km to the southeast at Doumer Island; and Eastern Dallmann Bay (ASPA No. 153) which is approximately 90km to the northeast, adjacent to Brabant Island (Inset, Map 1).

7. Permit conditions

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

- it is issued only for compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardize the ecological or scientific values of the Area or the value of the Area as a terrestrial reference site;
- 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;
- permits shall be issued for a stated period.

7(i) Access to and movement within the Area

Access to the Area shall be by small boat, or over sea ice by vehicle or on foot. Vehicles are prohibited and all movement within the Area shall be on foot. The recommended landing site for small boats is on the beach in the small cove mid-way along the eastern coast of the island (Map 2). Access by small boat at other locations around the coast is allowed, provided this is consistent with the purposes for which a Permit has been granted. When access over sea ice is viable, there are no special restrictions on the locations where vehicle or foot access may be made, although vehicles are prohibited from being taken on land.

Boat crew, or other people in boats or vehicles, are prohibited from moving on foot beyond the immediate vicinity of the landing site unless specifically authorised by Permit. Visitors should move carefully so as to minimize disturbance to flora, fauna, and soils, and should walk on snow or rocky terrain if practical, but taking care not to damage lichens. Pedestrian traffic should be kept to the minimum consistent with the objectives of any permitted activities and every reasonable effort should be made to minimize effects.

Landing by aircraft within the Area is prohibited and landings within 930m (~1/2 nautical mile) of the Area should be avoided wherever possible. Overflight below 610m (~2000ft) above ground level is prohibited except when operationally necessary for scientific purposes.

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

- Scientific research that will not jeopardize the ecosystem values of the Area or the value of the Area as a reference site, and which cannot be served elsewhere;
- 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 and, with the exception of permanent survey markers and the existing cairn at the summit of the island, permanent structures or installations are prohibited;
- All structures, scientific equipment or markers installed in the Area must be authorized 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;
- Installation (including site selection), maintenance, modification or removal of structures shall be undertaken in a manner that minimizes disturbance to flora and fauna.
- Removal of specific equipment for which the permit has expired shall be the responsibility of the authority which granted the original Permit, and shall be a condition of the permit.

7(iv) Location of field camps

Camping should be avoided within the Area. However, when necessary for essential purposes specified in the Permit, temporary camping is allowed at the designated site on the terrace above the former penguin colony. The campsite is located at the foot of a small hill (~35m), on its eastern side, approximately 100m south-west of the small boat landing beach (Map 2). Camping on surfaces with significant vegetation cover is prohibited.

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

- No living animals, plant material, microorganisms or soils shall be deliberately introduced into the Area, and the precautions listed below shall be taken against accidental introductions;
- To help maintain the ecological and scientific values derived from the relatively low level of human impact at Litchfield Island visitors shall take special precautions against introductions. Of concern are pathogenic, microbial, invertebrate or plant introductions sourced from other Antarctic sites, including stations, or from regions outside Antarctica. Visitors shall ensure that sampling equipment or markers brought into the Area are clean. 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.
- In view of the presence of breeding birds on Litchfield Island, 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, food, and other materials are not to be stored in the Area, unless required for essential purposes connected with the activity for which the permit has been granted or are contained within an emergency cache authorized by an appropriate authority;
- 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 minimized;
- If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*.

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

Taking or harmful interference of native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose.

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 authorized, may be removed from any part of the Area, 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 shall be removed from the Area. Human wastes may be disposed of into the sea.

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

1. Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples for analysis or review, or for protective measures.
2. Any specific sites of long-term monitoring shall be appropriately marked.

7(x) Requirements for reports

- Parties should ensure that the principal holder of 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 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, 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.

- The appropriate authority should be notified of any activities/measures undertaken, and/or of any materials released and not removed, that were not included in the authorized permit.

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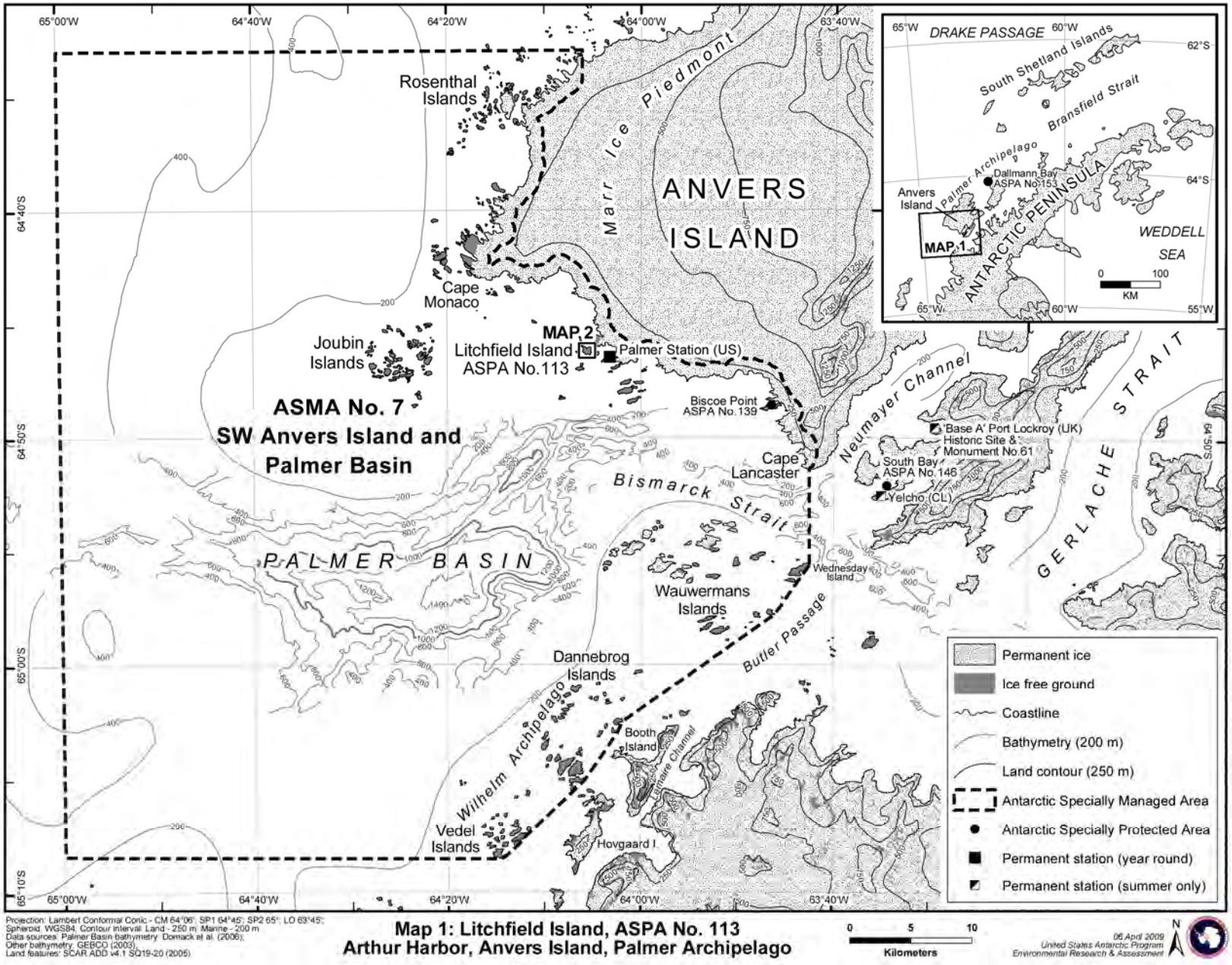
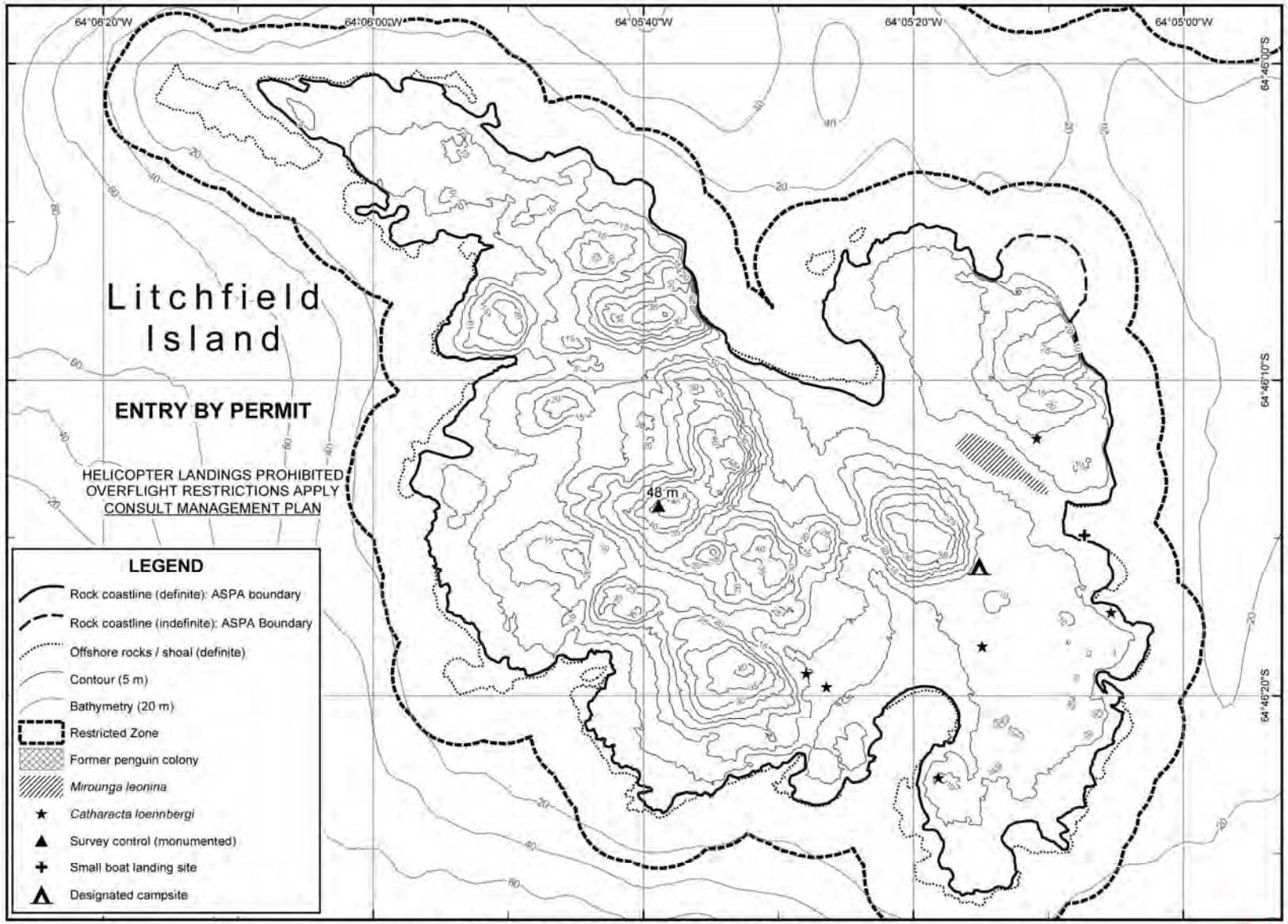


Projection: Lambert Conformal Conic - CM 64°06'; SP1 64°45'; SP2 65°; LO 63°45'; Spheroid: WGS84; Contour intervall: Land - 250 m; Marine - 200 m
Data sources: Palmer Basin bathymetry: Domack et al. (2006); Other bathymetry: GEBCO (2003); Land features: SCAR ADD v4.1 SQ19-20 (2005)

Map 1: Litchfield Island, ASPA No. 113
Arthur Harbor, Anvers Island, Palmer Archipelago

06 April 2009
United States Antarctic Program
Environmental Research & Assessment


64°06'20"W
64°06'00"W
64°05'40"W
64°05'20"W
64°05'00"W
64°46'00"S
64°46'10"S
64°46'20"S
Litchfield Island
ENTRY BY PERMIT
HELICOPTER LANDINGS PROHIBITED
OVERFLIGHT RESTRICTIONS APPLY
CONSULT MANAGEMENT PLAN
48 m
LEGEND
Rock coastline (definite): ASPA boundary
Rock coastline (indefinite): ASPA Boundary
Offshore rocks / shoal (definite)
Contour (5 m)
Bathymetry (20 m)
Restricted Zone
Former penguin colony
Mirounga leonina
Catharacta loennbergi
Survey control (monumented)
Small boat landing site
Designated campsite
Projection: Lambert Conformal Conic
Central Meridian: 64°06'W; Standard parallels: 64°46'S, 64°46'S.
Datum: USGS LIT1 (1999); Spheroid: WGS84
Contour interval: Land - 5 m; Marine - 20 m
Definite coastline & seal colony derived from USGS orthophoto (2001);
Indefinite coastline from TMA3210 24V rectified image (1998);
Bathymetry derived from Aspen & Gallagher PRIMO survey (2004)
Bird data W. Fraser (2001-2009)
Map 2. Litchfield Island, ASPA No. 113
Arthur Harbor, Anvers Island
Physical features and selected wildlife
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06 February 2009
United States Antarctic Program
Environmental Research & Assessment

Management Plan for

Antarctic Specially Protected Area (ASPA) No. 121

CAPE ROYDS, ROSS ISLAND

Introduction

Cape Royds lies at the western extremity of Ross Island, McMurdo Sound, at 166°09'56"E, 77°33'20"S. Approximate area: 0.62km^2. Designation on the grounds that the Area supports the most southerly established Adélie penguin (*Pygoscelis adeliae*) colony known, and which has a long time series of population data that is of unique and outstanding scientific value. In addition, the Area has important terrestrial and freshwater ecological values, including the most southerly observation of snow algae, the type locality for original descriptions of a number of species of algae, and the unusual presence of a form of Dissolved Organic Matter (DOM) that is almost entirely microbially-derived. Proposed by the United States of America: adopted through Recommendation VIII-1 (1975, SPA No. 17); renamed and renumbered by Decision 1 (2002); revised management plan adopted through Measure 1 (2002).

1. Description of values to be protected

An area of about 300m^2 at Cape Royds was originally designated in Recommendation VIII-4 (1975, SSSI No. 1) after a proposal by the United States of America on the grounds that it supports the most southerly established Adélie penguin (*Pygoscelis adeliae*) colony known. The Adélie penguin population at Cape Royds had declined from 1956 as a consequence of human interference during a period when heavy sea ice cover made the colony particularly susceptible to reduced recruitment. In 1963 United States and New Zealand authorities agreed to restrict activities and develop a management plan for the area in order to protect the scientific values related to penguin research. The site was specially protected to allow the population to recover and protect on-going science programmes. The population has recovered and now exceeds pre-1956 levels; since 1990 numbers have fluctuated between 2,500 and 4,500 pairs, primarily due to natural variation in local sea ice extent. The long time series of population data on the penguin colony at Cape Royds is of unique and outstanding scientific value, for it enables investigations into long-term biological interactions with and responses to environmental forcing factors. The colony remains of high scientific and ecological value and as such merits continued long-term special protection, especially in view of ongoing visits to Cape Royds from nearby stations and tourist groups.

The original Area was enlarged in 1985 as a result of a proposal by New Zealand (Recommendation XIII-9) to include a 500m–wide coastal strip to protect the seaward access and nearshore feeding ground of the Adélie penguins, as well as projected research on the Cape Royds inshore marine ecosystem. This coastal area of Cape Royds was a site of studies on Nototheniid fish population structure and dynamics. More recently, research on foraging patterns of Adélie penguins from Cape Royds, conducted since this marine component of the Area was adopted, has shown that the marine area as it had been designated is not significant as a penguin feeding ground and that the birds forage more widely than had previously been known. In addition, projected research on the Cape Royds inshore marine ecosystem has not occurred to the extent that had been anticipated, and currently few studies are being carried out on the Nototheniid fish population at Cape Royds. In view of these factors, and because specific values related to the marine environment adjacent to Cape Royds remain undescribed, the marine boundary has been redefined in this management plan to focus more particularly on the area immediately surrounding the Adélie penguin colony. The marine component immediately adjacent to the Cape Royds penguin colony has been retained because it includes the primary access route of the penguins to the colony, which could otherwise be subjected to unnecessary disturbance by both visitors and local helicopter activity in the vicinity.

Research carried out over the last several decades has also noted that the Area has important values related to freshwater and terrestrial ecology. Pony Lake is a type locality for original descriptions of

a number of species of algae collected during Shackleton's British Antarctic Expedition of 1907-09. The most southerly observation of snow algae, dominated by *Chlamydomonas*, has been made within the Area. In addition, recent studies have shown fulvic acid Dissolved Organic Matter present in Pony Lake is almostly entirely microbially-derived, which is considered unusual. Because these substances are poorly understood, isolated reference samples are needed for research purposes: a sample collected from Pony Lake has made a valuable contribution as a reference for the International Humic Substances Society. Finally, it has been noted that the very low diversity of soil organisms at the site makes it valuable for comparisons with other, more favorable, habitats.

Shackleton's Hut (Historic Monument No. 15), located in ASPA No. 157 (Backdoor Bay), is located 170 meters to the northeast of the Adélie colony and, together with the colony, are attractions of high aesthetic and educational value to visitors. Regular and frequent visits to Cape Royds means that the Area could easily be damaged by human impact if not provided with adequate protection. The scientific and ecological values of the Area require long-term protection from possible adverse impacts associated with these activities. However, in recognition of the value of the Adélie colony as the most accessible of any penguin species to the personnel of McMurdo Station (US) and Scott Base (NZ), provision has been made for controlled access to two viewing areas near to, but outside of, the boundaries in order to allow visitors to Cape Royds the opportunity to observe the colony without causing significant impact. Such visits are subject to Site Guidelines agreed through Resolution 4 (2009).

Relics from the time of Shackleton's voyages are present at the site of a small depot in an embayment on the west side of the penguin nesting area (166°09'35.2"E, 77°33'14.3"S: Map 2). The depot has historic value and should not be disturbed except by permit for conservation or management purposes.

The boundaries encompass the entire Adélie penguin colony, the southern part of Pony Lake, and the marine environment up to 500 meters from the shoreline surrounding Flagstaff Point.

2. Aims and objectives

Management at Cape Royds aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance and sampling in the Area;
- allow scientific research on the ecosystem of the Area, in particular on the avifauna and terrestrial and freshwater ecology, provided it will not compromise the values for which the Area is protected;
- minimize the possibility of introduction of alien plants, animals and microbes to the Area;
- take into account the potential historic and heritage values of any artifacts before their removal and/or disposal, while allowing for appropriate clean-up and remediation if required;
- allow visits for management purposes in support of the aims of the management plan.

3. Management activities

- Brightly colored markers, which should be clearly visible from the air and pose no significant threat to the environment, should be placed to mark the helicopter landing pad adjacent to the protected area (Maps 1 and 2).
- 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. In addition, flags should be placed on the sea-ice in Backdoor Bay along the southeast boundary of the marine area (offshore from Derrick Point) on the first visit over sea-ice each season to indicate the restricted area so those travelling to Cape Royds over sea ice are aware of the marine boundary of the Area. Flags placed shall be removed immediately prior to closure of sea-ice travel each season.

- 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 research hut facilities located at Cape Royds.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition, and removed when no longer necessary.
- Visits shall be made as necessary (no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.
- National Antarctic Programs 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: ASPA No. 121 Cape Royds boundaries and topographic map. The map is derived from digitized contours from NZ Lands and Survey Plan 37/108 (1982) combined with an orthophotograph using the following specifications: Projection: Lambert Conformal Conic; Standard parallels: 1st 77°33'14"S; 2nd 77°33'26"S; Central Meridian: 166°10'02"E; Latitude of Origin: 75°00'00"S; Spheroid: WGS84. Positional accuracy of original orthophotograph at 1:10,000 is ±5.0m (horizontal) and ±5.0m (vertical).

Inset 1: The location of Ross Island in the Ross Sea. *Inset 2*: Ross Island, showing the location of McMurdo Station (US) and Scott Base (NZ), and the location of other nearby protected areas on Ross Island.

Map 2: Cape Royds terrestrial area topographic map. Specifications are as follows: Projection: Lambert Conformal Conic; Standard parallels: 1st 77°33'09"S; 2nd 77°33'16"S; Central Meridian: 166°10'02"E; Latitude of Origin: 75°00'00"S; Spheroid: WGS84. Contours are derived from the digital elevation model used to generate the orthophotograph.

6. Description of the Area

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

General description

Cape Royds (166°09'56"E, 77°33'20"S) is situated at the western extremity of Ross Island, McMurdo Sound, on a coastal strip of ice-free land approximately 8km wide, on the lower western slopes of Mount Erebus (Map 1, Insets). The Area comprises both a terrestrial and marine component.

The terrestrial component of the Area consists of ice-free land within approximately 350m of Flagstaff Point (166°09'55"E, 77°33'21"S) that is seasonally occupied by a breeding Adélie penguin (*Pygoscelis adeliae*) colony. The boundary includes all of the area occupied by breeding penguins and the main southern route used by the penguins to the access the sea. The northern boundary of the terrestrial component of the Area extends from a small embayment at the northwestern corner of the Area for 45m in a straight line NE to a survey mark identified on earlier New Zealand maps as IT2 (166°09'33.3"E, 77°33'11.1"S), which is an iron tube embedded in the ground. The boundary thence extends 10m east from IT2 to a signpost (166°09'34.8"E, 77°33'11.1"S), thence a further 80m east to a signpost (166°09'46.1"E, 77°33’11.0"S) south of a small pond north of Pony Lake. From this signpost the boundary extends in a SE direction for 114m north of Pony Lake to the

eastern shore of the lake (166°10'01.3"E, 77°33'12.6"S). The northeastern boundary thence extends 86m in a SSE direction to a third signpost (166°10'05"E, 77°33'15.2"S), thence to the coast at Arrival Bay (166°10'06.0"E, 77°33'15.9"S). The northeastern boundary thence extends along the coastline from Arrival Bay to Derrick Point. The boundary from Pony Lake to Derrick Point is coincident with the southern boundary of ASPA No. 157 Backdoor Bay, which has been designated to protect Shackleton's historic hut and associated artefacts (Historic Site and Monument No. 15).

The marine component of the Area encompasses the area within 500m of the mean high water coastline of Flagstaff Point, with the boundary extending 500m southeast from Derrick Point (166°10'22"E, 77°33'14.1"S) to the southeastern corner of the Area at 166°11'08"E, 77°33'27"S, thence westward maintaining a distance of 500m from the shore to 166°08'10"E, 77°33'11.8"S, thence due east 500m to coast at the northwestern corner of the Area (166°9'25"E, 77°33'11.8"S).

Geology and soils

The terrestrial component of the Area comprises rocky terrain of irregular lava flows, volcanic gravels and dark reddish scoria, bounded on the seaward side by a low cliff of approximately 10-20m in height. Mineral soils and sand are present together with encrusted salts and compacted ornithogenic soils associated with the Adélie penguin colony (Cowan and Casanueva 2007).

Breeding birds

The Area contains the world's most southerly established Adélie penguin (*Pygoscelis adeliae*) colony, with annual population numbers currently fluctuating between 2,500 and 4,500 breeding pairs during the approximate mid-October to mid-February occupation (Figure 1). The population size in 1959 was deemed to be equivalent to that in 1909 with no evidence that it had been larger in historical times (Ainley 2002), then declined to fewer than 1000 breeding pairs in 1963 as a result of severe ice conditions which made the colony more susceptible to disturbance by visitation and helicopter movements (Thompson 1977). Following visitor restrictions and relocation of the helicopter pad away from the colony, penguin populations gradually recovered during the 1970's, increasing at a mean annual rate of 15% between 1983 and 1987 and quadrupling the population (Ainley *et al*. 2005; Taylor and Wilson 1990). Following a peak in 1987, Adélie numbers at Cape Royds declined sharply in 1988 and 1989, before recovering once more to reach a population comparable to levels recorded during the late 1980's. By 1998, the Adélie population at Cape Royds had reached 4,000 breeding pairs, with numbers subsequently declining to 2,400 pairs by 2000 (Ainley *et al*. 2004).

Fluctuations in Adélie penguin populations at Cape Royds have been linked to changes in a range of climatic and environmental variables. Wilson *et al*. (2001) found a significant inverse correlation between Adélie numbers and winter sea ice extent, with more extensive (i.e. more northerly) sea ice coverage reducing sub-adult survival rates by restricting access to productive feeding areas. Consequently, total Adélie numbers at Cape Royds showed a five - year lagged response to sea ice concentration variation. The influence of sea ice coverage on Adélie numbers within the Area was further highlighted following the grounding of a large iceberg (designated B15A, 175 x 54km in size) on the shore of Ross Island prior to the 2000 nesting season (Arrigo *et al*. 2002; Ainley *et al*. 2003). The obstruction caused by the B-15 iceberg resulted in unusually extensive sea ice coverage in 2000, which in turn caused a 40 % reduction in primary productivity. However, while Adélie surveys carried out at Cape Royds in 2000 showed a significant change in penguin diet, the impact of increased sea ice coverage on chick production was minimal (Ainley *et al*. 2003).

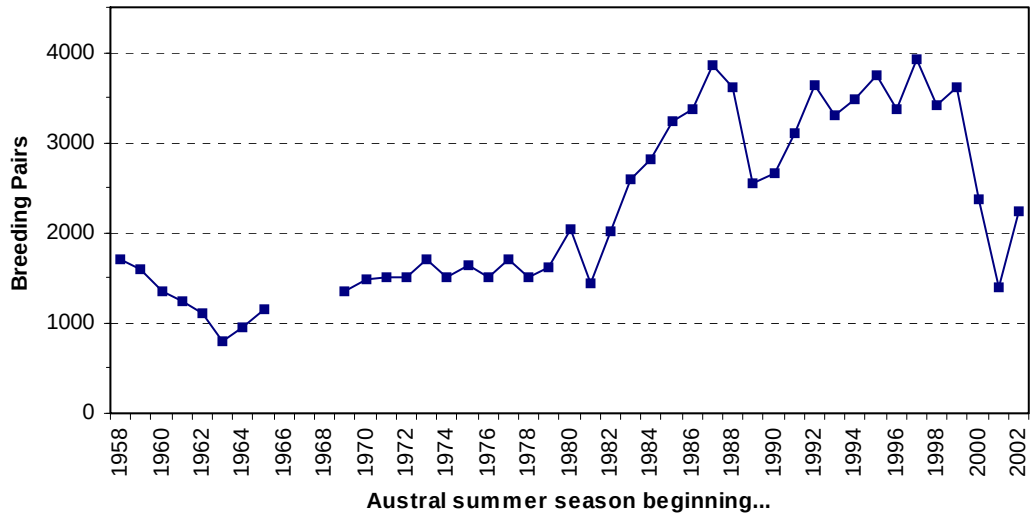

Figure 1. Numbers of breeding pairs of Adélie penguins at Cape Royds 1958/59 – 2002/03.

In addition to specific influences of sea ice extent, Adélie population expansion at Cape Royds has been attributed to the broader effects of climatic warming within the McMurdo Sound area (Ainley *et al*. 2005: Blackburn *et al*. 1991), which began in the mid 1960's and became particularly pronounced in the 1980's (Taylor and Wilson 1990). Climatic amelioration is thought to have positively influenced Adélie populations by reducing sea ice extent and enlarging the Ross Sea Polynya, increasing marine productivity and the availability of food, lowering winter mortality, and enhancing penguin breeding success (Taylor and Wilson 1990: Blackburn *et al*. 1991; Ainley *et al*. 2005). An alternative explanation for the rapid expansion of the Cape Royds colony in the 1980's may lie in a substantial decrease in numbers of Antarctic minke whale, *Balaenoptera bonaerensis*, removed from the Ross Sea during this decade (Ainley *et al*. 2007). The habitat and prey of the minke whale overlaps that of the Adélie penguin, suggesting that release from competition may have caused the population boom observed at Cape Royds and elsewhere on Ross Island.

The underlying causes of the Adélie population crash at Cape Royds in 1988 and 1989 have yet to be resolved, although a link has been made to changes in the Antarctic Oscillation (AAO), with resultant impacts on weather and sea ice conditions, which in turn may have increased Adélie mortality (Ainley *et al*. 2005). Subsequent to 1989, the Cape Royds colony grew rapidly, in contrast to trends at Cape Crozier, suggesting that changes in emigration patterns may have been responsible (Ainley, Ballard *et al.* unpublished data). In addition, continued oceanic warming within the region is likely to have significantly impacted upon sea ice persistence (Ainley *et al*. 2005) and may have contributed to colony growth.

The Area has been monitored regularly since 1957 and has been photographed from the air during the incubation phase of breeding annually since 1981.The annual assessment of Adélie penguin population size at colonies on Ross Island, Ross Sea, from 1959 to 1997 is one of the longest-running marine biological time series in the Antarctic (Taylor and Wilson 1990; Taylor *et al*. 1990; Wilson *et al*. 2001). The long history of scientific observations at Cape Royds thus provides rare opportunities to assess population trends over long periods, enabling assessment of the effects of changing ice regimes against the population dynamics of these bird colonies in the relatively pristine southern Ross Sea ecosystem (Ballard pers. comm. 2008).

Studies of Adélie foraging patterns during the austral summers 1997–98 to 2000–01 indicated the mean foraging distance from Cape Royds ranged between 9.70km and 12.09km (Ainley *et al*. 2004) and observations suggest that little foraging occurs within 200m of the coast (Ainley pers. comm.

2008). The foraging range of penguins belonging to the Cape Royds colony overlaps extensively (30–75%) with the ranges of birds originating from both Cape Bird and Beaufort Island (Ainley *et al*. 2004). Banded penguins from Cape Royds, Cape Bird and Beaufort Island are often seen within the other colonies (Ainley unpublished data, referenced in Ainley *et al*. 2003) and it has been suggested that immigration to Cape Royds from these locations was a major causal factor of population growth during the 1980's onwards (Ainley *et al*. 2004; Ainley pers. comm. 2008).

In addition to the Cape Royds Adélie colony, a significant breeding population of South Polar skuas (*Catharacta maccormicki*) is located close to the ASPA boundary, which totalled 76 breeding pairs in 1981 (Ainley *et al*. 1986). The skuas have been observed to nest and forage for food within penguin rookeries at Cape Royds (Young 1962a). It was noted however, that preying of skuas on young penguins was limited and that only a portion of the skuas breeding at Cape Royds obtained food from within the Adélie colony (Young 1962b). Skua populations declined substantially following cessation of human refuse disposal at McMurdo Station, but are currently not thought to be under threat (Ainley pers. comm. 2008).

Climate

The wind at Cape Royds is predominantly from the southeast and deposits sea spray across the Area (Broady 1988). Data from McMurdo Station, located approximately 35km southeast of Cape Royds, over the period 1973–2004 showed average wind speeds of around 10 knots, whilst the maximum recorded reached 112.3 knots (Antarctic Meteorological Research Centre 2009). Air temperature data collected at nearby Scott Base (NZ) during the period 1957–1997 indicate that January is the warmest month, with a mean temperature of -4.7ºC and that August is the coolest month with an average temperature of -30.2ºC (data sourced from National Institute of Water and Atmospheric Research, New Zealand, *http://www.niwa.cri.nz* 17 Feb 2009). The minimum air temperature recorded during the period 1957 to 1997 was –41.5ºC, recorded in August 1978, whilst the maximum temperature attained was –1.6ºC in January 1971.

Long term climate records indicate that during the 1960's air temperatures and wind speeds recorded at Scott Base were relatively low, which was followed by a period of warming in the early 1970's (Ainley *et al*., 2005). From the early 1980's a marked warming trend was observed across the McMurdo Sound area (Blackburn *et al*. 1991) and records from McMurdo Station suggest that air temperatures peaked in the late 1980's, before cooling once again in the early 1990's (Wilson *et al*. 2001).

Marine biology and oceanography

The marine component of the Area has neither been intensively studied nor fully described. This region has not been subjected to the level of sampling that has occurred close to Hut Point further to the south on Ross Island. To 500m west of the shore the sea floor generally drops off steeply down to several hundred meters, with some submarine cliffs. Sea floor samples collected several kilometers north of Cape Royds and approximately 100m offshore consisted of coarse volcanic gravels and small to large boulders. Research on the Nototheniid fish population and structure in this vicinity between 1978–81 suggested that fish were abundant, with the most common species at that time being *Trematomus bernacchii*. The surveys also recorded the presence of *Trematomus hansoni, T. centronotus, T. nicolai and Gymnodraco acuticeps.* The surveys identified the presence of invertebrates such as echinoids, asteroids (e.g. *Odontaster validus*), ophiuroids, pycnogonids (e.g. *Pentanymphon antarcticum, Colossendeis robusta*), pteropods, copepods, amphipods, isopods, hirudinea, bryozoa, polycheates, ctenophores, mollusca, and medusae. More recent data describing the marine environment close to Cape Royds is not available.

Local ocean currents originate from the eastern Ross Sea continental shelf and flow westward along the Ross Ice Shelf past Cape Crozier, and then turns northward along the Victoria Land coast. The

current divides at Beaufort Island, where a minor arm veers southward past Capes Bird and Royds (Jacobs *et al.* 1970; Barry 1988).

Terrestrial and freshwater ecology

Ponds within the Area, including Pony Lake, are nutrient-enriched and contain an abundant and diverse algal community adapted to high nutrients and salinity, dominated by phytoplankton, diatoms and oscillatorian benthic felts (Broady 1987). Some species of algae were first formally described from Pony Lake (West and West 1911), making the site a 'type locality'. Snow algae are present on small patches of snow on the coastal ice-foot adjacent to the penguin colony, dominated by species of *Chlamydomonas*, which is the most southerly record of snow algae (Broady 1988).

Pony Lake has been identified as an important source of microbially derived Dissolved Organic Material (DOM) (Brown *et al.*2004). One type of DOM, fulvic acid, is derived from decaying plant matter and microbial activity. The fulvic acid present in Pony Lake has been identified as an important end-member as it is almostly entirely microbially-derived. Fulvic acids affect the chemistry, cycling and bioavailability of chemical elements in terrestrial and aquatic environments. Because these substances are poorly understood, isolated reference samples are needed for research purposes. A reference sample of Pony Lake fulvic acid was collected and made available to serve as a microbial end-member for distribution through the International Humic Substances Society. The lake's abundant levels of DOM and convenient location from McMurdo Station make it an ideal place to conduct such fieldwork.

Studies of terrestrial invertebrate (nematode) populations from the ornithogenic soils at Cape Royds have been carried out since 1990. In contrast to the greater invertebrate diversity in the Dry Valleys, only one species of nematode was observed at Cape Royds (*Panagrolaimus davidi*) (Porazinska *et al*. 2002). The very high-nutrient soils at Cape Royds lead to low biodiversity of soil organisms, making the Area susceptible to local and global human disturbance. Additionally, Cape Royds serves as a comparison for habitats under investigation in the McMurdo Dry Valleys.

There is little lichen growth within the Area, although different lichen growth forms (crustose, foliose and fruticose) are found in other parts of Cape Royds, distributed in three distinct zones believed to result from marine aerosol and snow accumulation patterns (Broady 1988, 1989).

Human activities and impact

Changes to the population of Adélie penguins at Cape Royds attributed at least in part to human visitation and helicopter movements is discussed in the section above on breeding birds.

Cape Royds is a popular destination for recreational visits from McMurdo Station (US) and Scott Base (NZ), particularly early in the season when travel to the site is possible by vehicle over sea ice. Such visits are carefully controlled by national authorities, and entry to protected areas are strictly by permit. Cape Royds is one of the most popular tourist sites in the Ross Sea, with 501 passengers landing in 2004/05, 390 in 2005/06, and 377 in 2006/07 (IAATO data). Most station personnel and tourists travelling to Cape Royds visit Shackleton's Hut (Historic Site & Monument No.15 and ASPA No.157), located 170m northeast of the colony, as well as the penguin viewing areas immediately to the north and east of the existing boundary, close to Pony Lake. Visits are closely supervised and visitors are well-briefed, and the boundaries of the Area are generally respected.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

Shackleton's Hut (ASPA No. 157 and Historic Site and Monument No. 15) (166°10'06.4"E, 77°33'10.7"S) is situated approximately 70m from the NE boundary sign of the terrestrial component of the Area, 100m northeast of which is a small research shelter (New Zealand) (166°10'10.6"E, 77°33'07.5"S) (Map 2). Two survey markers are present within the Area – marker IT2 is on the northern boundary of the terrestrial part of the Area and is described above, while marker IT3 (166°09'52.7"E, 77°33'19.7"S) (also an iron tube embedded in the ground) is 45m NW of Flagstaff Point. Relics at the site of a small depot from the time of Shackleton's voyages are present in a small embayment on the west side of the penguin nesting area (166°09'35.2"E, 77°33'14.3"S: Map 2). The depot should not be disturbed except by permit for conservation or management purposes.

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

The nearest protected areas to Cape Royds are Backdoor Bay (ASPA No.157 and HSM No.15) which is adjacent to and shares the northern boundary of the Area, Cape Evans (ASPA No.155) 10km to the south, Tramway Ridge (ASPA No.130) close to the summit of Mount Erebus situated 20km east, New College Valley (ASPA No.116) 35km to the north at Cape Bird, and Arrival Heights (ASPA No.122) which is adjacent to McMurdo Station 35km to the south. Cape Crozier (ASPA No.124) is 75km to the east on Ross Island. Antarctic Specially Managed Area No. 2 McMurdo Dry Valleys is located approximately 70km to the west of Cape Royds.

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 for scientific purposes, or for educational purposes that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardize the ecological, scientific, educational, or historic values of the Area;
- any management activities are in support of the objectives of 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;
- permits shall be issued for a stated period.

7(i) Access to and movement within the Area

Within the terrestrial part of the Area access shall be on foot and vehicles are prohibited. Within the marine part of the Area, access should be by foot or vehicle when sea-ice is present, or by ship or small boat during open water periods. Access into the Area should be from the direction of the helicopter landing site, and if arriving over the sea ice or by boat, then access should be from the embayment below and east of the helicopter landing site from the NW shore of Backdoor Bay (Maps 1 and 2).

Landing by aircraft within the Area is prohibited. Overflight below 610m (~2000ft) above ground level is prohibited except when operationally necessary for scientific purposes. Helicopters should land throughout the year at the Primary landing site (166°10'22.9"E, 77°33'03.5"S), 250m northeast of the northern extent of Pony Lake (Map 2).

Foot traffic within the Area should be kept to the minimum necessary consistent with the objectives of any permitted activities. Permitted visitors should keep to the natural penguin access routes through the colony and not approach occupied nests except as required for scientific or management purposes. Access to the marine component of the Area should generally avoid the main seaward access routes used by the penguins.

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

- Scientific research that will not jeopardize the ecosystem or scientific values of the Area;
- activities with educational aims that cannot be served elsewhere;
- activities with the aim of preserving or protecting historic resources within 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 and, with the exception of permanent survey markers and signs, permanent structures or installations are prohibited;
- All structures, scientific equipment or markers installed in the Area must be authorized 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;
- Installation (including site selection), maintenance, modification or removal of structures shall be undertaken in a manner that minimizes disturbance to flora and fauna.
- Removal of specific equipment for which the permit has expired shall be the responsibility of the authority which granted the original Permit, and shall be a condition of the permit.

7(iv) Location of field camps

Camping within the terrestrial part of the Area is prohibited. A field campsite exists 175m northeast of the Area adjacent to the New Zealand shelter (Map 2). Camping within the marine part of the Area when sea ice is present is allowed by permit. Such camps should avoid the penguin approach routes within 200m of the breeding colony, but are otherwise not restricted to a particular location.

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

- No living animals, plant material, microorganisms or soils shall be deliberately introduced into the Area, and the precautions listed below shall be taken against accidental introductions;
- To help maintain the ecological and scientific values at Cape Royds visitors shall take special precautions against introductions. Of concern are pathogenic, microbial, invertebrate or plant introductions sourced from other Antarctic sites, including stations, or from regions outside Antarctica. Visitors shall ensure that sampling equipment or markers brought into the Area are clean. 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.
- In view of the presence of breeding birds at Cape Royds, 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, food, and other materials are 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 minimized;

- If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*.

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

Taking or harmful interference of native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose.

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 authorized, may be removed from any part of the Area, 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.
- Unless specifically authorized by permit, visitors are prohibited from interfering with or from handling, taking or damaging any historic artifacts found within the Area. Any new artifacts observed should be notified to the appropriate national authority. Relocation or removal of artifacts for the purposes of preservation, protection or to re-establish historical accuracy is allowable by permit.

7(viii) Disposal of waste

All 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

1. Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples for analysis or review, or for protective measures.
2. Any specific sites of long-term monitoring shall be appropriately marked.

7(x) Requirements for reports

- Parties should ensure that the principal holder of 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 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, 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.
- The appropriate authority should be notified of any activities/measures undertaken, and/or of any materials released and not removed, that were not included in the authorized permit.

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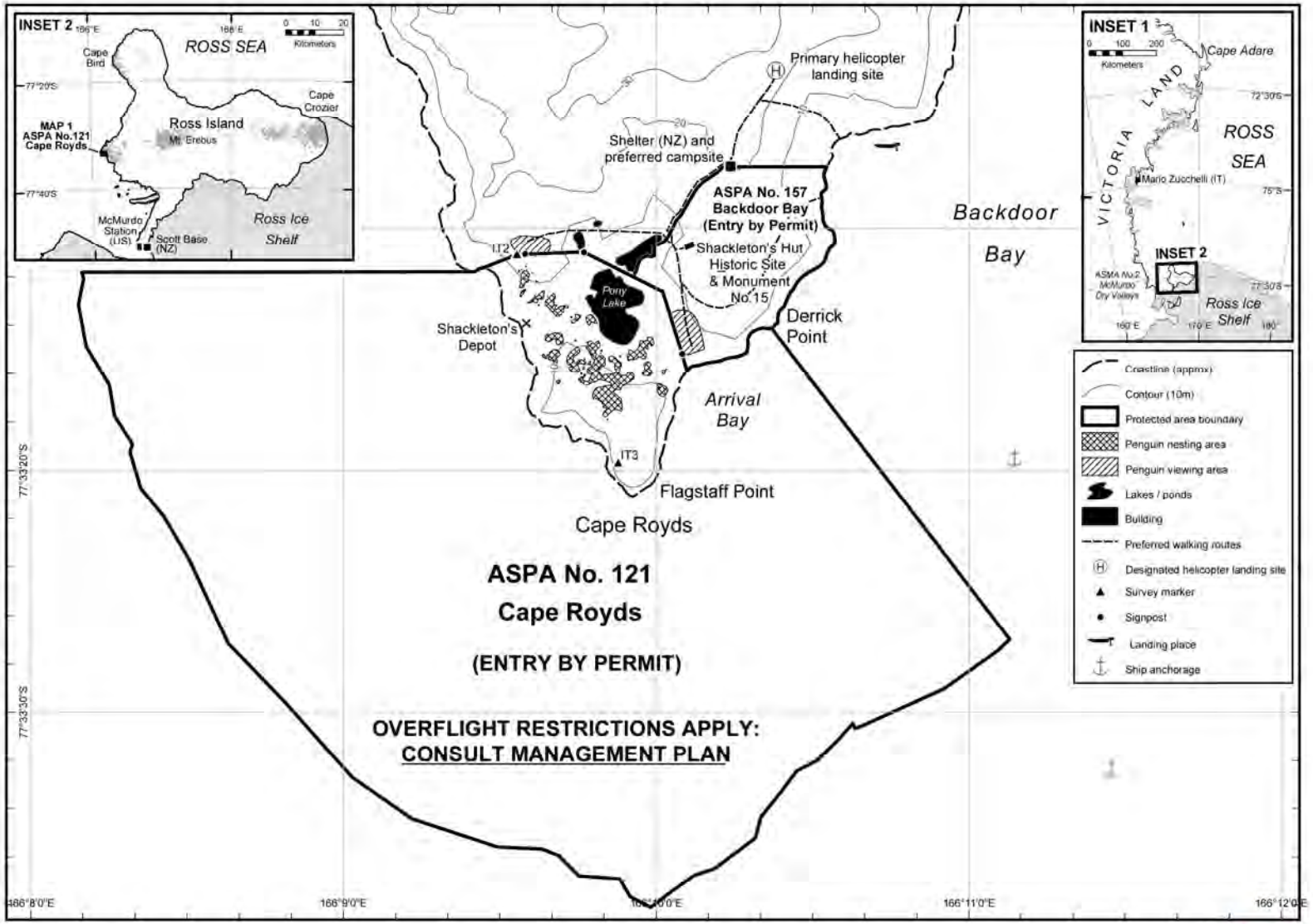


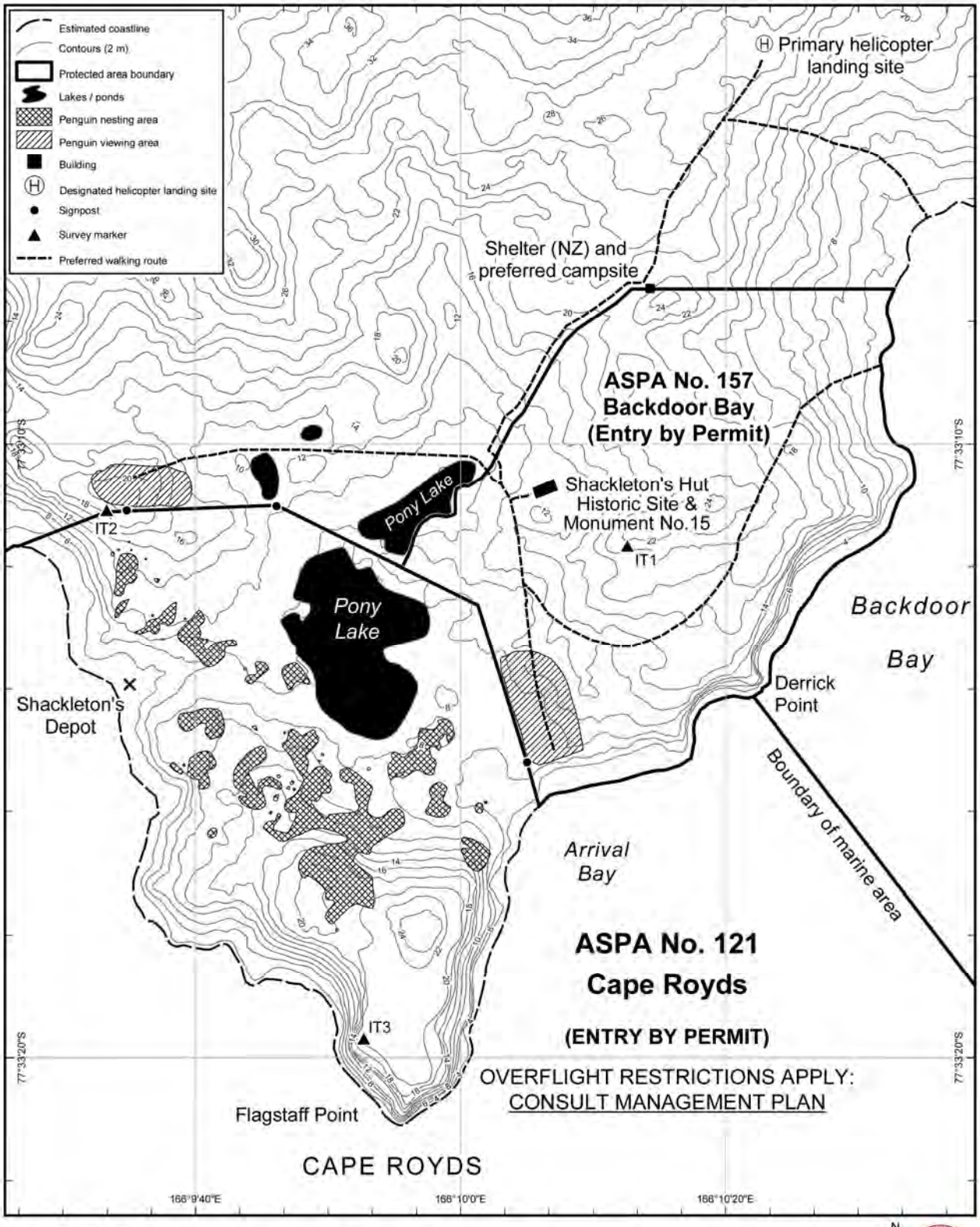
Projection: Lambert Conformal Conic
Central Meridian: 166° 10'02" E
Standard parallels: 77°33'14"S, 77°33'26"S
Datum & Spheroid: WGS84
Data source:
Topography, infrastructure & birds: Gateway Antarctica (2009)

Map 1: ASPA No. 121 Cape Royds, Ross Island
Boundaries and topography

0 100 200
Meters

N

18 February 2009
United States Antarctic Program
Environmental Research & Assessment


Estimated coastline
Contours (2 m)
Protected area boundary
Lakes / ponds
Penguin nesting area
Penguin viewing area
Building
Designated helicopter landing site
Signpost
Survey marker
Preferred walking route
Primary helicopter landing site
Shelter (NZ) and preferred campsite
ASPA No. 157
Backdoor Bay
(Entry by Permit)
Shackleton's Hut
Historic Site &
Monument No.15
IT1
IT2
Pony Lake
Pony Lake
Backdoor Bay
Derrick Point
Shackleton's Depot
Boundary of marine area
Arrival Bay
ASPA No. 121
Cape Royds
(ENTRY BY PERMIT)
OVERFLIGHT RESTRICTIONS APPLY:
CONSULT MANAGEMENT PLAN
IT3
Flagstaff Point
CAPE ROYDS
77°33'10"S
77°33'20"S
166°9'40"E
166°10'0"E
166°10'20"E
Projection: Lambert Conformal Conic
Central Meridian: 166°10'02" E
Standard parallels: 77°33'09"S; 77°33'16"S
Datum & Spheroid: WGS84
Data sources: Topography, infrastructure & birds: Gateway Antarctica (2009).
Map 2: ASPA No. 121
Cape Royds, Ross Island
0
50
100
Meters
N
18 February 2009
United States Antarctic Program
Environmental Research & Assessment

Management Plan for Antarctic Specially Protected Area No. 125

FILDES PENINSULA, KING GEORGE ISLAND (25 DE MAYO)

(Fossil Hill, Holz Stream (Madera Stream), Glacier Dome Bellingshausen (Collins Glacier), Halfthree Point, Suffield Point, Fossil Point, Gradzinski Cove and Skua Cove)

INTRODUCTION

An area of 1.8 km^2 (444,79 acres) in the Fildes Peninsula, King George Island (25 de Mayo), South Shetland Islands archipelago, was proposed as a SPA (Special Protected Area) by Chile four decades ago on the grounds of its uniqueness and paleontological richness. The area was officially designated SPA No 12 at ATCM IV (Santiago, 1966). After 42 years under different statuses (SPA, SSSI and ASPA), and numerous scientific studies, it is necessary to review whether these areas can be considered an ASPA, whether or not they can be defined as "an area designated to protect outstanding environmental, scientific, historic, aesthetic or wilderness values".

Paleontological research conducted in the early 1960s by the Chilean geologist Vladimir Covacevich revealed the existence of avian ichnofossils on Fossil Hill. The proximity of these unique fossils to permanent stations was the principal basis for the designation of SPA No 12. Given that Fildes also harbors areas of paleobotanical richness, SPA No 12 was redesignated SSSI No 5 (Site of Special Scientific Interest) at ATCM VIII (Oslo, 1975). Finally, when Annex V entered into force in May 2002, all previously designated SPAs and SSSIs were included as ASPAs, with ASPA No 125 being created from SSSI No 5.

In this management plan for the ASPA No 125 it is proposed a division of 8 areas, where the old two areas are included in three new ones, but additionally it is proposed five new areas, on the basis of the new findings and research carried out during the last 20 years. Halfthree Point, Skua Cove, Gradzinski Cove, Glacier Dome Bellingshausen (Collins Glacier) and Fossil Point are the new areas, where three of them could provide very relevant information about the evolution of the Upper Cretaceous paleoenvironment of west Antarctica. The extension of the zones has been determined based in paleontological criteria, giving more value to the *in situ* outcrops and the quality and uniqueness degree of the fossil content.

The boundaries for the ASPA No 125 zones contributes to put under protection key fossil outcrops that with complimentary and unique records of the Cretaceous and Eocene times, completing the puzzle of fossiliferous protected areas of Antarctica.

1. Description of values to be protected

Fildes Peninsula, King George Island (25 de Mayo), is one of the areas in Antarctica of greatest paleontological interest, owing to the presence of outcrops with fossil remains of a wide range of organisms, including vertebrate and invertebrate ichnites, and abundant flora with impressions of leaves and fronds, trunks, and pollen grains and spores that date from the Late Cretaceous to the Eocene. The Cretaceous was a crucial time of vegetation change, due largely to the evolutionary and geographic radiation of angiosperms. Throughout the Late Cretaceous angiosperms progressively infiltrated the pre-existing vegetation, but gymnosperms, ferns and sphenophytes dominated land-plant biomass until the Cenozoic. Also, the Eocene represents the warmest lapse of time since the end-Cretaceous mass extinction. The study of this periods could answer several important scientific questions, were Fildes Peninsula outcrops could be a key.

The Fildes Peninsula Group (Hawkes, 1961) has been defined as the stratigraphic unit. Its basal unit consists of outcrops assigned to the Late Cretaceous (Late Campanian to Early Maastrichtian) and comprises fine intercalations of volconclastic sediments among andesitic rocks with suprajacent limestones, tuffaceous conglomerates, sandstones and clays assigned to the early-mid Eocene (Barton, 1965; Birkenmajer, 1997; Hawkes, 1961; Li & Liu, 1991; Liu *et al.*, 2005; Liu, 1992; Park & Jwa, 1991; Zhou *et al.*, 1991). The

sequence represents continental environments dominated by vegetation consisting of warm to temperate forest elements. Further, the sequence contains important vestiges of the rapid expansion of angiosperms in the region, as well as of the beginning of Nothofagaceae dominance among the forest components of the Antarctic Flora.

On Fildes Peninsula, at least three locations have continental volcano sedimentary rocks from the Late Cretaceous: Halfthree Point, Skua Cove and Gradzinski Cove. Halfthree Point (62º13'34''S; 58º56'56''W) is located southwest of the Chinese Station "Great Wall". The site is characterized by palynomorphs and leaf impressions deposited in a lacustrine environment (Shen, 1994) and conserved in tuffaceous sedimentary rock, suggesting a warm and humid environment (Cao, 1994). Shen (1994) used Rb-Sr to determine the age of the rocks, 71.3 ± 0.3 Ma. The presence of acritarchs among the microfossils has been interpreted as the sporadic influence of the ocean on the depositional environment, even though palynomorphs indicate a primarily continental environment. Nearly 80% of the palynomorphs pertain to cryptogamic flora (fungi, bryophytes and ferns) and 5% to the gymnosperms (*Araucariaceae* and *Podocarpaceae*). Angiosperm pollen grains are few in number; these are dominated by the morphogenus *Nothofagidites* but contain the species *N. senectus*, a primitive form of *Nothofagus*, which underscores the Cretaceous age of the sequence. Among the megafossils found, the most important impressions are of *Sphenopteris*, *Podocarpaceae* and dicotyledons, such as *Nothofagus*.

Skua Cove or Skuabucht, as the official SCAR-CGA name Ref. No. 13455 (62º10'44''S; 58º58'59''W), situated northwest of the Frei Station airport, is considered the most exceptional Late Cretaceous outcrop on Fildes Peninsula, because of the degree of conservation of its megaflora, and the uniqueness of the flora, which contains at least two endemic morphospecies. But the access to the outcrops and in situ fossils is very difficult. In this section, tuffaceous sandstones with paleosoils are found subjacent to limestone beds with carbonate lenses, impressions and palynomorphs, which in turn lie subjacent to conglomerates of fossil wood remains. A late andesitic unit has been dated to 57.7 Ma (Fensterseifer *et al*. 1988). Megafossil remains of pteridophytes (*Culcita*, *Osmundaceae*, *Thyrsopteris*), gymnosperms (*Phyllocladus* and *Podocarpus*), and anemophilous dicotyledenous angiosperms pertaining to distinct taxa, including Monimiaceae, Nothofagaceae, Myricaceae, among others, have been found.

Gradzinski Cove, also known as Bahía Cormoranes (62º09'12''S; 58º56'16''W) is an oblong shaped bay northwest of the peninsula, and west of the southwest margin of Glacier Dome Bellingshausen (Collins glacier). Here, small outcrops are confined within a 50 meter span, and no more than 7 meters thick composed of tuffaceous-sedimentary rocks -primarily clays, lutites, and sandstones. Although the conservation of impressions is average, the site has a good record of palynomorphs. More than 50% of these are represented by angiosperm pollen, among which there is a large presence of *Nothofagidites*; some 40% and 10% are represented by cryptogams and gymnosperms, respectively (Dutra & Batten 2000). This location corresponds to Price Point as indicted by Dutra and Batten (2000).

There is general agreement among geologists and paleobiologists about the importance of the Fildes Peninsula for understanding geological, biogeographical, and evolutionary events during the Eocene. The Fildes outcrops have already led to the rejection of models postulating cold and warm humid climates. The paleoassemblages discovered in the Fildes outcrops have permitted the reconstruction of a vegetation type very similar to that of the Valdivian Forest in southern Chile, that is, a temperate flora composed of elements commonly found in the modern floras of New Zealand, Australia, and South America, including Araucariaceae, Podocarpaceae, Nothofagaceae, Cunoniaceae, Lauraceae, Winteraceae and Proteaceae. In addition, important vertebrate and invertebrate ichnites were found on the Fildes Peninsula, shedding light on a time period of recent and growing interest, the Eocene. Interest stems from the fact that the largest temperature increase in the last 60 Ma occurred during this period.

There are two extensive zones with important fossil deposits, Fossil Hill (62º12'22''S; 58º59'03''W) and Glacier Dome Bellingshausen (Collins glacier) (62º10'11''S; 58º55'18''W). The stratigraphic sequences are correlated. The middle sequence of Glacier Dome Bellingshausen (Collins glacier) corresponds to the central portion of the Fossil Hill sequence, in what is denominated Fossil Hill Formation. It consists of alternating layers of volcanic breccia, lavas, tuffs, tuffaceous sandstones, and carbonate lenses, adding to a total of 13 meters thick. Fossil Hill is one of the most famous paleontological sites in Antarctica, because of the presence of leaf and fossil wood impressions, as well as invertebrate and at least four types of avian ichnites (fossilized footprints) (Covacevich & Lamperein 1970, 1972; Covacevich & Rich 1977, 1982; Li & Zhen 1994), including one phororacoid, a giant bird that occupied the niche of raptors during the Eocene. In addition, the flora of Glacier Dome Bellingshausen (Collins glacier) consists of abundant silicified trunk

remains that are exposed at the front of the receding Glacier Dome Bellingshausen (Collins glacier), which limits the Fildes peninsula on the north. Internal conservation of the trunks is extraordinary, allowing study of the anatomical superstructure and dendroecological analyses to be used in their recognition and identification.

Smaller outcrops exist in Holz Stream, also known in scientific literature as Madera Stream (62º11'27''S; 58º56'19''W), Suffield Point (62º11'34''S; 58º55'16''W) and Fossil Point (62º11'16''S; 58º54'30''W). The latter two, in the northeastern section of the peninsula, near Artigas Station, have silicified trunks and tuffaceous sediments that may link them with the middle unit of the Fossil Hill Formation. In contrast, at the head of the Holz Stream (Madera Stream), to the west of the Bellingshausen Station tanks, on the eastern central coast of the peninsula, the trunks either exist *in situ* or fragments have been transported downstream. These outcrops have tentatively been assigned to the Eocene.

2. Aims and objectives

Management of Fildes Peninsula aims to:

- protect the paleontological values because of their uniqueness and the ease with which scientific research can be conducted in the Area;
- facilitate non-destructive paleontological and geological scientific research in the Area;
- create a public exhibition and improve understanding of the values protected in ASPA No 125, and
- promote education and awareness about the values of this remarkable area.

3. Management activities

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

- When visitors are approaching the facilities of the Fildes Peninsula (stations, bay and airport) and upon their arrival, all persons should be informed of the existence of ASPA No 125, its location and the relevant provisions of the management plan.
- There shall be copies of the management plan and maps of the Area that clearly indicate its location on all units conducting logistical and scientific activities on Fildes Peninsula, specially in all the stations, bases and logistic facilities of the Fildes Peninsula.
- The transit to reach the zones will be developed following only the pre-existent demarked routes in Fildes Peninsula. In the places where there are not a pre-existent demarked routes, the transit must developed only by foot.
- On the access routes to Fossill Hill, Halfthree Point, Skua Cove, Gradzinski Cove, Holz Stream (Madera Stream), Glacier Dome Bellingshausen (Collins glacier), Suffield Point and Fossil Point, signs shall be erected that show the boundaries of the Area and clearly indicate restricted access ("Entry forbidden. Antarctic Specially Protected Area"), so as to avoid accidental entry into the Area.
- Signs installed in the Area should be secure, maintained in good condition and not harm the environment.
- The management plan shall be revised periodically to ensure protection of the values of the ASPA.

4. Period of designation

Designated for an indefinite period.

5. Maps

Map 1: Location of Fildes Peninsula, King George Island (25 de Mayo), South Shetland Islands Archipelago.

Map 2: Boundaries of Antarctic Specially Protected Area No 125, Fildes Peninsula.

Map 3: Location of zone 125a, Fossil Hill.

Map 4: Location of zone 125b, Holz Stream (Madera Stream).

Map 5: Location of zone 125c, Glacier Dome Bellingshausen (Collins glacier).

Map 6: Location of zone 125d, Halfthree Point.

Map 7: Location of zones 125e and 125f, Suffield and Fossil Points, respectively.

Map 8: Location of zone 125g, Gradzinski Cove.

Map 9: Location of zone 125h, Skua Cove.

6. Description of the Area

i. Geographical coordinates, boundary markers and natural features

GENERAL DESCRIPTION

The Fildes Peninsula is the most extensive coastal area free of snow in summer in King George Island (25 de Mayo), with a length of around 7 km. In general terms, appears as a tableland made up of old coastal landforms, with an average height of 30 m above sea level and rocky outcrops around the 100 meters. It is a territory with its own special characteristics, different from those of the rest of the island, which is covered by the ice from Collins Glacier.

ZONES

This Management Plan consider 8 different zones for the ASPA No 125, four of them located in the southern coast of Fildes Peninsula, two of them in the northern coast, one in the central southern part of Fildes and the last one, in the vicinity of the glacier:

125a: Zone located on Fossil Hill, in the central south part of Fildes Peninsula (see Map 3). It considers an area of 0.568 km^2.

125b: Zone located by Holz Stream (Madera Stream), in the southeast part of Fildes Peninsula (see Map 4). It zone consider two areas crossed by the road that connect Artigas Station with the other Stations in the southern part of the peninsula. The total area compromised is 0.178 km^2 (zone 125b1: 0.104 km^2 and zone 125b2: 0.074 km^2).

125c: Is the buffer zone surrounding the snout of Glacier Dome Bellingshausen (Collins glacier) (Map 5). Compromise an area of 1.412 km^2.

125d: Is the zone Area surrounding Halfthree and Dario Points, facing Maxwell Bay (Fildes Bay) (Map 6). The zone has an area of 0.019 km^2.

125e: It is the zone located at Suffield Point, in front of Maxwell Bay (Fildes Bay) (Map 7). It has an area of 0.024 km^2.

125f: Zone that compromise Fossil Point, facing Maxwell Bay (Fildes Bay) (Map 7), with an area of 0.013 km^2.

125g: Zone located in the northern part of Gradzinski Cove, also known as Biologists Bay, with an access from Klotz Valley (Map 8). The zone is located in the northern coast of Fildes Peninsula and has an area of 0.021 km^2.

125h: The zone in the vicinity of Skua Cove, covered by the Fuschloger beach, in the northern coast of Fildes Peninsula (Map 9). The zone has a total area of 0.117 km^2.

The transit to and from each one of these zones must be developed following only the pre-existent demarked routes in Fildes Peninsula. In the places where there are not a pre-existent demarked routes, the transit must developed only by foot.

PLANT FOSSILS

The palaeobotanical importance of Fildes Peninsula has been remarked by several researches during at least fifty years. A high level of diversity of Pteridophyta and Magnoliophyta could be inferred from the table 1, exhibiting the floral diversity of the Fildes Peninsula Group.

Table 1. Plant fossil taxa (at family taxonomic rank) present in the Upper Cretaceous and Eocene outcrops of Fildes Peninsula.

Principal plant families in the Fildes Peninsula Group					
Sphenophyta	Pteridophyta	Lycophyta	Cycadophyta	Coniferophyta	Magnoliophyta
Equisetaceae	Adiantaceae	Selaginellaceae	Zamiaceae	Araucariaceae	Araliaceae
	Aspleniaceae			Cupressaceae	Caesalpinaceae
	Blechnaceae			Podocarpaceae	Hydrangeaceae
	Cyatheaceae				Malvaceae
	Dicksoniaceae				Poaceae
	Gleicheniaceae				Anacardiaceae
	Hymenophyllaceae				Cochlospermaceae
	Lophosoriaeceae				Cunoniaceae
	Osmundaceae				Dilleniaceae
	Polypodiaceae				Gunneraceae
	Salviniaceae				Icacinaceae
	Schizeaceae				Lauraceae
					Loranthaceae
					Melastomataceae
					Monimiaceae
					Myricaceae
					Myrtaceae
					Nothofagaceae
					Proteaceae
					Rhamnaceae
					Sapindaceae
					Sterculiaceae

Source: Cao 1989, 1994; Czajkowski & Rosler 1986; Dutra 2001; Dutra & Batten 2000; Gazdzicki & Wrona 1982; Li 1991, Li & Shen 1989; Li 1994; Li & Zhou 2007; Li & Shen 1994; Liu 1990; Lyra 1986; Palma-Heldt 1987; Perea *et al.* 2001; Poole *et al.* 2000; Poole *et al*. 2001; Shen 1989, 1994, 1992a, 1992b, 1994a, 1994b; Song & Cao 1994; Sun *et al*. 2002a; Sun *et al*. 2002b; Sun *et al*. 2005; Tatur & Del Valle 1986; Torres & Meon 1993; Torres & Meon 1990; Troncoso 1986; Vakhrameev 1991; Xue 1994; Xue *et al*. 1996; Zhang & Wang 1994; Zhou & Li 1994a; Zhou & Li 1994b; Zhou & Li 1994c.

PLANTS

The amount and type of terrestrial vegetation depends on relief, soil moisture content, and the degree of soil enrichment from birds and seals. The Region is home to two flowering plants - Antarctic hair grass (*Deschampsia antarctica*) and Antarctic pearlwort (*Colobanthus quitensis*). Some areas are densely covered by moss carpets. A total of about 175 lichen and 40 moss species have been identified in the Region (Peter *et al.* 2008).

Freshwater phytoplankton (Chlorophyceae-diatomes) biomass is low. The zooplankton is primarily composed of *Pseudoboeckella poppei* and *Branchinecta gaini* (Bonner & Smith 1985). The shoreline assemblages are made up of important communities of *Nacella concinna* and algae populations, such as *Phyllogigas*, *Desmarestia*, *Leptogomia*, *Iridaea*, *Gigartina*, *Ascoseira* and *Phaerus* (Bonner & Smith 1985).

VERTEBRATES

12 bird species have been identified on the Peninsula, including the Brown skua (*Catharacta antarctica lonnbergi*), South polar skua *(Catharacta maccormicki)*, Snowy sheathbill (*Chionis alba*), Cape petrel (*Daption capense*), Kelp gull (*Larus dominicanus*), Southern giant petrel (*Macronectes giganteus*), Wilson's storm petrel (*Oceanites oceanicus*), Blackbellied storm petrel (*Fregetta tropica*), Adelie penguin (*Pygoscelis adeliae*), Chinstrap penguin (*P. antarctica*), Gentoo penguin (*P. papua*) and Antarctic tern (*Sterna vittata*).

Of the mammal species, the most important are the Weddell seals (*Leptonychotes weddellii*) and the Southern elephant seals (*Mirounga leonina*). At the end of the summer, Antarctic fur seals (*Arctocephalus gazella*) are found in large numbers. Antarctic fur seals pups had been recorded in the northern coast of Fildes Peninsula; nevertheless, the breeding success has not been informed. Occasionally, Leopard seals (*Hydrurga leptonyx*) visit the area.

ii. Special and managed zones within the Area

There are no special zones within the Area.

iii. Structures within and near the Area

There are no structures in the Area.

iv. Location of other protected areas within close proximity of the Area

There are four protected areas in Nelson and King George (25 de Mayo) Islands, close to Fildes Peninsula. The nearest one is Ardley Island, ASPA No 150, about 1 km east from Fossil Hill and 2 km south of Suffield Point. ASPA No 128, on the western shore of Admiralty Bay, is located about 25.3 km northeast of Fildes Peninsula. Also in King George Island (25 de Mayo), ASPA No 132, Potter Peninsula, is approximately 15 km southeast of Fildes Peninsula. Finally, Harmony Point, ASPA No 133, is located around 18 km southwest of Fossil Hill.

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:

- permits will be issued only for the purposes specified in section 2 of the management plan;
- permits shall be issued for a stated period;
- the actions permitted will not jeopardize the natural ecological or scientific values of the Area;
- during the stated period, scientific staff present within the Area must carry the permit or an authorized copy thereof;
- visits to the Area shall be allowed, with an authorization of their own national Antarctic representative. Visits shall be recorded in a visitor's book at Escudero Scientific Station (Chile), specifying the date and purpose of the visit, as well as the number of visitors.
- A report of the visit shall be presented to the appropriate national authority when the permit ends or at the end of the season.
- Permits shall be issued for scientific research that is justified and that guarantees minimal impact to the outcrops. Duplication of research should be avoided.
- Permits issued for visits to or stays in the Area shall specify the extent and duration of the activities and the maximum number of persons authorized to visit the area.

i. Access to and movement within the Area

Access to the ASPA shall be on foot, and the movement within the Area shall be only on foot.

On foot

Only permit holders with authorized entry into the Area shall be permitted to access it on foot.

Pedestrian traffic is restricted to the trails indicated on the maps, which are annexed to this management plan. The access to each zone is shown in the maps.

Vehicle access

Entry into the Area by vehicles of any kind is strictly forbidden.

ii. Activities that are or may be conducted within the Area, including restrictions on time or place

- Research on fossil outcrops and other environmental studies that cannot be conducted elsewhere;
- Essential management activities, including monitoring;
- Educational visits to the Fildes paleontological museum in the Chilean Station "Profesor Julio Escudero", located outside the ASPA 125, but with a collection of fossils from this area.

iii. Installation, modification or removal of structures

Installation of structures or scientific equipment in the Area shall only be permitted for scientific or managment purposes, and must be approved by the appropriate national authority.

All installations shall be removed when they are no longer required.

iv. Location and regulation of field camps

Camping is not permitted in the Area, given access to facilities at the stations.

v. Restrictions on materials and organisms that can be brought into the Area

No living organisms shall be introduced into the Area. Chemicals not required for the scientific purposes specified in the permit shall not be brought into the Area. Chemicals introduced for research purposes shall be removed from the Area before the permit expires.

Fuel shall not be stored in the Area.

All materials introduced shall be for a stated period only, shall be stored and handled so that risk of their introduction into the environment is minimized, and shall be removed at or before the conclusion of the stated period. Permanent storage installations shall not be erected in the Area.

vi. Taking or harmful interference with native flora or fauna

Taking or harmful interference with native flora and fauna is prohibited, except in accordance with a permit issued under Arcticle 3 of Annex II to the Madrid Protocol. Where the activity involves removing or tampering with native flora or fauna, the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica should be used as a minimum standard.

vii. Collection or removal of anything not brought into the Area by the permit holder

Material not brought into the Area by the permit holder 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. Removal of dead biological specimens or geological samples for scientific purposes must not exceed levels that affect the other species or values in the Area, and may only be taken for scientific studies.

Human waste produced due the development of any activities, shall be removed from the Area.

viii. Disposal of waste

All waste must be removed from the area.

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 conduct scientific research, biological monitoring and site inspection activities, which may involve the collection of limited samples of rocks for scientific purposes.
- To help maintain the ecological and scientific values of the Area, visitors shall take special precautions against the introduction of non-native materials and organisms.
- Long-term monitoring sites should be appropriately marked on the map and at the site.
- At the Artigas, Bellingshausen, Escudero, Frei and Great Wall stations, a copy of the management plan and a map showing the boundaries of the ASPA should be placed in full view. Free copies of the management plan shall be made available.

x. Requirements for reports

- Parties should ensure that the principal holder of each permit issued submit to the appropriate authority a report describing the activities undertaken.
- The report shall include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of the Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas, appended to Resolution 2 (1998). 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.
- Said descriptions should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan.
- Parties shall, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the Management Plan and in organizing the scientific use of the Area.

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ANNEX: MAPS

Map 1: Location of Fildes Peninsula, King George Island (25 de Mayo), South Shetland Islands Archipelago.

Map 2: Boundaries of Antarctic Specially Protected Area No 125, Fildes Peninsula.

Map 3: Location of zone 125a, Fossil Hill.

Map 4: Location of zone 125b, Holz Stream (Madera Stream).

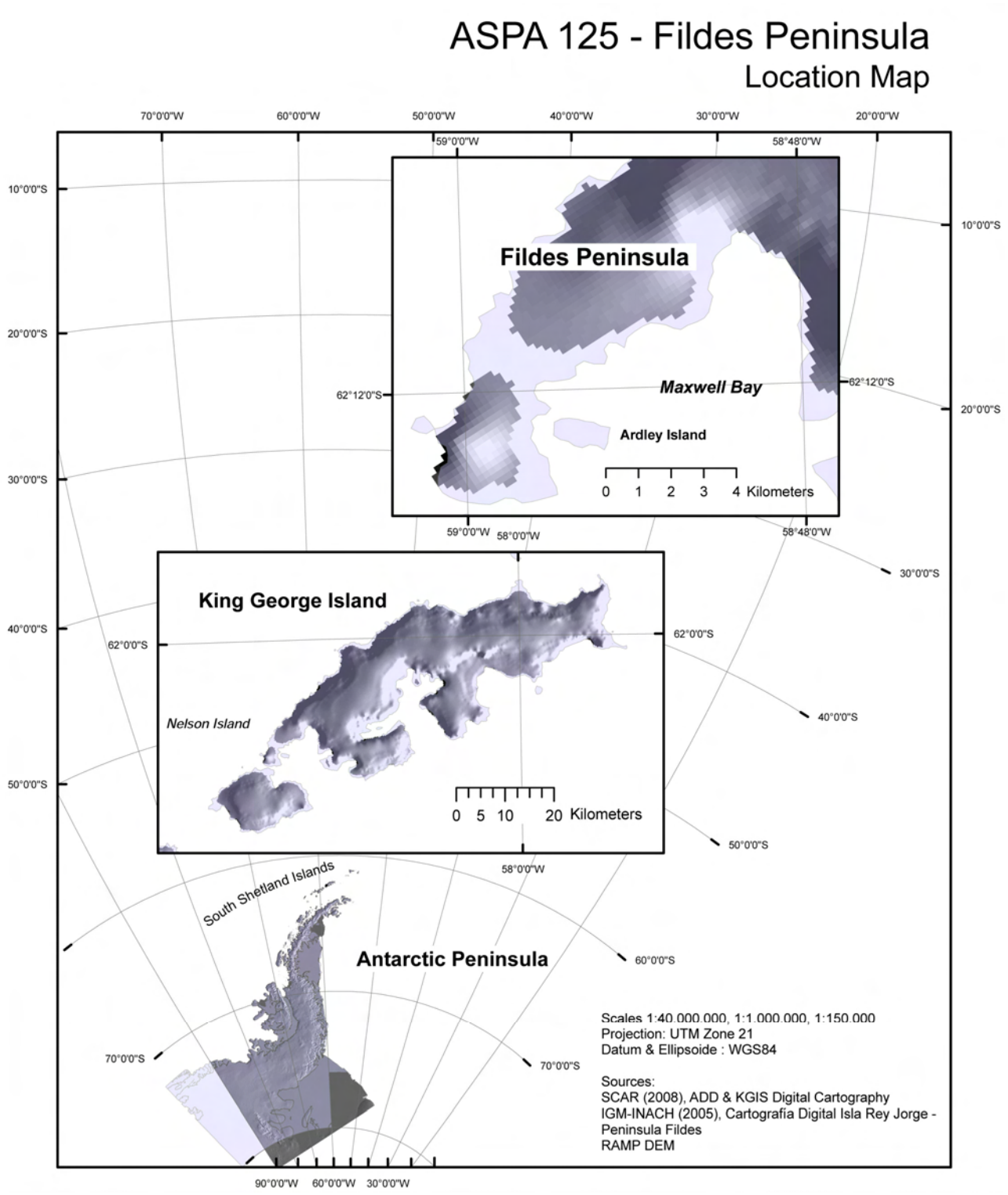
Map 5: Location of zone 125c, Glacier Dome Bellingshausen (Collins glacier).

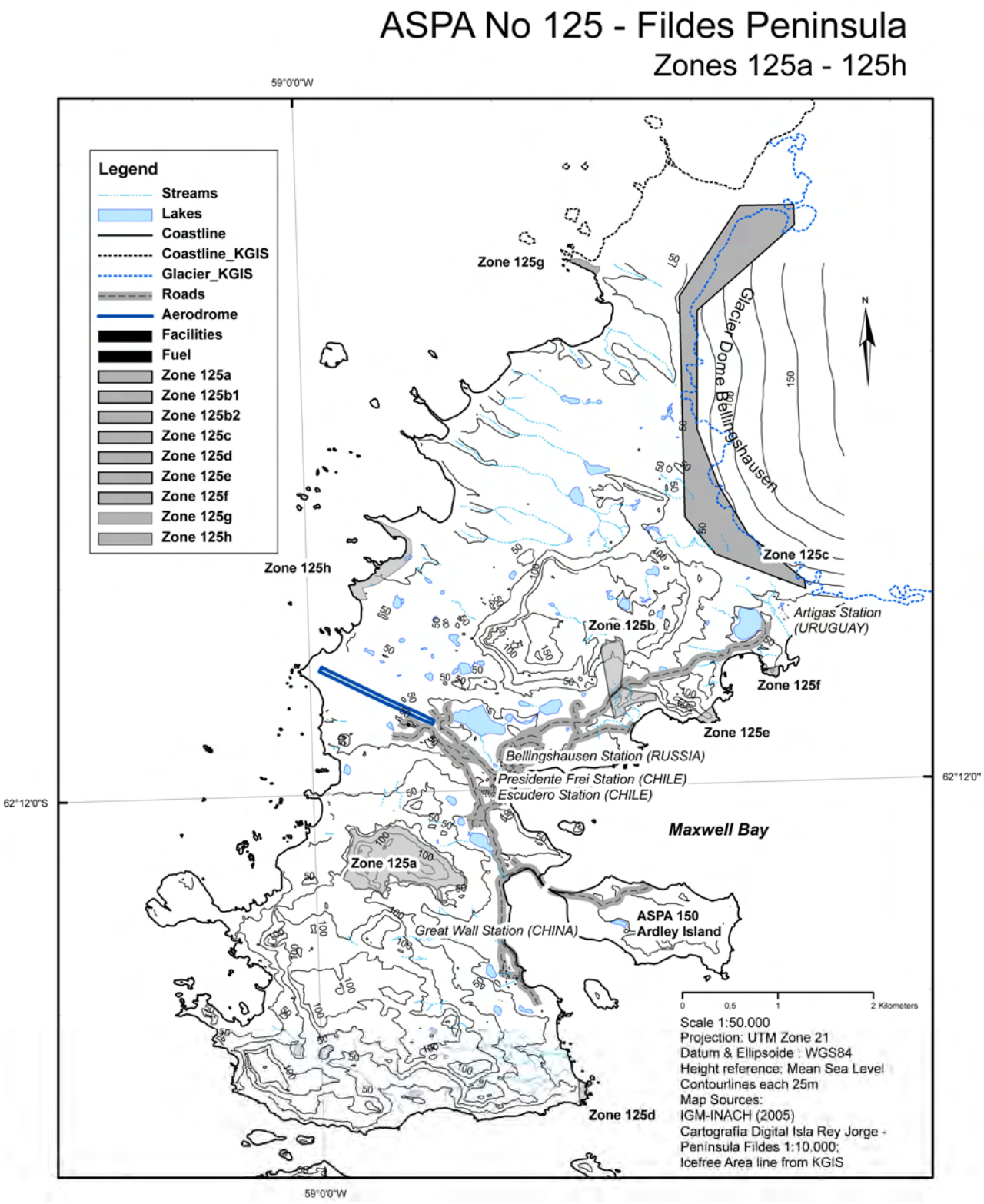
Map 6: Location of zone 125d, Halfthree Point.

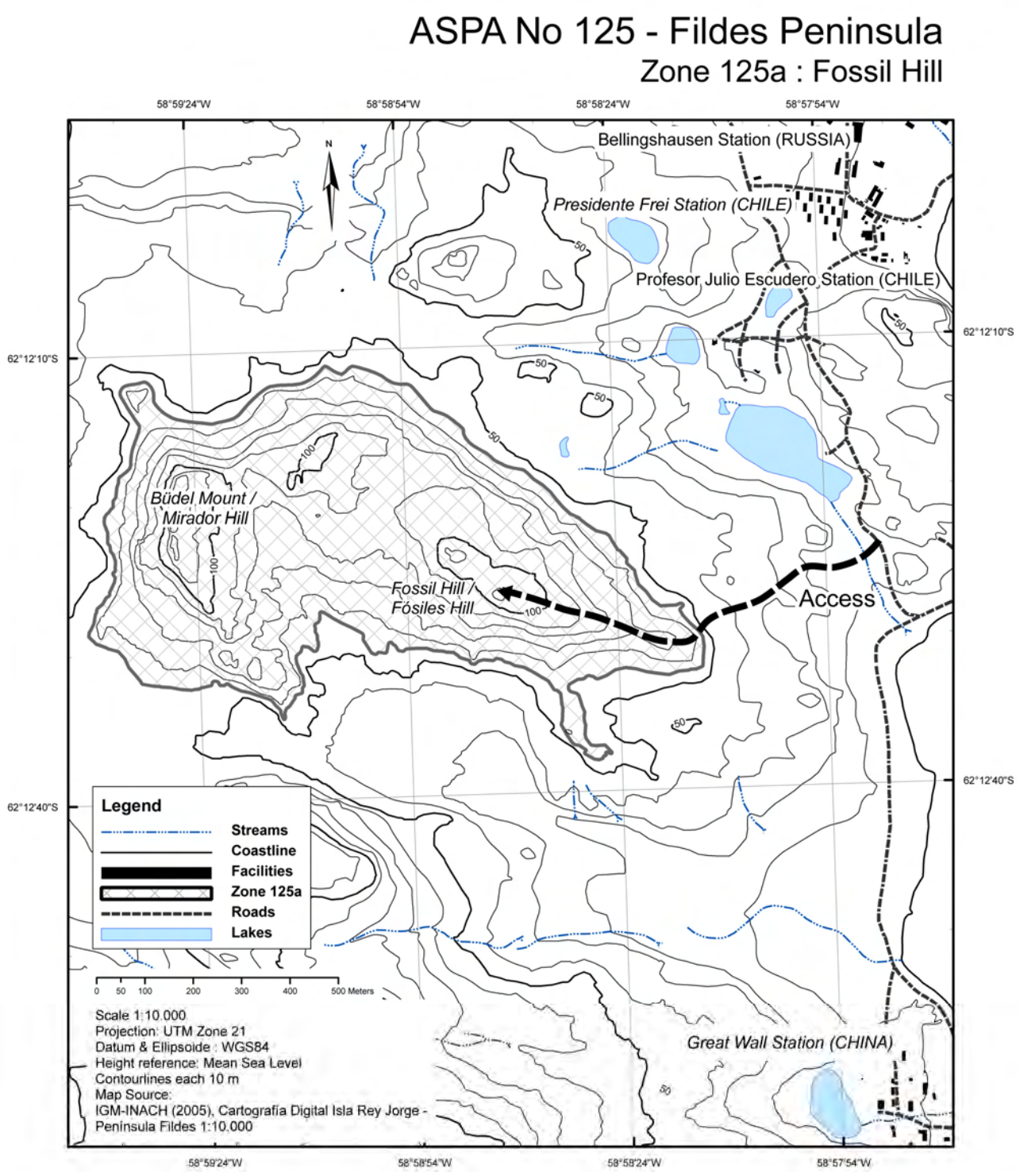
Map 7: Location of zones 125e and 125f, Suffield and Fossil Points, respectively.

Map 8: Location of zone 125g, Gradzinski Cove.

Map 9: Location of zone 125h, Skua Cove.

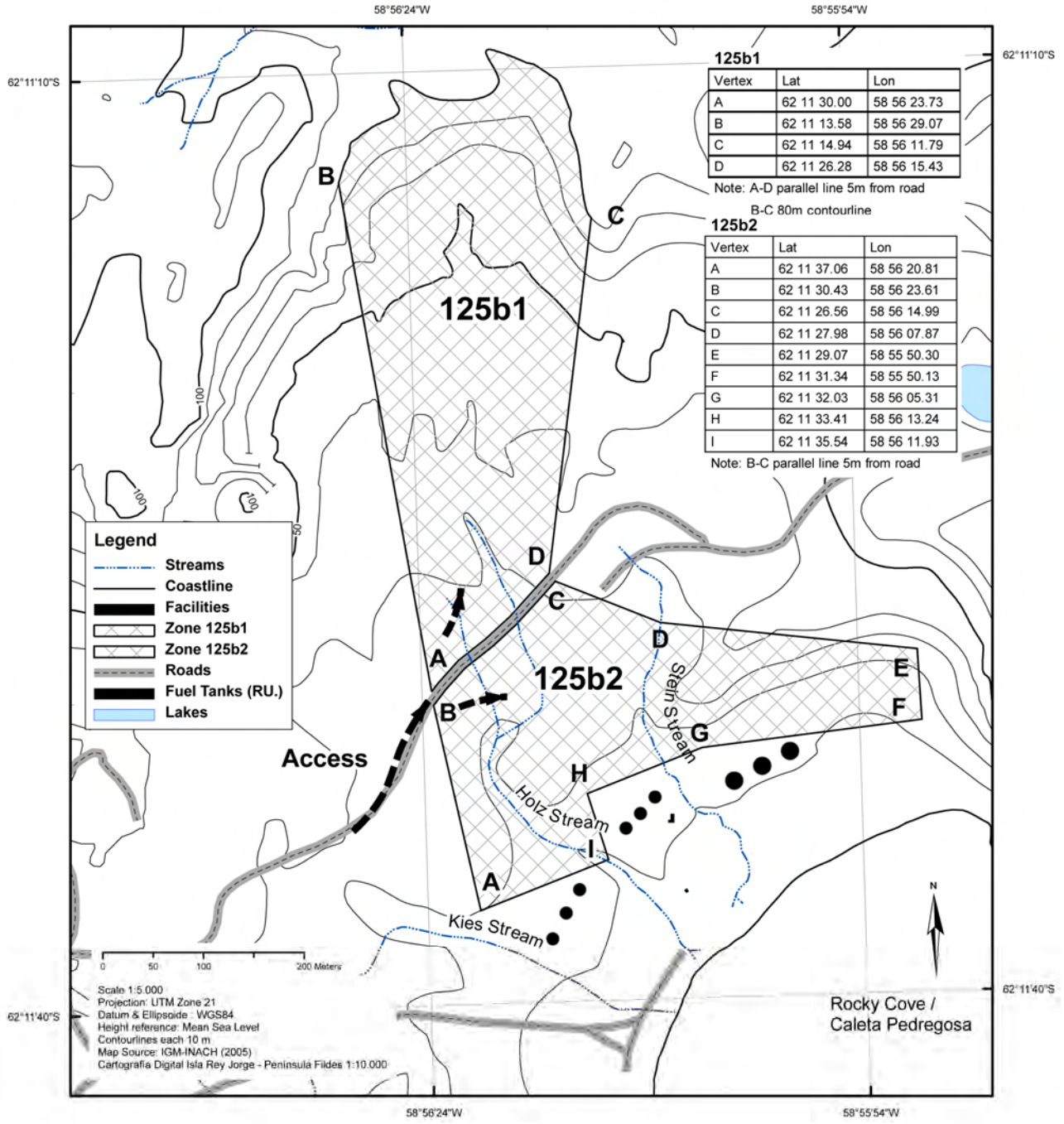

ASPA 125 - Fildes Peninsula
Location Map
Fildes Peninsula
Maxwell Bay
Ardley Island
0 1 2 3 4 Kilometers
King George Island
Nelson Island
0 5 10 20 Kilometers
South Shetland Islands
Antarctic Peninsula
Scales 1:40.000.000, 1:1.000.000, 1:150.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Sources:
SCAR (2008), ADD & KGIS Digital Cartography
IGM-INACH (2005), Cartografia Digital Isla Rey Jorge - Peninsula Fildes
RAMP DEM


ASPA No 125 - Fildes Peninsula
Zones 125a - 125h
59°0'0"W
62°12'0"S
62°12'0"
Legend
Streams
Lakes
Coastline
Coastline_KGIS
Glacier_KGIS
Roads
Aerodrome
Facilities
Fuel
Zone 125a
Zone 125b1
Zone 125b2
Zone 125c
Zone 125d
Zone 125e
Zone 125f
Zone 125g
Zone 125h
Zone 125g
Glacier Dome Bellingshausen
Zone 125c
Zone 125h
Zone 125b
Artigas Station (URUGUAY)
Zone 125f
Zone 125e
Bellingshausen Station (RUSSIA)
Presidente Frei Station (CHILE)
Escudero Station (CHILE)
Maxwell Bay
Zone 125a
ASPA 150
Ardley Island
Great Wall Station (CHINA)
Zone 125d
N
0 0,5 1 2 Kilometers
Scale 1:50.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Height reference: Mean Sea Level
Contourlines each 25m
Map Sources:
IGM-INACH (2005)
Cartografía Digital Isla Rey Jorge - Península Fildes 1:10.000;
Icefree Area line from KGIS

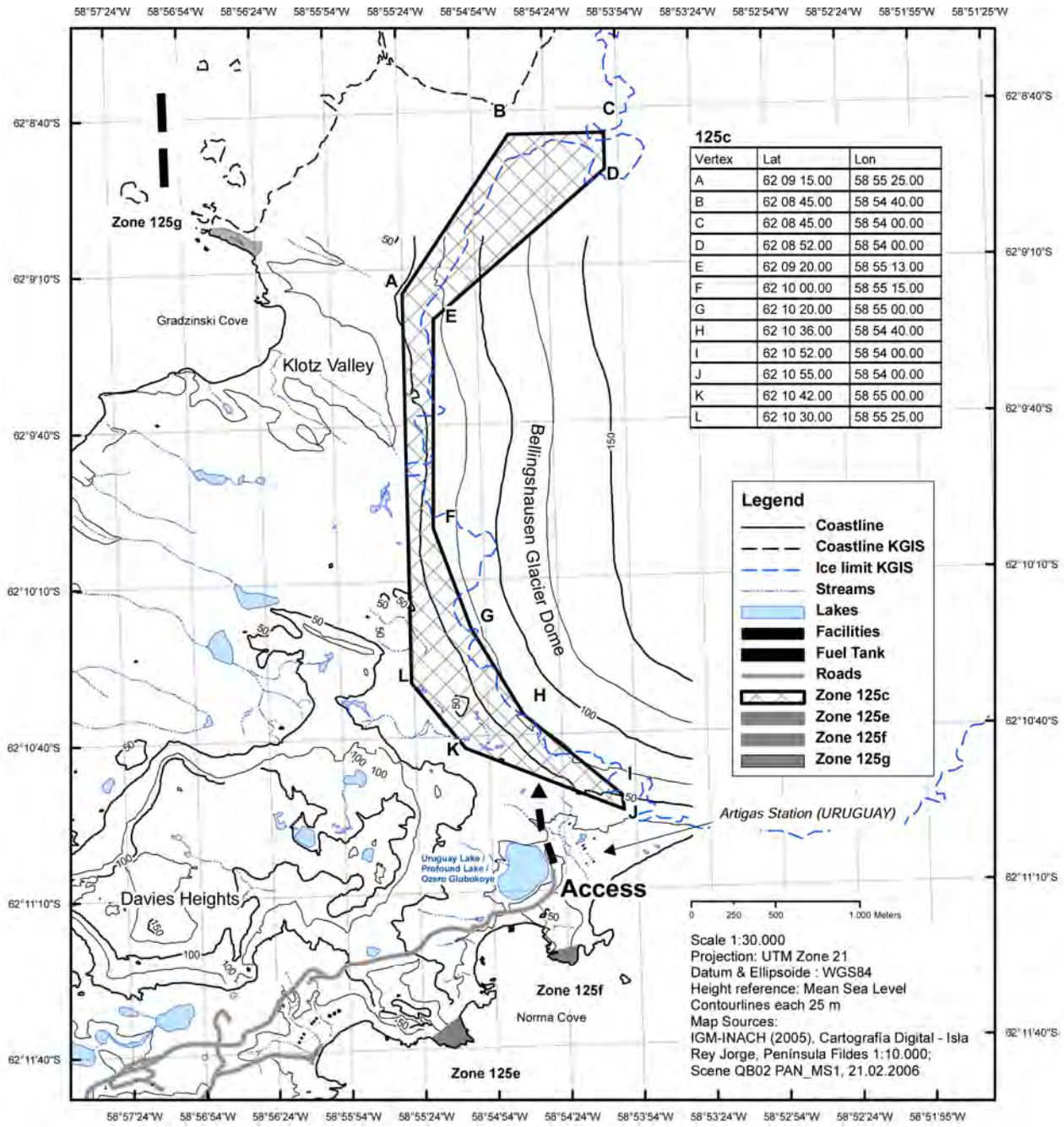

ASPA No 125 - Fildes Peninsula
Zone 125a : Fossil Hill
58°59'24"W
58°58'54"W
58°58'24"W
58°57'54"W
62°12'10"S
62°12'40"S
N
Bellingshausen Station (RUSSIA)
Presidente Frei Station (CHILE)
Profesor Julio Escudero Station (CHILE)
Büdel Mount / Mirador Hill
Fossil Hill / Fósiles Hill
Access
Great Wall Station (CHINA)
Legend
Streams
Coastline
Facilities
Zone 125a
Roads
Lakes
0 50 100 200 300 400 500 Meters
Scale 1:10.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Height reference: Mean Sea Level
Contourlines each 10 m
Map Source:
IGM-INACH (2005), Cartografía Digital Isla Rey Jorge - Península Fildes 1:10.000

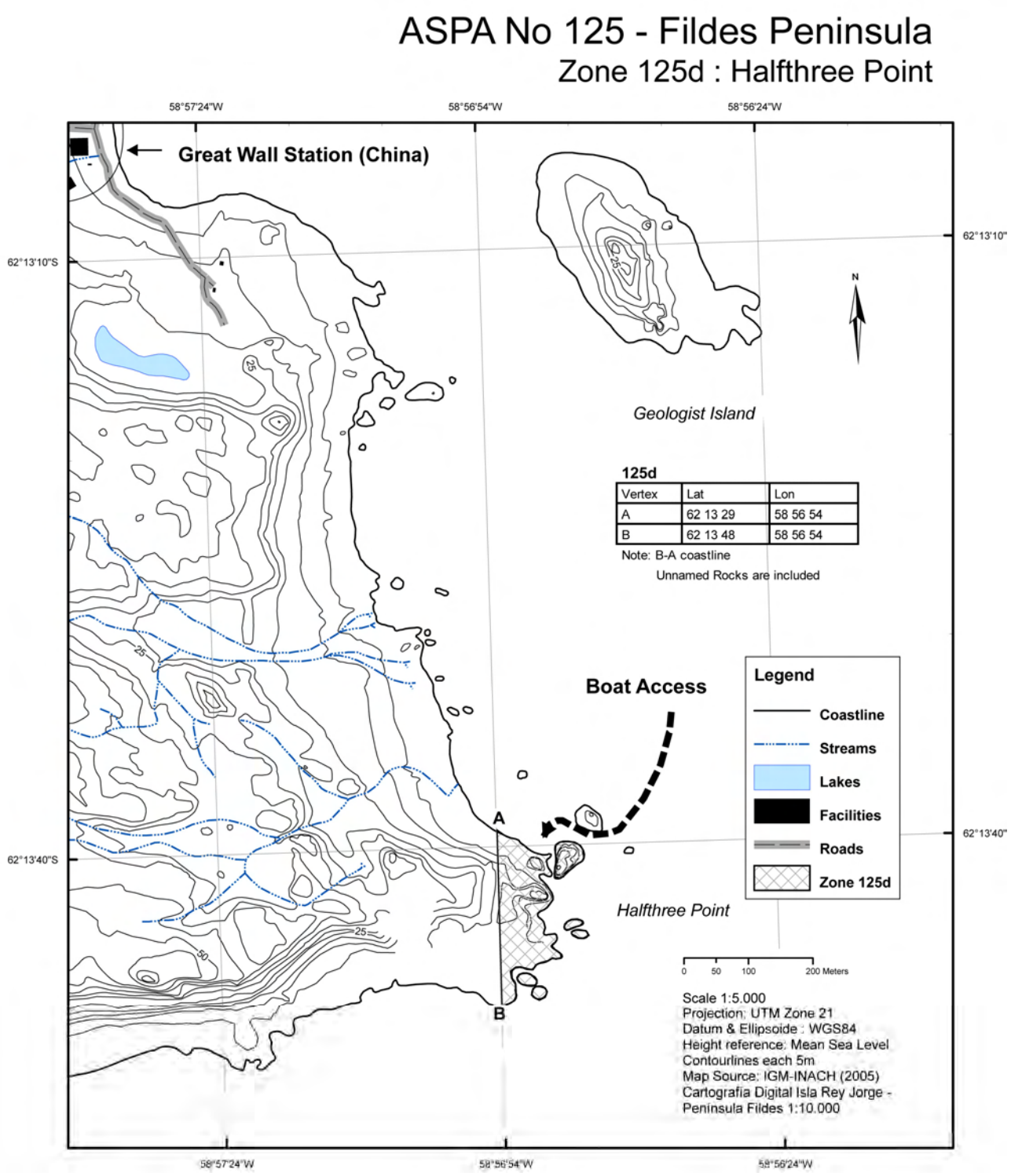
ASPA No 125 - Fildes Peninsula

Zone 125b : Holz Stream (Madera Stream)



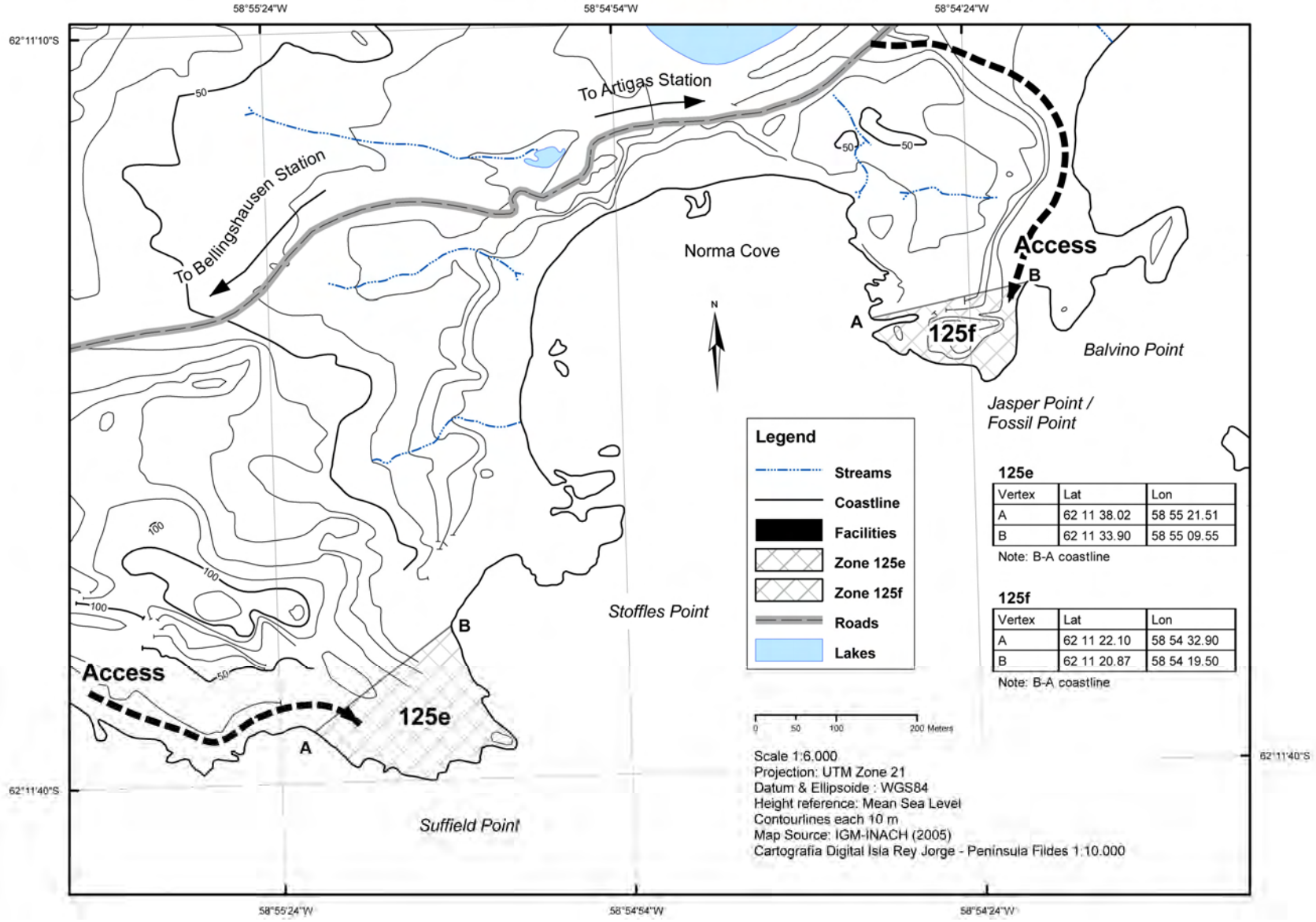
ASPA No 125 - Fildes Peninsula
Zone 125c : Bellingshausen Glacier Dome




ASPA No 125 - Fildes Peninsula
Zone 125d : Halfthree Point
58°57'24"W
58°56'54"W
58°56'24"W
62°13'10"S
62°13'40"S
Great Wall Station (China)
Geologist Island
N
125d
Vertex | Lat | Lon
A | 62 13 29 | 58 56 54
B | 62 13 48 | 58 56 54
Note: B-A coastline
Unnamed Rocks are included
Boat Access
A
B
Halfthree Point
Legend
Coastline
Streams
Lakes
Facilities
Roads
Zone 125d
0 50 100 200 Meters
Scale 1:5.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Height reference: Mean Sea Level
Contourlines each 5m
Map Source: IGM-INACH (2005)
Cartografía Digital Isla Rey Jorge - Península Fildes 1:10.000

ASPA No 125 - Fildes Peninsula

Zone 125e :Suffield Point & Zone 125f : Fossil Point



125e

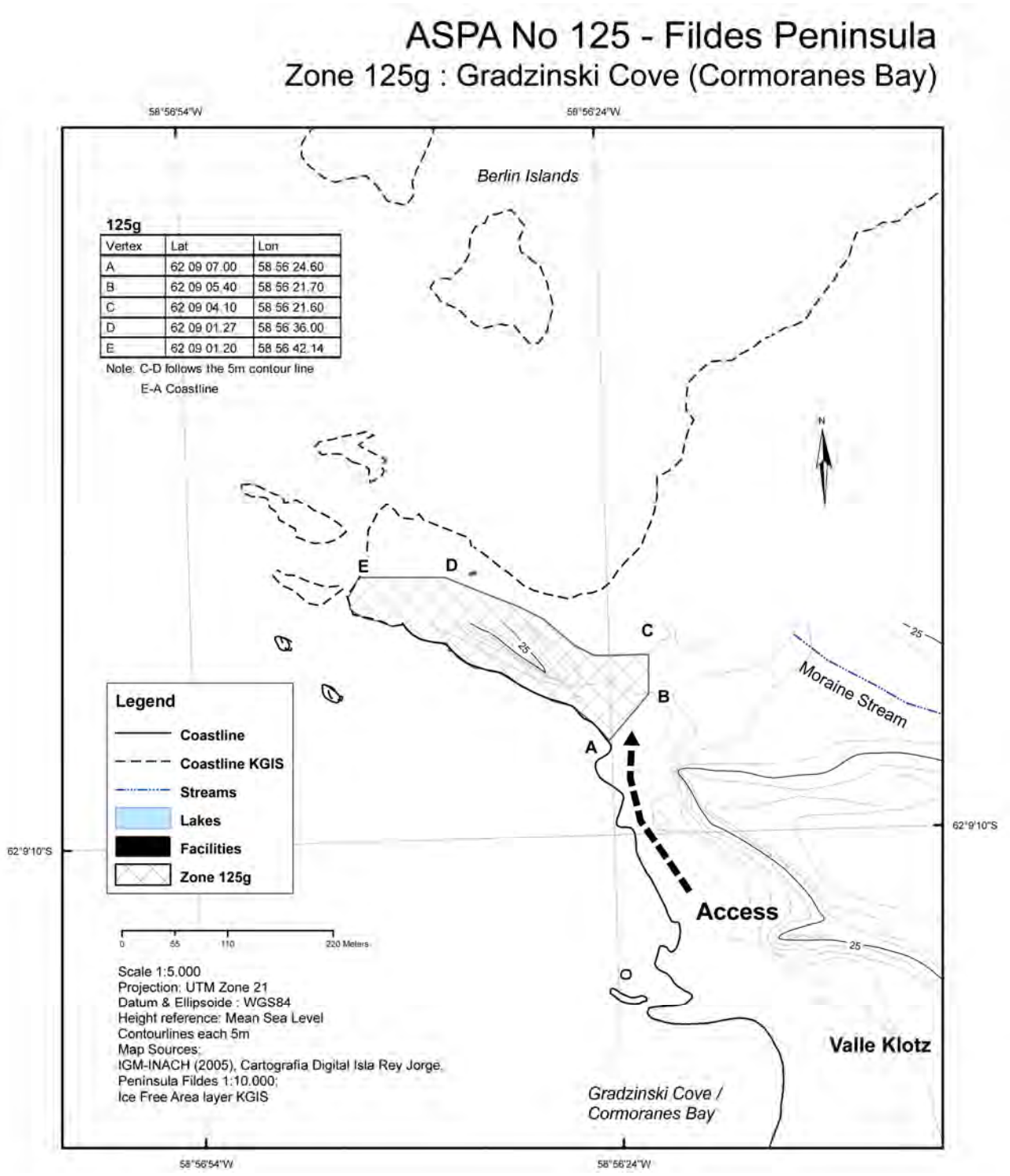
Vertex	Lat	Lon
A	62 11 38.02	58 55 21.51
B	62 11 33.90	58 55 09.55

Note: B-A coastline

125f

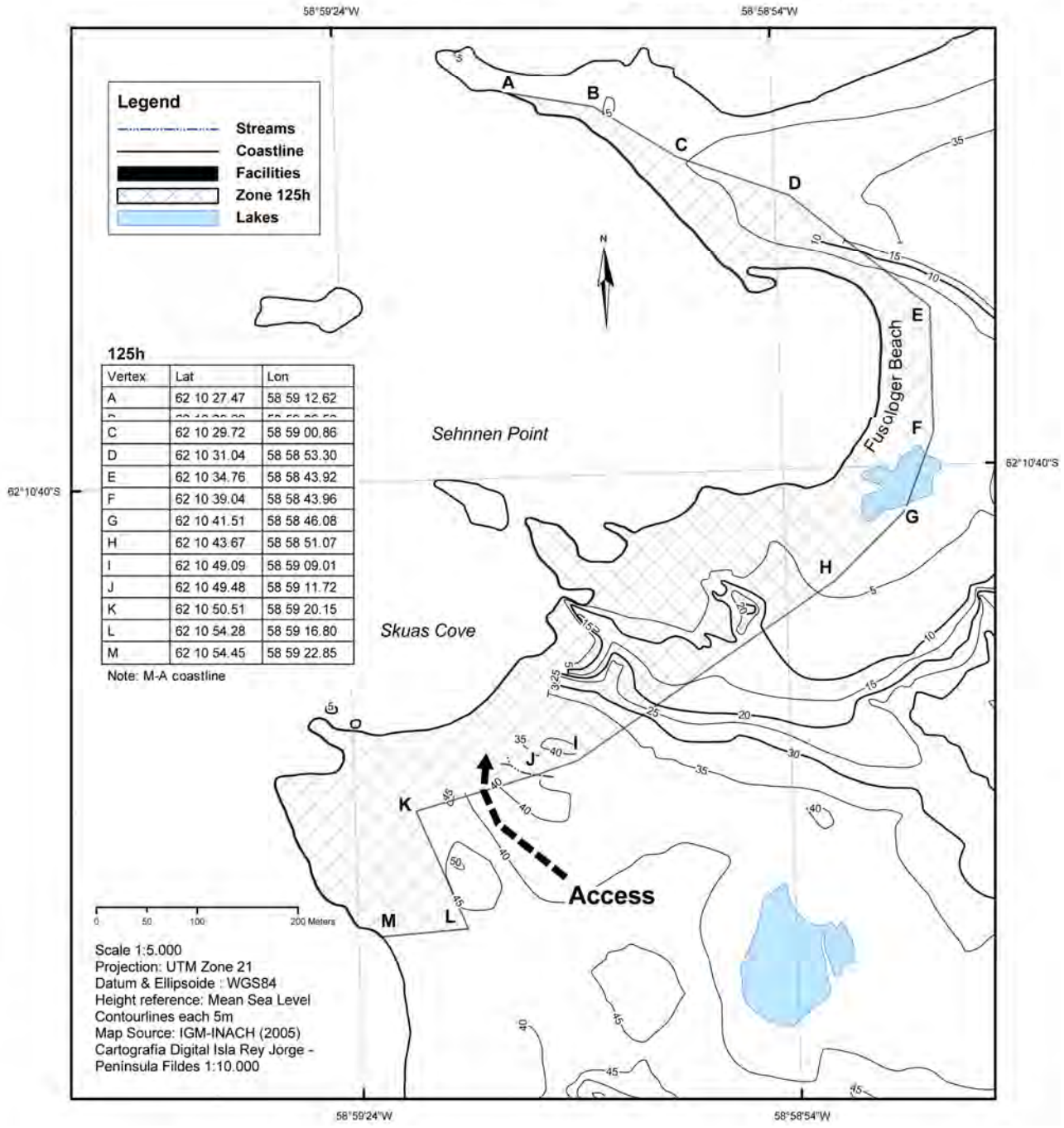
Vertex	Lat	Lon
A	62 11 22.10	58 54 32.90
B	62 11 20.87	58 54 19.50

Note: B-A coastline


ASPA No 125 - Fildes Peninsula
Zone 125g : Gradzinski Cove (Cormoranes Bay)
58°56'54"W
58°56'24"W
Berlin Islands
125g
Vertex | Lat | Lon
A | 62 09 07.00 | 58 56 24.60
B | 62 09 05.40 | 58 56 21.70
C | 62 09 04.10 | 58 56 21.60
D | 62 09 01.27 | 58 56 36.00
E | 62 09 01.20 | 58 56 42.14
Note: C-D follows the 5m contour line
E-A Coastline
N
E
D
C
B
A
25
Moraine Stream
Legend
Coastline
Coastline KGIS
Streams
Lakes
Facilities
Zone 125g
62°9'10"S
Access
0 55 110 220 Meters
Scale 1:5.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Height reference: Mean Sea Level
Contourlines each 5m
Map Sources:
IGM-INACH (2005), Cartografia Digital Isla Rey Jorge.
Peninsula Fildes 1:10.000;
Ice Free Area layer KGIS
Valle Klotz
Gradzinski Cove /
Cormoranes Bay

ASPA No 125 - Fildes Peninsula

Zone 125h : Skuas Cove



125h

Vertex	Lat	Lon
A	62 10 27.47	58 59 12.62
C	62 10 29.72	58 59 00.86
D	62 10 31.04	58 58 53.30
E	62 10 34.76	58 58 43.92
F	62 10 39.04	58 58 43.96
G	62 10 41.51	58 58 46.08
H	62 10 43.67	58 58 51.07
I	62 10 49.09	58 59 09.01
J	62 10 49.48	58 59 11.72
K	62 10 50.51	58 59 20.15
L	62 10 54.28	58 59 16.80
M	62 10 54.45	58 59 22.85

Note: M-A coastline

Scale 1:5.000
Projection: UTM Zone 21
Datum & Ellipsoide : WGS84
Height reference: Mean Sea Level
Contourlines each 5m
Map Source: IGM-INACH (2005)
Cartografia Digital Isla Rey Jorge - Peninsula Fildes 1:10.000

Management Plan for Antarctic Specially Protected Area No. 136

CLARK PENINSULA, BUDD COAST, WILKES LAND

Introduction

Clark Peninsula was originally designated as Site of Special Scientific Interest No. 17 under Recommendation 8 (1985) and revised Management Plans were adopted under Measure 1 (2000) and under Measure 1 (2006). The Area is approximately 9.4 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

The Clark Peninsula ASPA is designated primarily to protect the largely undisturbed terrestrial ecosystem, which supports one of the most extensive and best developed plant communities on continental Antarctica, outside the Antarctic Peninsula. 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 (soil surface) vegetation 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.

The Area provides baseline and comparitive data with which to compare changes in similar moss and lichen communities in the immediate surroundings of Casey station. The cryptogamic plant communities are also monitored to identify short-term microclimate fluctuations and long-term climate change in the region since deglaciation, 8000-5000 years before present.

Significant and relatively undisturbed breeding populations of Adélie penguin *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 it's ecological importance, it's 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.

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. Penguins began to occupy the two points soon after their emergence . 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 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 (66°15’24” S, 110°32’24”E), "Jack's Donga" (unofficial name) refuge hut (66°13’42” S, 110°39’12” E) and at Casey station. Copies of this Management Plan will also be available 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 approximately 9.4 km^2 and is located at 66°15' S, 110°36' E.

The Area comprises all the land on Clark Peninsula northward of the southern boundary line connecting the east side of Powell Cove at a point which originates at 66°15'15" S, 110°31'59" E, through 66°15'29"S, 110°33'26"E to 66°15'21"S, 110°34'00"E to 66°15'24"S, 110°35'09"E to 66°15'37"S, 110°34'40"E to 66°15'43"S, 110°34'45"E, thence to a point to the east-south-east on the Løken Moraines at 66°16'06"S, 110°37'11"E. The eastern boundary is the westernmost limit of the Løken Moraines as far north as a point east of Blakeney Point at (66°14'15" S, 110°38'46" E), and thence to the coast (66°14'15" S, 110°38'06" E), 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 30cm 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 penguins *(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 (3km to the south-west 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 maximum temperatures for the warmest and coldest months to be 2.1° and -11.3°C, and mean minimum temperatures to be -2.6°C and -18.9°C respectively, with extreme temperatures ranging from 9.2° to -37.5°C. The climate is dry with a mean annual snowfall of 195 mm.year^{-1} (rainfall equivalent). There is an annual average of 96 days with gale-force winds, which are predominantly easterly in direction, off the polar ice cap. Snowfall is common during the winter, but the exposed areas are generally scoured by extremely strong winds. 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. Over-snow access to the sea ice by oversnow vehicles for scientific research or management purposes 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 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 south-west 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 135, Northeast Bailey Peninsula (66°17'S, 110°33'E): 2.5 km south-west of Clark Peninsula, across Newcomb Bay, adjacent to Casey station;
- Antarctic Specially Protected Area 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 160, Frazier Islands (66°13’S 110°11’E): approximately 16 km to the north-west 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 activities related to scientific research or essential management purposes. All activities must be 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 generally be from "Wilkes Hilton" refuge hut in the south-west, "Jack's Donga" refuge hut in the north-east, or from the over-snow route between Casey station and "Jack's Donga" by descending the western slope of Løken Moraines in the vicinity east of Stevenson Cove.

Access from Casey to abandoned Wilkes station is via a well-defined marked cane route to the south of the southern boundary of the Area. On approach from Casey to the ASPA, in the area east and north-east of Noonan Cove, a section of the route is split, providing two alternative routes (see Map B). The more southerly route should be used when ice conditions near Noonan Cove allow for safe access. During periods when safe access via the southerly route is not possible, the more northerly route should be followed. As the Casey-Wilkes route is very close to the Area boundary, pedestrian and vehicular traffic should take care not to stray northward.

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 30 m 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

- Compelling scientific research which cannot be undertaken elsewhere and which will not jeopardise the values of the Area.
- Essential management activities, which may include monitoring.

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

A permit will not be issued to introduce living animals, plant material or microorganisms into the Area. To help maintain the ecological and scientific values of the plant communities found in the Area, persons entering the Area shall take special precautions against unintentional 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 footwear and any equipment – including carry cases, sampling equipment and markers – to be used in the Area shall be thoroughly cleaned before entering 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 Annex II, Article 3 of 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 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.
- sampling sites must not be abandoned without being restored, as far as is possible, to the 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(x) Requirements for reports

The principal Permit Holder for each permit issued shall submit to the appropriate national authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas* appended to Resolution 2 (1998). 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 any census data obtained, 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 bird distribution are described in the metadata records of Woehler, E. J. and Olivier, F.

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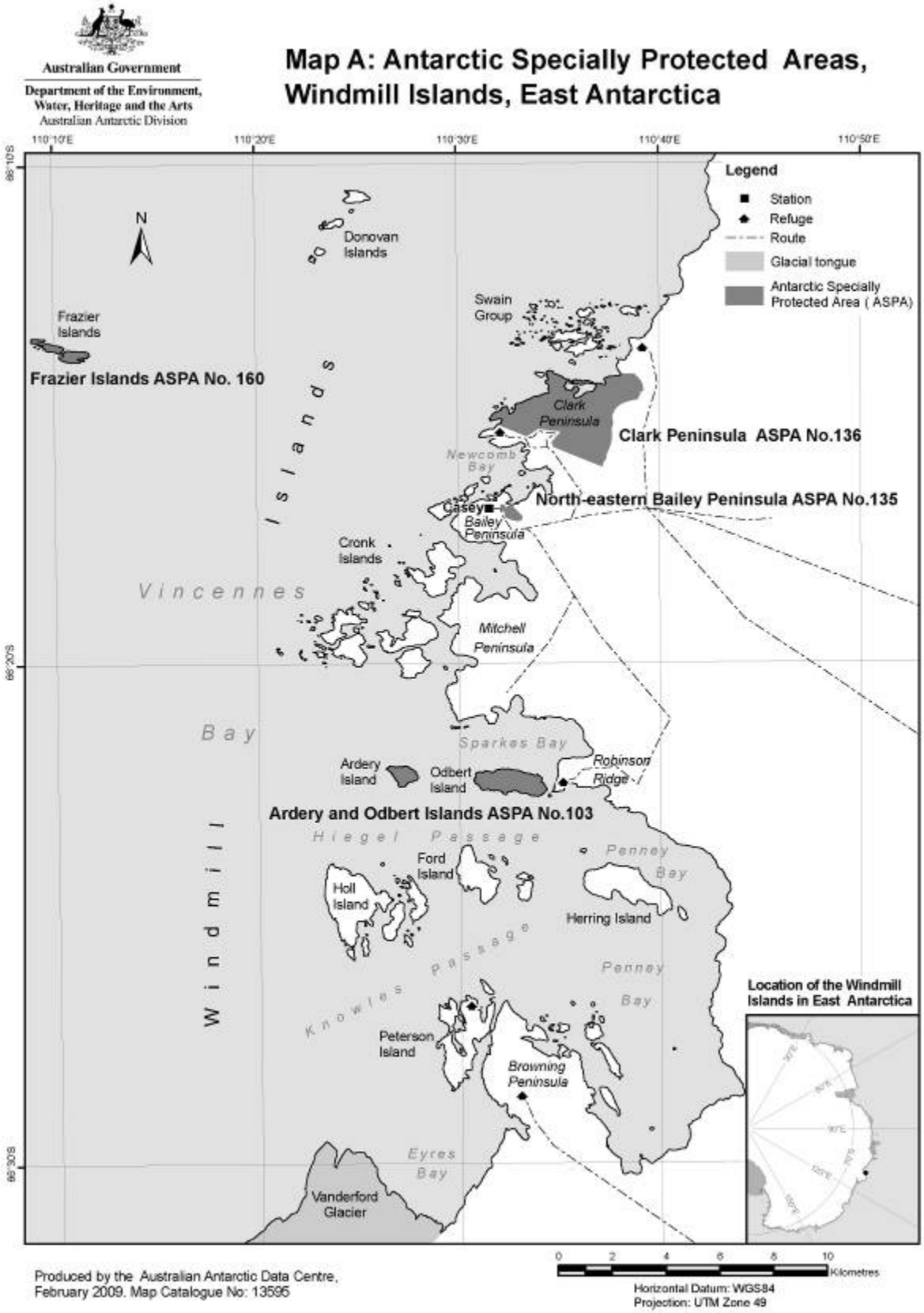
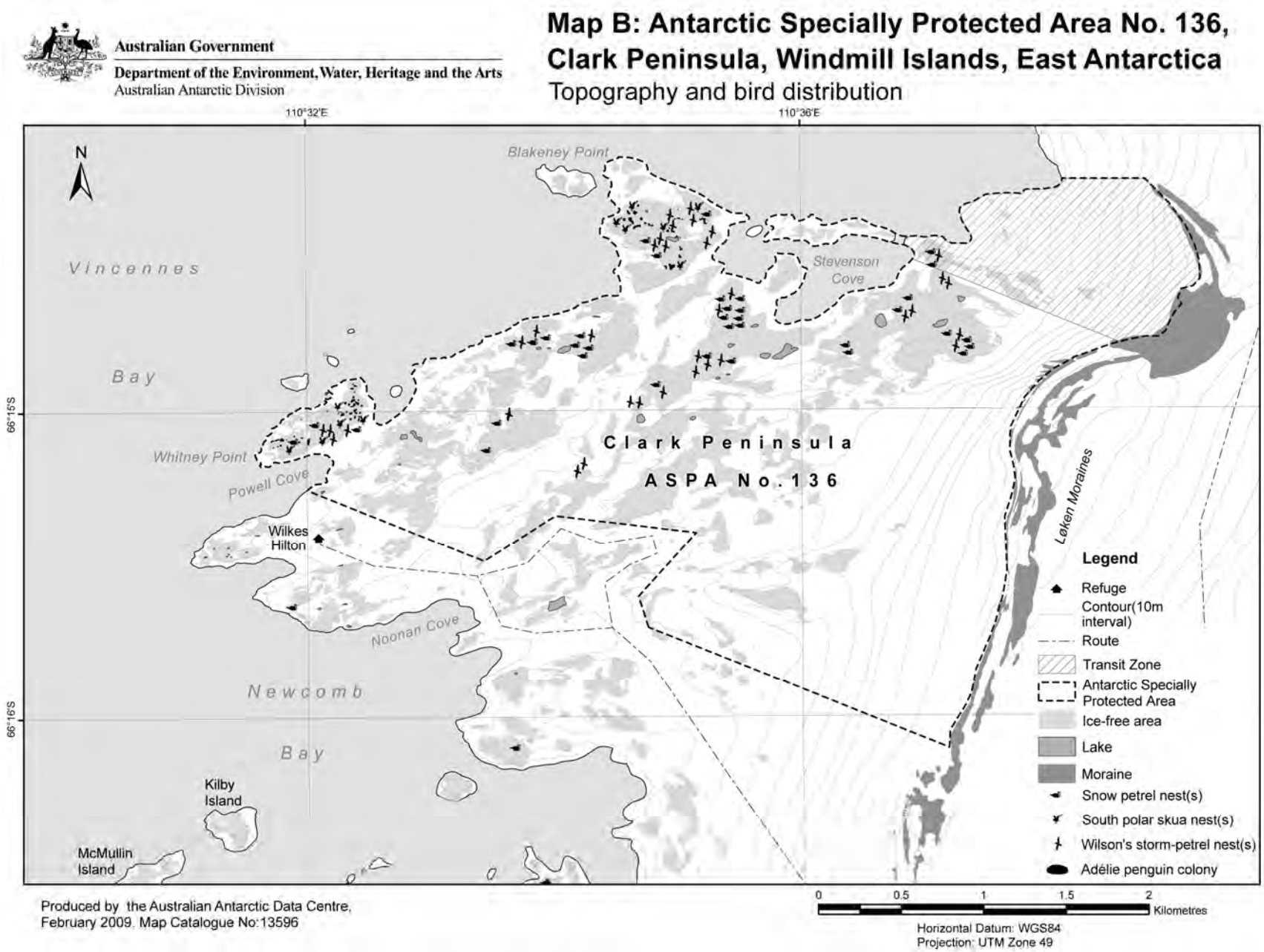
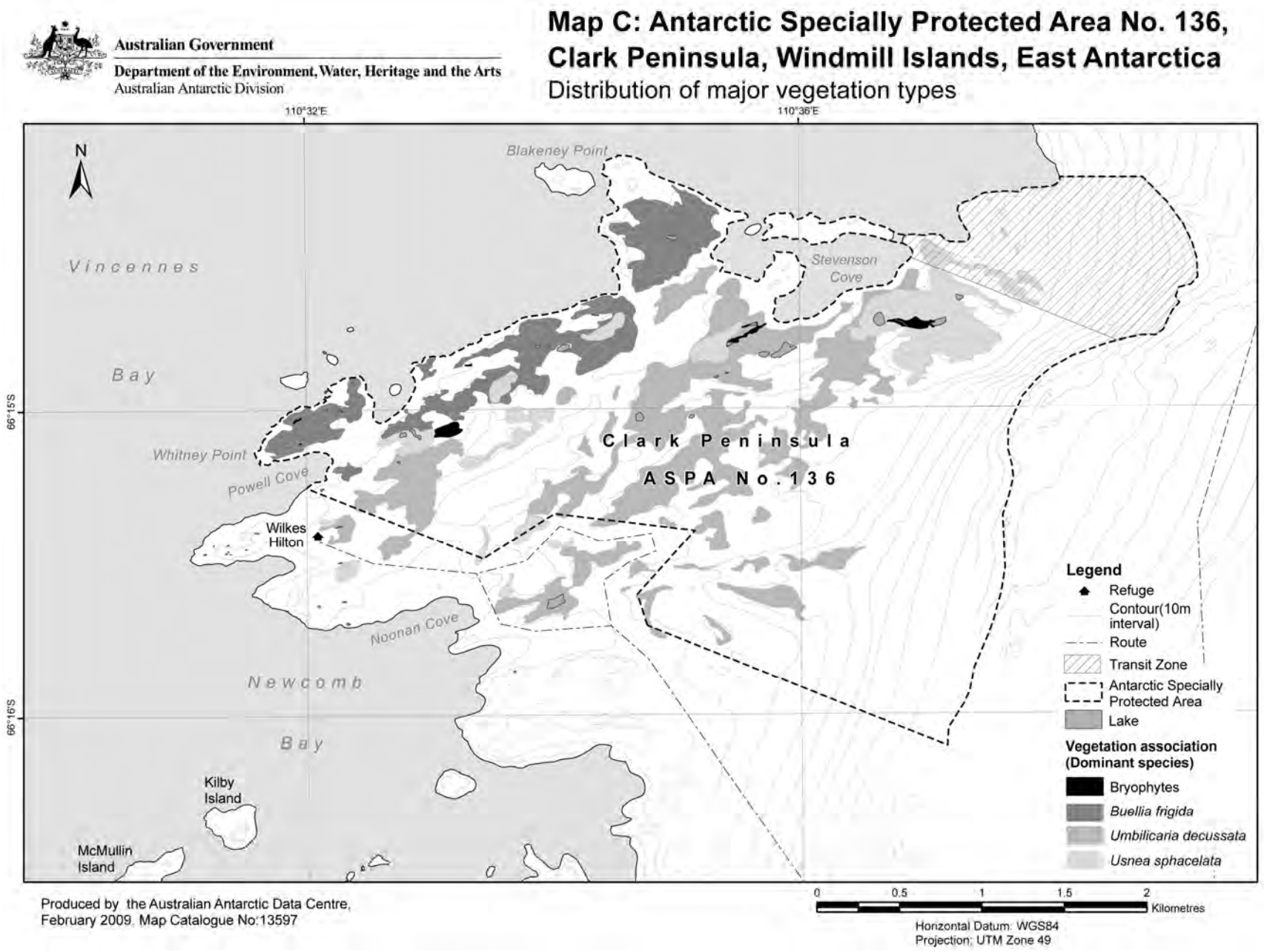
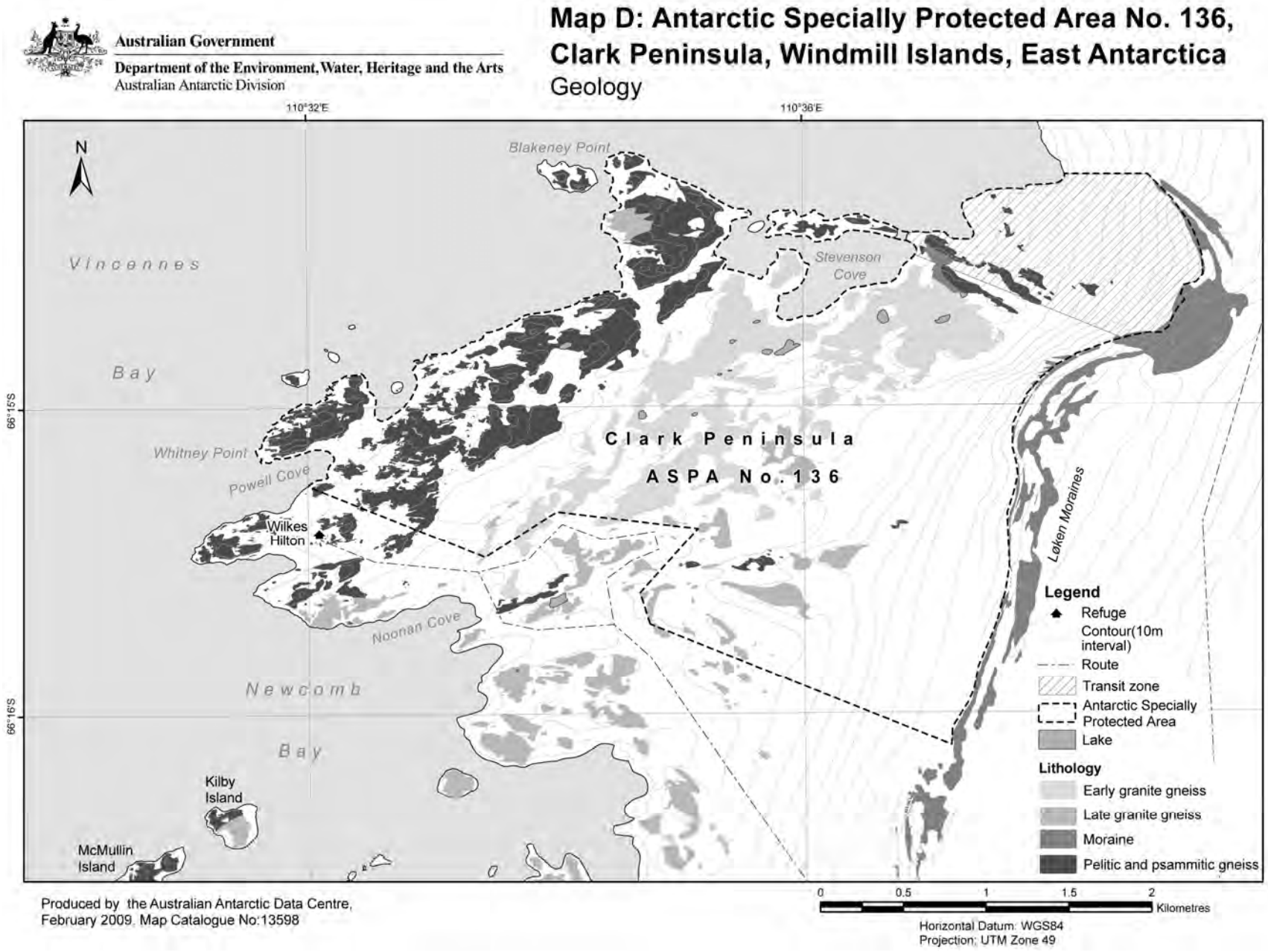

Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Map A: Antarctic Specially Protected Areas, Windmill Islands, East Antarctica
110°10'E
110°20'E
110°30'E
110°40'E
110°50'E
66°10'S
66°20'S
66°30'S
N
Legend
Station
Refuge
Route
Glacial tongue
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
North-eastern Bailey Peninsula ASPA No.135
Bailey Peninsula
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
Knowles Passage
Peterson Island
Browning Peninsula
Eyres Bay
Vanderford Glacier
Windmill Islands
Location of the Windmill Islands in East Antarctica
0 2 4 6 8 10 Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by the Australian Antarctic Data Centre, February 2009. Map Catalogue No: 13595


Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Map B: Antarctic Specially Protected Area No. 136,
Clark Peninsula, Windmill Islands, East Antarctica
Topography and bird distribution
110°32'E
110°36'E
66°15'S
66°16'S
N
Blakeney Point
Vincennes
Bay
Stevenson Cove
Clark Peninsula
ASPA No.136
Whitney Point
Powell Cove
Wilkes Hilton
Noonan Cove
Løken Moraines
Newcomb
Bay
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
0
0.5
1
1.5
2
Kilometres
Produced by the Australian Antarctic Data Centre,
February 2009. Map Catalogue No:13596
Horizontal Datum: WGS84
Projection: UTM Zone 49


Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Map C: Antarctic Specially Protected Area No. 136,
Clark Peninsula, Windmill Islands, East Antarctica
Distribution of major vegetation types
110°32'E
110°36'E
66°15'S
66°16'S
N
Blakeney Point
Vincennes
Bay
Stevenson Cove
Clark Peninsula
ASPA No.136
Whitney Point
Powell Cove
Wilkes Hilton
Noonan Cove
Newcomb
Bay
Kilby Island
McMullin Island
Legend
Refuge
Contour(10m interval)
Route
Transit Zone
Antarctic Specially Protected Area
Lake
Vegetation association (Dominant species)
Bryophytes
Buellia frigida
Umbilicaria decussata
Usnea sphacelata
0 0.5 1 1.5 2
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by the Australian Antarctic Data Centre,
February 2009. Map Catalogue No:13597


Australian Government
Department of the Environment, Water, Heritage and the Arts
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°16'S
N
Blakeney Point
Vincennes
Bay
Stevenson
Cove
Clark Peninsula
ASPA No. 136
Whitney Point
Powell Cove
Wilkes
Hilton
Løken 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,
February 2009. Map Catalogue No:13598

Management Plan for

Antarctic Specially Protected Area No. 142

SVARTHAMAREN

Introduction

Svarthamaren nunatak (71°33'17''S -5°09'12"E to 71°55'12''S-5°15'12"E) is part of the Mühlig-Hoffmanfjella in Dronning Maud Land, Antarctica. The ASPA area is approximately 6.4 km² and consists of the ice-free areas of the Svarthamaren nunatak. Included are also the areas in immediate vicinity of the ice-free areas naturally belonging to the nunatak (i.e. rocks and boulders).

The nunatak has one unique characteristic as it holds the largest known seabird colony in the Antarctica. More than 250 000 pairs of Antarctic petrels (Thalassoica antarctica) is breeding annually here and about 500.000 non-breeding of this species are present during breeding season. In addition colonies of 500-1000 pairs of snow petrel (Pagodroma nivea) and about 80 pairs of south polar skua (Catharacta maccormicki) are found here.

Primary purpose: To avoid human induced changes to the population structure, composition and size of the seabird colonies present at the site, to allow for undisturbed research on the adaptations of the Antarctic petrel, snow petrel and south polar skua to the inland conditions in Antarctica.

1. Description of values to be protected

The Area was originally designated in Recommendation XIV-5 (1987, SSSI No. 23) after a proposal by Norway based on the following factors, which still give relevant grounds for designation:

- the fact that the colony of Antarctic petrel (*Thalassoica antarctica*) is the largest known inland seabird colony on the Antarctic continent
- the fact that the colony constitutes a large proportion of the known world population of Antarctic petrel
- the fact that the colony is an exceptional "natural research laboratory" providing for research on the Antarctic petrel, snow petrel (*Pagodroma nivea*) and south polar skua (*Catharacta maccormicki*), and their adaptation to breeding in the inland/interior of Antarctica

2. Aim and objectives

The aim of managing Svarthamaren is to:

- avoid human induced changes to the population structure, composition and size of the seabird colonies present at the site
- prevent unnecessary disturbance to the seabird colonies, as well as to the surrounding environment
- allow for undisturbed research on the adaptations of the Antarctic petrel, snow petrel and south polar skua to the inland conditions in Antarctica (Primary Research)
- allow access for other scientific reasons where the investigations will not damage the objectives of the bird research

The focus of the *Primary Research* in Svarthamaren ASPA is as follows:

- Improve the understanding of how natural as well as anthropogenic changes in the environment affect the spatial and temporal distribution of animal populations, and, furthermore, how such changes affect the interaction between key species in the Antarctic ecosystem.

3. Management activities

Management activities at Svarthamaren shall:

- ensure that the seabird colonies are adequately monitored, to the maximum extent possible by non-invasive methods
- allow erection of signs/posters, border markers, etc. in connection to the site, and ensure that these are serviced and maintained in good condition
- include visits as necessary to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate

Any direct intervention management activity in the area must be subject to an environmental impact assessment before any decision to proceed is taken.

4. Period of Designation

Designated for an indefinite period.

5. Maps and Illustrations

Map A: Dronning Maud Land (showing location of Map B). Map specifications:

- Projection: Lambert Conformal Conic;
- Standard parallels: SP1 70º S, SP2 73ºS
- Central Meridian: 5ºE
- Latitude of origin: 71º30'S
- Spheroid: WGS84

Map B: Svarthamaren and surroundings (showing location of Svarthamaren ASPA). Map specifications are the same as for Map A.

Map C: Antarctic Specially Protected Area No. 142, protected area topographic map. Map specifications are the same as for Map A.

Map D: Aerial photo of Svarthamaren (1996, Norwegian Polar Institute)

6. Description of Area

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

The Svarthamaren ASPA is situated in Mühlig-Hoffmannfjella, Dronning Maud Land, stretching from approx. 71º 33'17" S, 5º09'12" E the north-west to approx. 71º55'58"S, 5º15'12" E in the south-east. The distance from the ice front is about 200 km. The Area covers approximately 6.4 km^2, and consists of the ice-free areas of the Svarthamaren nunatak, including the areas in the immediate vicinity of the ice-free areas naturally belonging to the nunatak (i.e. rocks). The Area is shown in Map B and C.

The Norwegian field station Tor is located in the Svarthamaren nunatak at lat. 71º53'S, long. 5º10'E. The station, including a 10-metre buffer zone around the station buildings, is excluded from the Svarthamaren Antarctic Specially Protected Area. Access to the station is by the shortest route from the ice.

The main rock types in the Area are coarse and medium grained charnockites with small amounts of xenoliths. Included in the charnockitoids are banded gneisses, amphibolites and granites of the amphibolite facies mineralogy. The slopes are covered by decomposed feldspathic sand. The north-eastern side of the Svarthamaren nunatak is dominated by scree slopes (slope 31º-34º), extending 240 metres upwards from the base of the mountain at about 1600 metres above sea level. The major features of this area are two rock amphitheatres inhabited by breeding Antarctic petrels. It is this area which makes up the core of the protected site.

No continuous weather observations have been carried through in the Area, but prevalent air temperature has been observed to range between -5º and -15ºC in January, with somewhat lower minimum temperatures in February.

The flora and vegetation at Svarthamaren are sparse compared with other areas in Mühlig-Hofmannfjella and Gjelsvikfjella to the west of the site. The only plant species occurring in abundance, but peripherally to the most manured areas, is the foliose green alga, *Prasiola crispa*. There are a few lichen species on glacier-borne erratics 1-2 km away from the bird colonies: *Candelariella hallettensis* (= C. *antarctica*), *Rhizoplaca* (= *Lecanora*) *melanophthalma*, *Umbilicaria* spp. and *Xanthoria* spp. Areas covered with *Prasiola* are inhabited by collembola ASPA No. 142: Svarthamaren *Cryptopygus sverdrupi*) and a rich fauna of mites (*Eupodes anghardi*, *Tydeus erebus*) protozoan, nematodes and rotifers. A shallow pond measuring about 20 x 30 m, lying below the middle and largest bird sub-colony at Svarthamaren, is heavily polluted by petrel carcasses, and supports a strong growth of a yellowish-green unicellular algae, *Chlamydomonas*, sp. No aquatic invertebrates have yet been recorded.

The colonies of breeding seabirds are the most conspicuous biological element in the Area. The north-eastern slopes of Svarthamaren are occupied by a densely populated colony of Antarctic petrels (*Thalassoica antarctica*) divided into three separate sub-colonies.

The total number of breeding pairs is estimated to be approximately 250,000 pairs. In addition, 500-1000 pairs of snow petrels (*Pagodroma nivea*) and approximately 80 pairs of south polar skuas (*Catharacta maccormicki*) breed in the area. The two main colonies of Antarctic petrels are situated in the two rocky amphitheatres. The main colonies of snow petrels are located in separate parts of the scree-slope that are characterised by larger rocks. The south polar skuas nest on the narrow strip of flat, snow-free ground below the scree-slopes.

The main concentrations of seabirds are indicated on Map C. Readers should, however, be aware that birds are also found in other areas than these densely populated areas.

Based on the Environmental Domains Analysis for Antarctica (2007, Morgan et al.) both Environments T- *Inland continental geologic* - and U- *North Victoria Land geologic* - are found to be represented at Svarthamaren (2009, Harry Keys, pers. comm.).

6 (ii) Restricted zones within the Area

None

6 (iii) Location of structures within the Area

There are no structures within the Area.

The Norwegian field station Tor is located on the Svarthamaren nunatak, at 71º53.4'S, 5º09.6'E. The station, including a 10 meter buffer zone around the station buildings, is excluded from the Area.

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

None

7. Permit Conditions

Permits may be issued only by appropriate national authorities as designated under Annex V, Article 7 of the Protocol on Environmental Protection to the Antarctic Treaty. Conditions for issuing a permit to enter the Area are that:

- the actions permitted are in accordance with this Management Plan
- the permit, or a copy, shall be carried within the area
- any permit issued shall be valid for a stated period
- a visit report is supplied to the authority named in the permit

7 (i) Access to and movement within the Area

Access to the area is restricted by the following conditions:

- No pedestrian routes are designated, but persons on foot shall at all times avoid disturbances to birds, and as far as possible also to the sparse vegetation cover in the Area.
- Vehicles should not enter the site.
- No flying of helicopters or other aircraft over the Area is allowed.
- Helicopter landings are not allowed within the boundaries of the ASPA. Landings associated with activities at the field station Tor should preferably take place at the north-eastern tip of the Svarthamaren nunatak (as marked on map C).

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

The following activities may be conducted within the Area in accordance with permit:

- Primary biological research programs for which the area was designated.
- Other research programs of a compelling scientific nature that will not interfere with the bird research in the Area.

7 (iii) Installation, modification or removal of structures

No structures are to be erected in the Area, or scientific equipment installed, except for equipment essential for scientific or management activities as specified in a permit, or for modification of the field station, also as specified in a permit.

7 (iv) Location of field camps

No field camps should be established within the Area. (Cf. 6 iii)

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

- No living animals or plant material shall be deliberately introduced into the Area.
- No poultry products, including food products containing uncooked dried eggs, shall be taken into the Area.

- No herbicides or pesticides shall be brought into the Area. Any other chemicals (including fuel), which may be introduced for a compelling scientific purpose specified in the permit, shall be removed from the Area before or at the conclusion of the activity for which the permit was granted. (cf. 6 iii). Limited fuel storage at the field station Tor is acceptable, taking into account that the station and its immediate surroundings are not part of the Area.
- All materials introduced shall be for a stated period, 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 minimized.

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

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

It is recommended that those responsible for the primary research in the Area should be consulted before a permit is granted for taking of birds for purposes not associated with the primary research. Studies requiring taking of birds for other purposes should be planned and carried through in such a manner that it will not interfere with the objectives of the bird research in the Area. ASPA No. 142: Svarthamaren

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

Material may be collected or removed from the Area only in accordance with a permit, except that debris of man-made origin should be removed and that dead specimens of fauna may be removed for laboratory examination.

7 (viii) Disposal of waste

All wastes are to be removed from the area.

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 carry out biological monitoring and site inspection activities which may involve the collection of small amounts of plant material or small numbers of animals for analysis or audit, to erect or maintain notice boards, to maintain the field station, or to undertake protective measures.

7 (x) Requirements for reports

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

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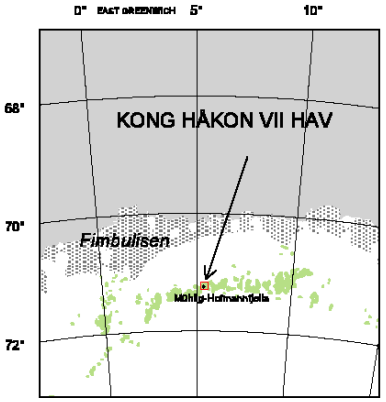
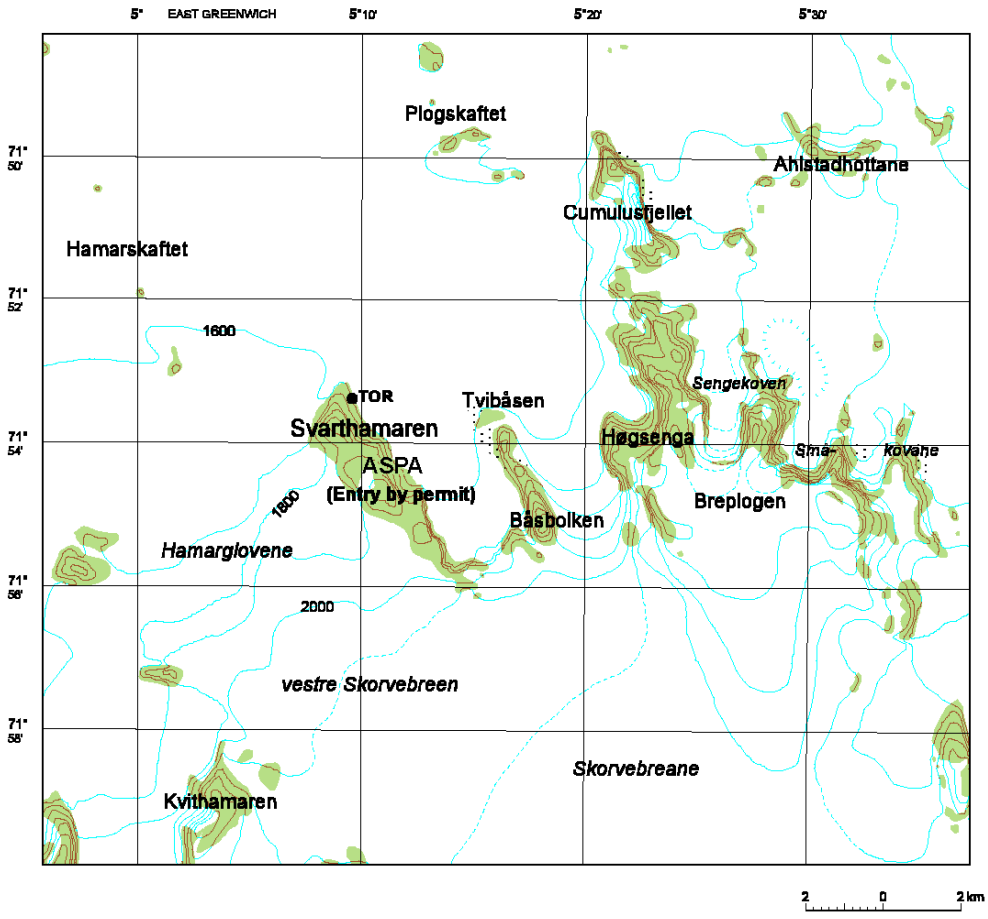


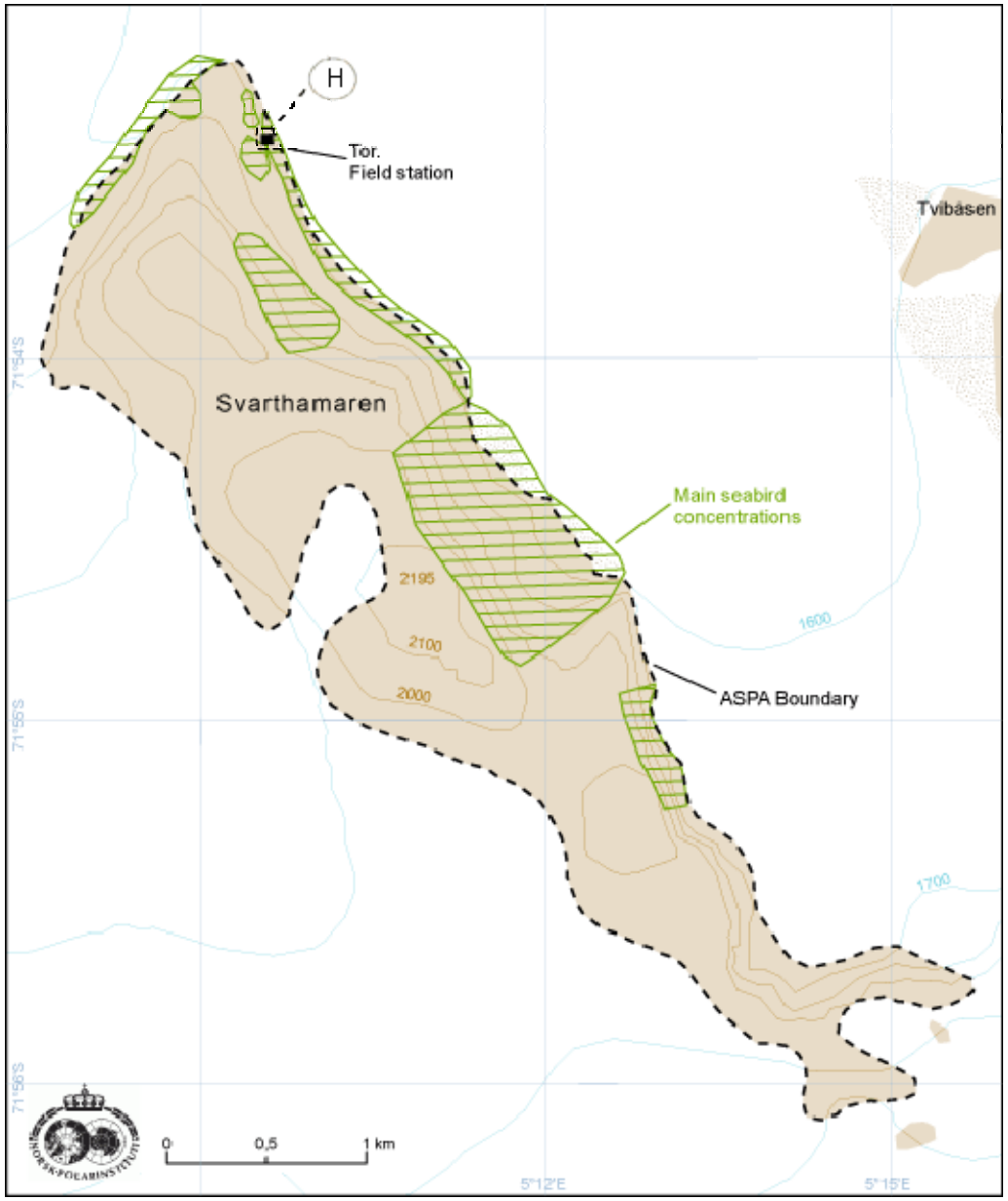
MAP A : Dronning Maud Land
Location of map B shown

100 0 100 km

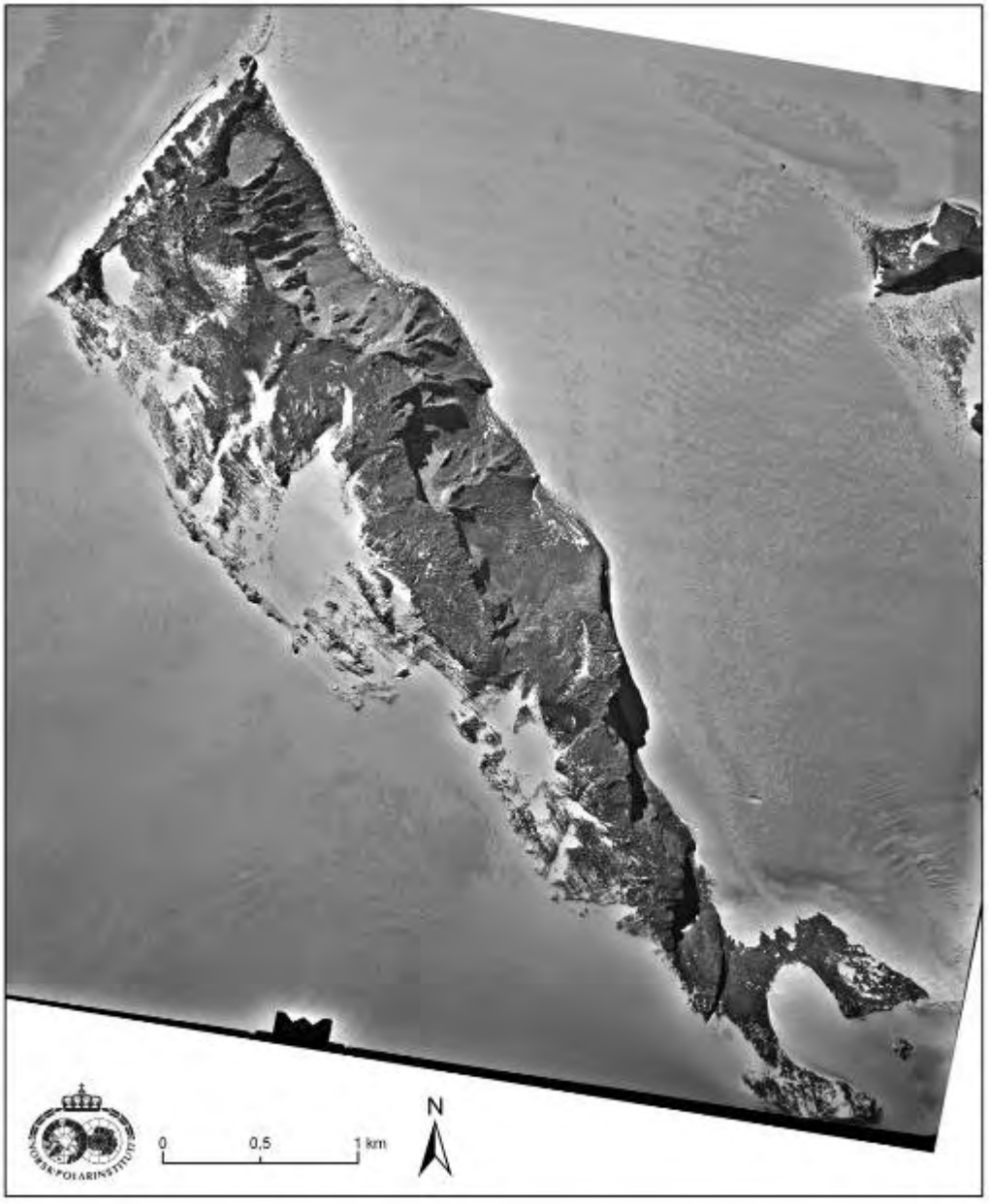
MAP B : Svarthamaren and surrondings
Svarthamaren, ASPA No. 142 sligthly left of centre



Map C: Svarthamaren – ASPA No. 142. Boundaries and Main Seabird Concentrations.



Map D: Aerial Photograph of Svarthamaren ASPA 142 (1996, Norwegian Polar Institute)



Management Plan for Antarctic Specially Protected Area No. 150

ARDLEY ISLAND, MAXWELL BAY, KING GEORGE ISLAND (25 DE MAYO)

INTRODUCTION

Ardley Island (62º13' S; 58º54' W) is located on the southwest coast of King George Island (25 de Mayo), nearly 500 m east of the coast of Fildes Peninsula, Maxwell Bay (Fildes Bay). The island is about 2 km long and 1.5 km at its widest, and rises to about 65 m altitude. In geomorphological terms, the area comprises mainly tertiary andesitic-basaltic lavas and tuffs, and there are some raised beach terraces.

It is free from snow and ice in summer. A small freshwater pond about 100 m long is formed by melting snow on the southwest part of the island between November and February.

After a proposal by Chile, Ardley Island was designated a Site of Special Scientific Interest, SSSI No. 33, under Recommendation XVI-2 (1991). The aim was to protect the diverse range of bird species that breed on the island. Initially, the Area was under protection until 2001. In that same year, protection was extended until 2005 under Measure 3 (2001). Under Measure 4 (2005), protection of the Area was extended until December 2010.

In 1991, Chile proposed to the Antarctic Treaty System that Ardley Island be protected in view of the site's biological interest due to the diverse range of sea birds that inhabit the area, either to breed (11 species), or to moult. The island also possesses some of the best developed and most extensive plant communities in the South Shetland Islands, notably the peaks, dominated by macrolichens. Such vegetation is extremely sensitive to human disturbance and is very easily damaged.

Studies carried out on Ardley Island since the 1970s on the three populations of Pygoscelid penguins that breed there show major seasonal fluctuations and a decrease in the colonies of giant petrels that nest on the island. Over the last few years, one vascular plant have begun to colonize the island, which has led to an increase in the number of species present in the Area.

The current Management Plan has changed the borders of the Area designated in Recommendation XVI-2 (1991), leaving out one part of what was originally classified as a "tourist area", located on the beach between Faro Point (62º12'34" S; 58º55'34" W) and the beginning of Braillard Point (62º12'40" S; 58º55'4" W). This section has often been visited by tourists and non-scientific staff from stations neighbouring Ardley Island. Visits by tourists are limited exclusively to this area, with groups of no more than 20 people.

It is necessary to maintain protection over the area in order to understand the effects of environmental pressure, both anthropogenic and natural, on the flora and fauna of the site because some of the studies conducted have shown that human activity is contributing to a decrease in flying bird populations on Ardley Island, and to detect the potential effects on the ecosystem and the ecology of the populations locally and regionally due to the increased sea and air temperature recorded in the Antarctic Peninsula region.

1. Description of values to be protected

The island was designated as a protected area on account of the diverse assemblage of bird species that breed on it, and in order to allow a study of their ecology and the factors that affect their populations.

Ardley Island also possesses a developed and outstanding flora, with several species of lichens, mosses and vascular plants. The main species of lichens that inhabit the area belong to the genera *Himantormia* and *Usnea*, which dominate the highlands of Ardley Island, and *Placopsis*, *Xanthoria*, *Haematomma*, *Rinodina*, *Caloplaca* and *Buellia* in the coastal sectors. Both the flora and fauna are thought to be extremely sensitive to

human disturbance. The vascular plant *Deschampsia antarctica* has gradually colonized the island from the 90's, mainly in the north part.

Seals have been recorded hauling out and moulting on the beach. The most common type is the Weddell seal (*Leptonychotes weddellii*). During the last few seasons, Chilean researchers have reported the occurrence of leopard seals (*Hydrurga leptonyx*) preying on penguins in the Area.

2. Aims and Objectives

The Management Plan of ASPA No. 150 aims to:

- protect the bird community and the terrestrial ecosystem;
- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance in the Area;
- allow scientific research, with the least possible interference, on marine Antarctic birds, and the ecosystem and physical environment associated with the values for which the Area is protected;
- allow other scientific research in the Area, provided it does not compromise the values for which the Area is protected;
- minimize the possibility of the introduction of non-native plants, animals and microbes to the Area;
- allow visits for management purposes, and 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:

- Copies of this Management Plan, including maps of the area, shall be made available at the following locations:
  1) Julio Escudero Station, Fildes Peninsula, King George Island (25 de Mayo)
  2) Eduardo Frei Station, Fildes Peninsula, King George Island (25 de Mayo)
  3) Bellingshausen Station, Fildes Peninsula, King George Island (25 de Mayo)
  4) Great Wall Station, Fildes Peninsula, King George Island (25 de Mayo)
  5) King Seyong Station, King George Island (25 de Mayo)
  6) Artigas Station, King George Island (25 de Mayo)
  7) Jubany Station, King George Island (25 de Mayo)
- The staff to be posted at Ardley Island shall be specifically trained on all matters concerning this Management Plan and the measures established in the Madrid Protocol;
- The pilots of the airplanes that flight to King George Island (25 de Mayo) must know and have a copy of the management plan before travel to Antarctica, to secure the knowledge of the restrictions to protect the values of the Area.
- When even possible, before visit the area the clothing, footwear and equipment, must be clean and disinfected to avoid the introduction of micro organisms.
- Signposts (markers, signs or any other information structures) will be allowed on sites where they do not disturb the protected values or research activities, for scientific, management or information purposes, and shall be maintained in good condition;
- Scientific research shall be allowed in order to study and monitor anthropogenic and natural impacts that could affect the protected values in the Area;
- Visits shall be made as necessary to assess whether the Area continues to serve the purposes for which it was designed and to ensure adequate management and maintenance measures;
- Entry into the Area by vehicles of any kind is strictly forbidden.
- New standards for the management of tourism in the northern section of the island, not included in the boundaries of the ASPA, will be developed as Guidelines for Visitors to the Antarctic Treaty Area. The objective is to ensure that the visits carried out are in strict compliance with the Management Plan and with the protection of its values, given its adjacency to ASPA No 150.

4. Period of designation

Designated for an indefinite period.

5. Maps and figures

Three maps are enclosed to this Management Plan as Annexes:

Map 1. Location of Ardley Island in relation to King George Island (25 de Mayo) and the Fildes Peninsula.

Map 2. Location of Ardley Island in relation to the Fildes Peninsula, King George Island (25 de Mayo), showing the stations present in the region.

Map 3. Ardley Island and Antarctic Specially Protected Area No 150. Permanent structures are shown, as area the demarked route (terrestrial access), exclusive for those whom carry on a permit, and disembarking points (maritime access). The Protected Area is marked out with a dotted line.

Figure 1. Sketch with the distribution of the main nesting birds on Ardley Island, based in Peter *et al.*, 2008.

Figure 2. Sketch of the distribution and coverage of the plant species present on Ardley Island, based in Peter *et al*., 2008.

6. Description of the area

i. Geographical coordinates, boundary markers and natural features

GENERAL DESCRIPTION

Ardley Island (62º13’ S; 58º54’ W) is about 2 km southeast of the Bellingshausen Station (Russian Federation) and of the Escudero and Frei Stations (Chile), and about 2 km east of the Great Wall Station (China).

The Area comprises most of the island, and is linked to King George Island (25 de Mayo) by an isthmus that remains submerged at high tide. The eastern part of the isthmus, that remain dry during the high tide, is included in the Area due it is part of Ardley island. However, the western part of the isthmus is outside the Area, as the beach below the 1 m contour line in the north-eastern part of the island, from Faro Point (62º12’34” S; 58º55’34” W) until the beginning of Braillard Point (62º12’40” S; 58º55’4” W) (see Map 3). Below this contour line, there is a section that is 5 m wide, on average, and which may be freely visited without the authorization requirements required for entry into ASPA No 150. The geography of the area restricts pedestrian traffic to the protected Area and also permits an appropriate protection of the values if the Management Plan is followed.

A footpath of 2 m of wide, often used by researchers working in the Area, is marked out in the western part of the island, from the isthmus connecting it with King George Island (25 de Mayo). There are no special markings to indicate this path - it is evident from the well-trodden ground.

Geologically, it consists mainly of Tertiary andesitic and basaltic lavas and tuffs together with raised beach terraces. The topography is plain, with the highest elevation at 65 m.

BREEDING BIRDS

The seabird community of Ardley Island is diverse and of exceptional biological interest. Of particular importance are the breeding colonies of Pygoscelid penguins, as it is one of the few places where the three species breed sympatrically. In addition to the penguin species, the area is also the breeding ground for flying birds such as the southern giant petrels (*Macronectes giganteus*), Wilson’s storm petrels (*Oceanites oceanicus*), Antarctic terns (*Sterna vittata*) and brown skuas (*Catharacta antarctica lonnbergi*) (Table 1). Figure 1 shows the general distribution of the main groups of birds that nest on Ardley Island.

Gentoo penguins (*Pygoscelis papua*), of which there were closer to 5,000 breeding pairs in the last breeding seasons, make up one of the largest breeding colonies of Gentoo penguins recorded in the South Shetland Islands, and probably in the Antarctic. There are currently around 300 breeding pairs of Adelie penguins (*P. adeliae*) and only a very few Chinstrap penguins (*P. antarctica*) (Table 2).

Table 1: List of bird species breeding on Ardley Island

Common Spanish name	Common English name	Species
Pingüino Adelia	Adelie penguin	*Pygoscelis adeliae*
Pingüino de barbijo	Chinstrap penguin	*Pygoscelis antarctica*
Pingüino papúa	Gentoo penguin	*Pygoscelis papua*
Skúa o salteador pardo	Brown skua	*Catharacta antarctica lonnbergi*
Skúa o salteador polar	South polar skua	*Catharacta maccormicki*
Petrel gigante	Southern giant petrel	*Macronectes giganteus*
Petrel de Wilson	Wilson's storm petrel	*Oceanites oceanicus*
Golondrina de mar de vientre negro	Blackbellied storm petrel	*Fregetta tropica*
Petrel damero o del cabo	Cape petrel	*Daption capense*
Gaviota dominicana	Kelp gull	*Larus dominicanus*
Gaviotín antártico	Antarctic tern	*Sterna vittata*

Table 2. Breeding populations of penguins on Ardley Island from 1973/74 to 2005/06

	Breeding pairs		
Season	***P. antarctica***	***P. adeliae***	***P. papua***
1973/74 [1]	18	230	1850
1980/81 [2]	244	1056	3809
1981/82 [3]	141	1314	2580
1983/84 [4]	91	1074	1656
1984/85 [5]	110	1331	3105
1985/86 [6]	39	929	3522
1986/87 [7]		1160	3410
1994/95	45	1095	3772
1995/96	49	1226	2985
1996/97	72	923	2974
1997/98	33	1173	3146
1998/99	43	1192	3349
1999/00	34	974	3911
2000/01	26	880	4472
2001/02	22	780	4444
2002/03	35	771	5131
2003/04	29	559	4957
2004/05	13	409	4798
2005/06	9	334	4635

Data obtained by the INACH "Ecology of three species of penguins" project led by Dr. J. Valencia, except:
1 and 4: Yañez *et al*. (1984); 2: Trivelpiece *et al*. (1987); 2, 5 and 7: Woehler (1993) (only *P. papua*); 3: Bannasch *et al*. (1983);
5: Peter *et al.* (1998 y 2008) (only *P. antarctica*), and 6: Rauschert *et al*. (1987)

Detailed ornithological and botanical research has been undertaken on Ardley Island for many years, mainly by Chilean and German scientists, with brief studies also made by scientists from Russia, Korea and China. German studies indicate that the giant petrel breeding population has declined by about 80% since research began in 1979. They point to strong evidence that numerical fluctuations of these particular populations are a direct response to disturbances produced by large numbers of visitors, aircraft overflights and station constructions. Disturbed pairs have moved their breeding sites to less affected areas. In the case of the breeding population of skuas, human and natural impacts can be linked to the recorded fluctuations caused by variable food availability and weather conditions. The effects of these impacts will continue to be monitored as an integral part of the long-term ornithological research being undertaken at this site.

MARINE MAMMALS

Seals are usual visitors of Ardley Island. Weddell seals (*Leptonychotes weddellii*) breed near the area between September and November on beaches and on the sea ice in Maxwell Bay (Fildes Bay). Crabeater seal (*Lobodon carcinophagus*) has been recorded in winter months in the sea ice in Maxwell Bay (Fildes Bay), in the vicinities of the Area, sometimes in big numbers. During December and March, some elephant seals *(Mirounga leonina*), Weddell seals and Antarctic fur seals (*Arctocephalus gazella*) visit the area to haul out or to moult.

Over the last few seasons, Chilean researchers have reported the occurrence of leopard seals (*Hydrurga leptonyx*), probably preying on penguins, in the vicinity of Ardley Island and mainly in the eastern part of the Area.

VEGETATION

The island has some of the best developed and most extensive plant communities in the South Shetland Islands, with around 250 species of lichens, 130 mosses and liverworts and 1 species of vascular plants. The climax fell field ecosystem is dominated by macrolichens such as *Himantormia lugubris* and several species of the genus *Usnea.* Such vegetation is extremely sensitive to human disturbance and is very easily damaged. In the coastal regions of Ardley Island it is possible to find many different lichens, mainly of the genera *Placopsis*, *Xanthoria*, *Haematomma*, *Rinodina*, *Caloplaca* and *Buellia*.

The presence of the Antarctic grass *Deschampsia antarctica* shows a significant increase in the size and number of recorded colonies. It is suggested that this population of vascular plants increases as a response to warmer and longer growing seasons, caused by regional warming. Figure 2 shows the distribution of the vegetation on Ardley Island.

ii. Special and managed zones within the Area

There are no special zones within the Area.

iii. Structures within and near the Area

There are two Chilean semi-permanent summer-only research shelters. Ripamonti I (62°12' S; 58°53' W) was established in 1982, in the northern coast of Ardley, and Ripamonti II (former Alfred Wegener Institute hut, ceded to Chile by Germany in 1997) lies almost 100 metres southwest from Braillard Point on the south-eastern part, inside the penguin breeding colonies. There are also two Argentinean buildings in the area that make up the Ballvé Refuge, set up in 1953, approximately 50 meters east of Ripamonti I.

An Argentinean radio beacon facilitates navigation, looking towards Maxwell Bay (Fildes Bay).

All the structures described remain in the Area year round.

iv. Location of other protected areas within close proximity of the Area

There are four protected areas in Nelson and King George (25 de Mayo) Islands, close to Ardley Island. The nearest one is Fildes Peninsula, ASPA No 125, about 1 km west and north-northwest of Ardley Island. ASPA No 128, on the western shore of Admiralty Bay, is located about 25.3 km northeast of Ardley Island. Also in King George Island (25 de Mayo), ASPA No 132, Potter Peninsula, is approximately 14.5 km east of Ardley Island. Finally, Harmony Point, ASPA No 133, is located around 18.6 km southwest of Ardley Island.

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 or essential management purposes, consistent with plan objectives such as inspection, maintenance or review activities, which cannot be served elsewhere;
- the actions permitted will not jeopardize the scientific and ecological 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;
- during the stated period, scientific staff present within the Area must carry the permit or an authorized copy thereof;
- at the end of the stated period, a report shall be submitted to the appropriate national authority named in the permit, including any activities undertaken that were not explicitly mentioned in the permit.

i. Access to and movement within the Area

Access to Ardley Island shall be by small boat or on foot. Movement within the Area shall be only on foot.

Work crews should consist of no more than 10 persons during critical stages of birds' breeding cycles (incubation, hatching and early chick rearing between October and January each year), and of no more than 20 at any other time.

Boat access

The northern coast of Ardley Island is the appropriate area to land. Small zodiac boats may land on the Island. Recommended and preferred landing sites are the beach in front of Ripamonti I, in the Luis Point area, and the beach at Faro Point. Groups of 10-20 visitors are allowed to land at a time, depending on the stage of the birds' breeding cycle.

On foot

Only permit holders with authorized entry into the Area shall be permitted to access the Area on foot.

The island may be reached on foot, crossing the isthmus from the Fildes Peninsula at low tide. Pedestrian activity should be restricted to the marked path (see Map 3) avoiding transit through areas with vegetation, as well as areas close to the seabird breeding sites, unless strictly necessary for scientific research in the Area.

Vehicle access

Entry into the Area by vehicles of any kind is strictly forbidden.

Overflights

Due to the presence of breeding seabirds on the island, aircraft landings are prohibited within the Area and any necessary overflights shall be conducted according to guidelines established in Resolution 2 (2004), Guidelines for Aircraft near concentrations of birds:

- Bird colonies are not to be over flown below 2000ft (~ 610 m) Above Ground Level
- Landings within 1/2 nautical mile (~ 930 m) of bird colonies should be avoided wherever possible.
- Maintain a vertical separation distance of 2000 ft (~ 610 m) AGL and a horizontal separation of 1/4 nautical mile (~ 460 m) from the coastline where possible.
- Cross the coastline at right angles and above 2000ft (~610 m) AGL where possible.
- Never hover or make repeated passes over wildlife concentrations or fly lower than necessary.

Aircraft landing at and taking off from Teniente Marsh airfield or from any other takeoff site or pad should avoid overflying the island.

ii. Activities that are or may be conducted within the Area, including restrictions on time or place

Scientific research that will not jeopardize the ecosystem or scientific values of the Area or in any way diminish the value of the Area as a reference site.

Essential management activities, including monitoring.

iii. Installation, modification or removal of structures

No additional structures shall be erected in the Area, except for essential scientific or management activities, and with a proper permit for a specified period. All scientific equipment installed in the Area must be authorized by permit and clearly identified by country, name of the principal investigator or agency and year of installation. All such items shall be made from materials that pose minimal risk of harming fauna or contaminating the Area.

Installation, maintenance, modification or removal of structures shall be undertaken in such a way as to minimize disturbance to flora and fauna. The permit shall also indicate that structures, equipment or signposts be taken down once the period established therein has expired.

iv. Location and regulation of field camps

Camping is not permitted in the Area.

v. Restrictions on materials and organisms that can be brought into the Area

No living animals or plant material, or parts thereof, shall be deliberately brought into the Area. For that, is required, where ever possible, the inspection and thorough cleaning of all clothing, footwear and equipment before entry to the Area.

No poultry products shall not be brought into the Area as food for researchers in order to protect the bird life on the island.

No herbicides or pesticides shall be brought into the Area. Any other chemicals, which may be introduced for scientific or management purposes specified in the permit, shall be properly stored during the stated period, to minimise risks inherent to their introduction into the environment. If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is likely to be greater than that of leaving the material *in situ*.

Fuel, food and other materials brought into the Area to support the conducting of scientific or management activities for which a permit has been issued shall be stored in the shelters, taking every care not to release them inadvertently into the environment. They should be removed from the Area at or before the end of the stated period. An emergency cache may be kept in the shelters.

vi. Taking or harmful interference with native flora or fauna

Taking or harmful interference of native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II to the Madrid Protocol. Where the activity involves removing or tampering with native flora or fauna, the SCAR Code of Conduct for the Use of Animals for Scientific Purposes should be used as a minimum standard.

vii. Collection or removal of anything not brought into the Area by the permit holder

Material not brought into the Area by the permit holder 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. Removal of dead biological specimens or geological samples for scientific purposes must not exceed levels that affect the other species or values in the Area, and may only be taken for scientific studies.

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 authorized, may be removed unless the impact of removal is likely to be greater than leaving the material *in situ.* If this is the case the appropriate authority should be notified.

viii. Disposal of waste

All wastes shall be removed from the Area. However, human organic waste may be disposed of into the sea, in accordance with Article 5 of Annex III of the Protocol on Environmental Protection to the Antarctic Treaty.

Waste generated as a consequence of the activities developed in the area should be temporarily stored near the shelters in a place where they cannot be accidentally lost. Such waste should be properly labelled as garbage. At the end of the period, it should be removed from the Area and from the Treaty Area.

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

- Permits may be granted to enter the area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples of plant material and animals for scientific purposes, for analyses or review, or for protection measures, as specified in a permit.
- Any specific sites of long-term monitoring that are vulnerable to inadvertent disturbance should be appropriately marked and informed to other Parties thought appropriate channels.
- To avoid interference with long-term research and monitoring activities or possible overlapping of efforts, anyone planning new projects within the Area should consult established national programmes working at Ardley Island before commencing the work.
- Parties conducting long-term research and monitoring programmes should cooperate closely, facilitate communication among scientists working in the Area, and conduct regular joint assessments of their research lines and products.

- Visitors shall follow the guidelines in this Management Plan strictly to help maintain the scientific values found at Ardley Island.

x. Requirements for reports

The principal holder of each permit issued shall submit a report to the appropriate national authority describing the activities undertaken in the area once the stated period has ended. This report must be submitted within two months. Such reports should include the information identified in the visit report form, recommended by SCAR, attaching the permit.

The national authority should keep the reports in order to provide summary descriptions of the activities conducted in the annual exchange of information or to provide the necessary information on human activities within the Area to all the interested Parties in the management of the Area, and further maintain a record of usage which may serve the review processes of the management plan, improve the scientific use of the Area and contribute to its best environmental protection.

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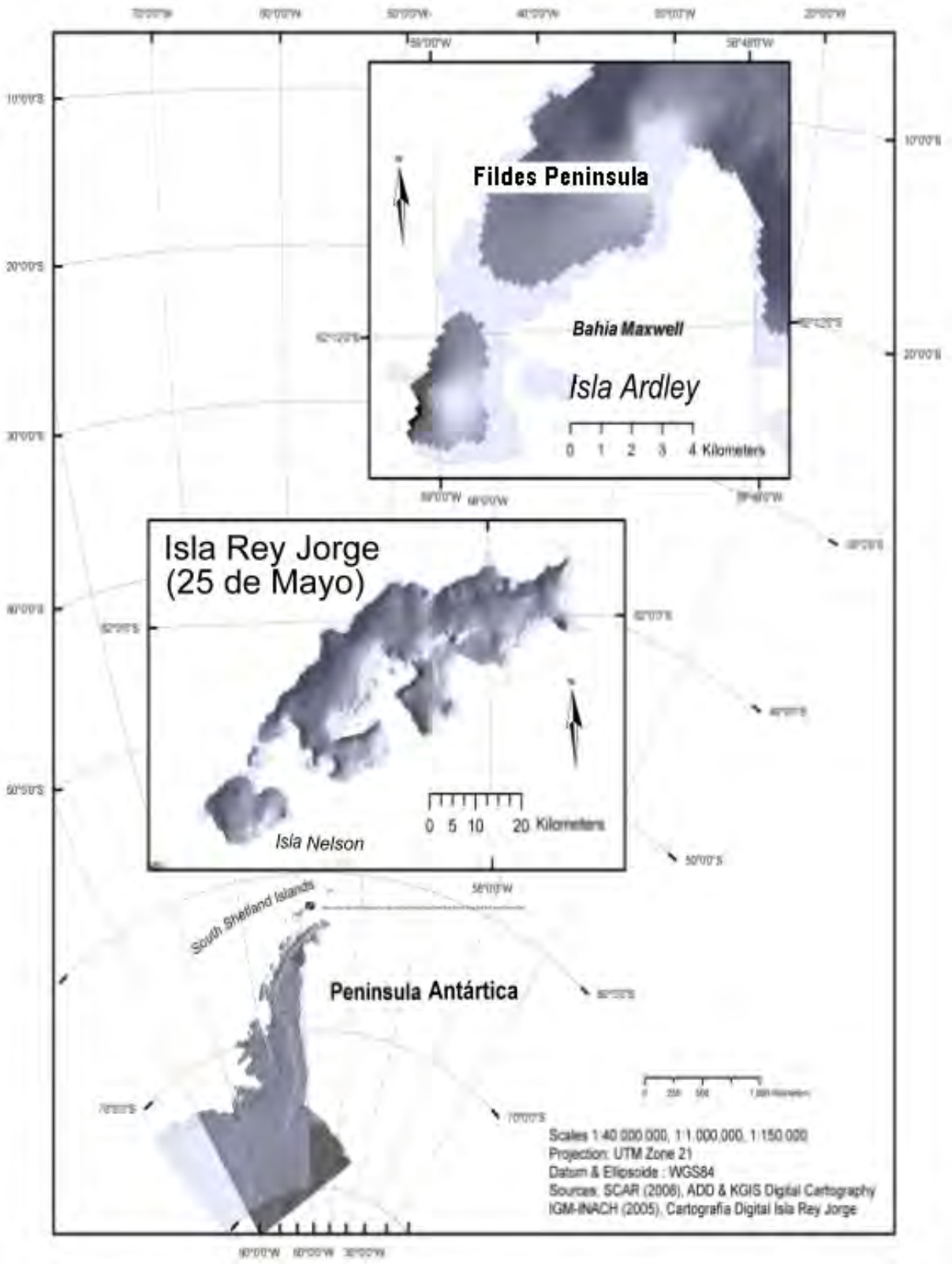
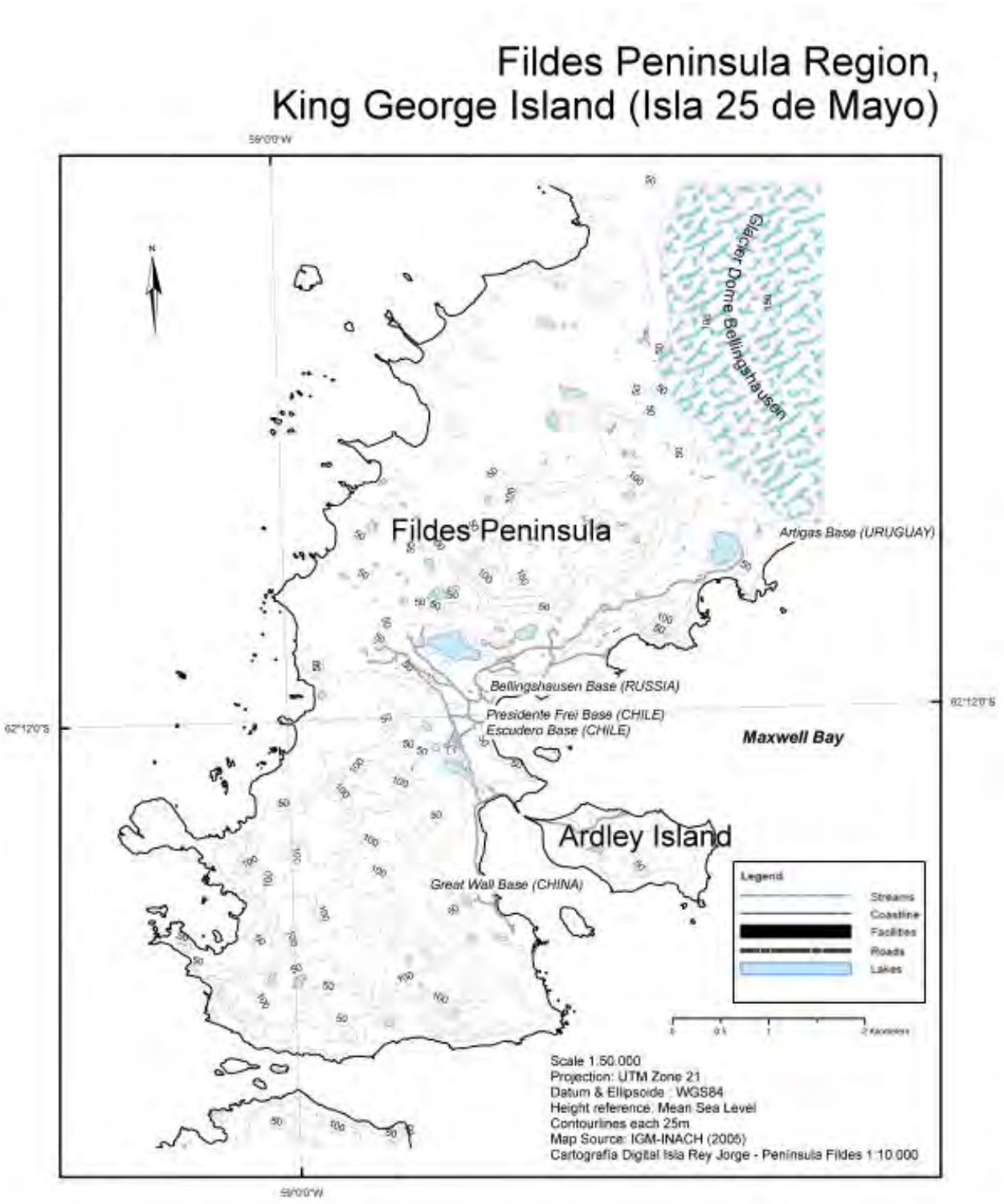
ANNEXES: Maps and Figures

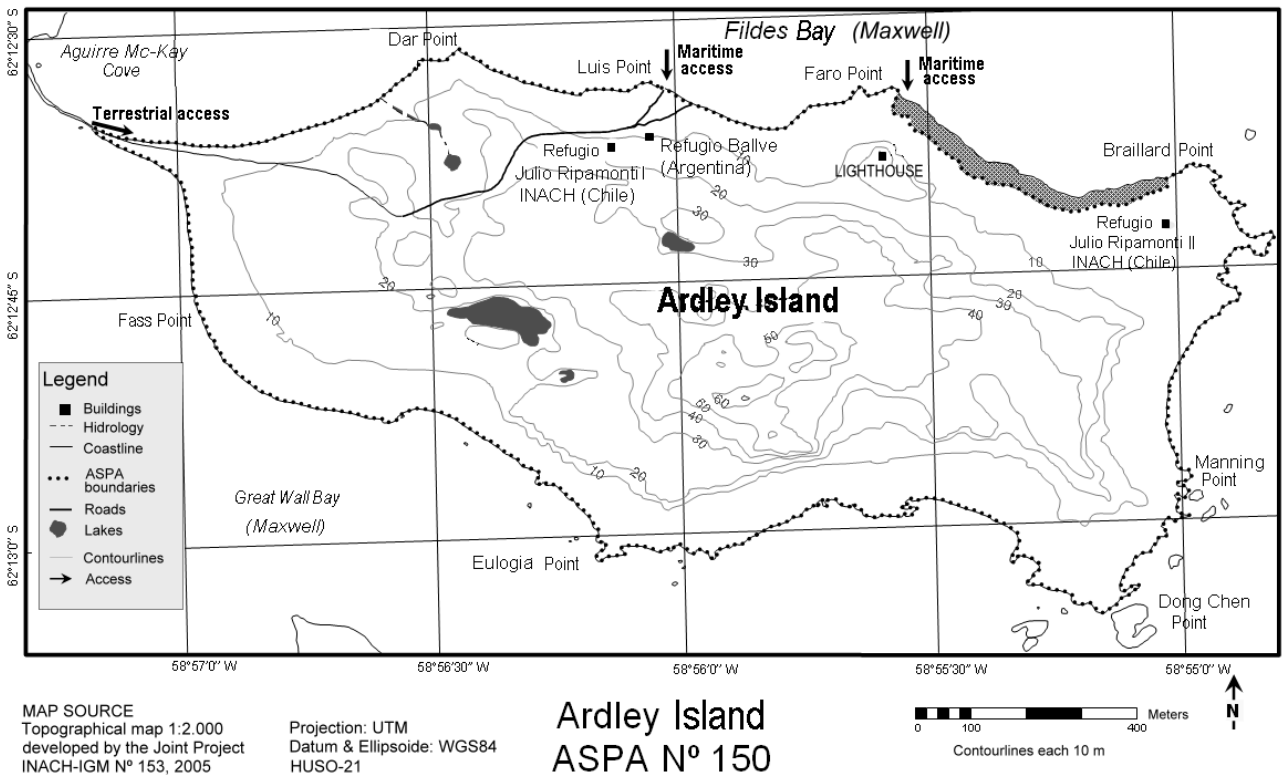


Map 1. Location of Ardley Island in relation to King George Island (25 de Mayo) and the Fildes Peninsula, (Map Database, Project 153, IGM-INACH, Mapping and GIS of South Shetland Islands)



Map 2. Location of Ardley Island in relation to the Fildes Peninsula, King George Island (25 de Mayo), showing the stations present in the region.

(Map Database, Project 153, IGM-INACH, Mapping and GIS of South Shetland Islands)



Map 3. Ardley Island and Antarctic Specially Protected Area No 150. Permanent structures are shown, as the demarked route (terrestrial access) , exclusive for those whom carry on a permit, and disembarking points (maritime access). The Protected Area is marked out with a dotted line.

(Map Database 1:2000, Project IGM-INACH No. 153, Mapping and GIS of South Shetland Islands 2005)

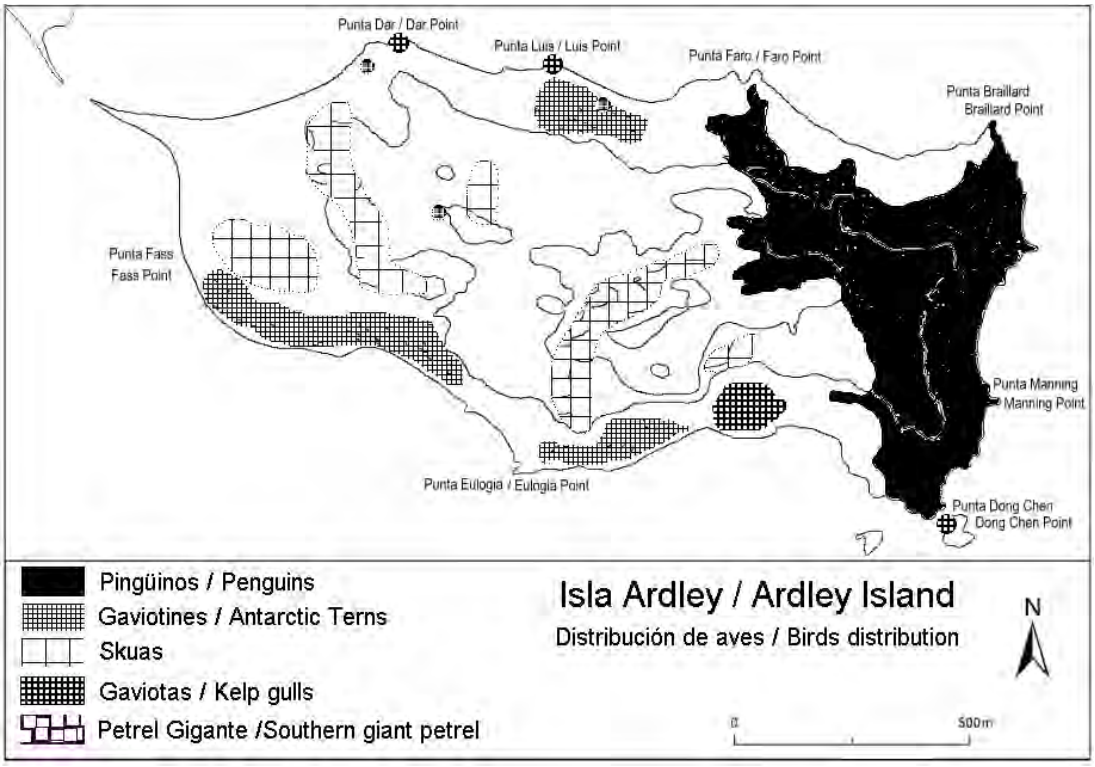


Figure 1. Sketch with the distribution of the main nesting birds on Ardley Island, based in Peter *et al*., 2008.

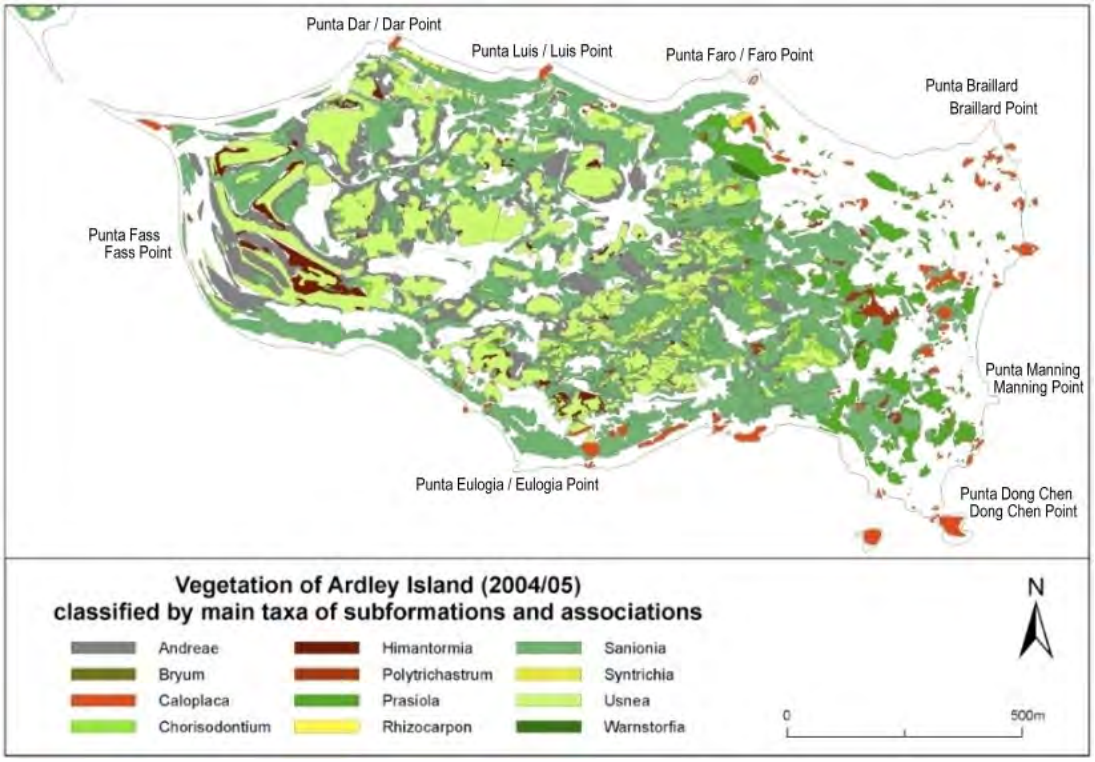


Figure 2. Sketch of the distribution and coverage of the plant species present on Ardley Island, based in Peter *et al*., 2008.

Management Plan for

Antarctic Specially Protected Area No. 152

WESTERN BRANSFIELD STRAIT

Introduction

This marine ASPA lies off the western and southern coasts of Low Island, South Shetland Islands, between 63°15'S and 63°30'S; 62°00'W and 62°45'W. Approximate area: 1021km^2. Designation on the grounds that the shallow shelf in this region near Low Island is one of only two known sites in the vicinity of Palmer Station (USA) that are suitable for bottom trawling for fish and other benthic organisms (see also ASPA No 153 Eastern Dallmann Bay). The site offers unique opportunities to study the composition, structure and dynamics of several accessible marine communities. Proposed by the United States of America: adopted by Recommendation XVI-3 (Bonn, 1991: SSSI No 35); date of expiry extended by Measure 3 (2001); renamed and renumbered by Decision 1 (2002); revised management plan adopted by Measure 2 (2003).

1. Description of values to be protected

Western Bransfield Strait (between latitudes 63°20'S and 63°35'S and longitudes 61°45'W and 62°30'W, approximately 910km^2) was originally designated as a Site of Special Scientific Interest through Recommendation XVI-3 (1991, SSSI No 35) after a proposal by the United States of America. It was designated on the grounds that "the shallow shelf south of Low Island is one of only two known sites in the vicinity of Palmer Station that are suitable for bottom trawling for fish and other benthic organisms. From an ecological standpoint, the Low Island site offers unique opportunities to study the composition, structure, and dynamics of several accessible marine communities. The Site, and in particular, its benthic fauna, is of exceptional scientific interest and requires long-term protection from potential harmful interference". Together with Eastern Dallmann Bay (ASPA No 153), the Area is used in over 90 percent of specimen collections carried out by US researchers who are actively studying such fish communities within the region (Detrich pers. comm. 2009).

The boundaries of the Area were revised by Measure 2 (2003) to include all of the shallow shelf down to 200m depth to the west and south of Low Island, while the deeper water of Bransfield Strait to the east was excluded. The boundaries of the Area at Western Bransfield Strait are between latitudes 63°15'S and 63°30'S and longitudes 62°00'W and 62°45'W and are defined in the north-east by the shoreline of Low Island, encompassing an area of approximately 1021km^2 (Map 1).

The Area continues to be considered important for studies of the composition, structure and dynamics of the marine communities, and the original reasons for designation are reaffirmed in the current Management Plan. In addition, the Area is recognized as an important spawning ground for several fish species, including the rockcod *Notothenia coriiceps* and the icefish *Chaenocephalus aceratus*. Fish have been collected from the Area by scientists from Palmer Station since the early 1970s. The Area is within the research area of the Palmer Long Term Ecological Research (LTER) Program; fish collected from the Area are used in the study of biochemical and physiological adaptations to low temperatures. Some of the fish collected have been used for comparative studies with the more heavily impacted Arthur Harbor area. Scientific research is also being undertaken on the benthic faunal communities.

2. Aims and objectives

Management at Western Bransfield Strait aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;
- allow scientific research on the marine environment while ensuring protection from over-sampling;
- allow other scientific research within the Area provided it will not compromise the values for which the Area is protected;

- 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:

- A map showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently and copies of this Management Plan shall be made available at Palmer Station (US).
- Copies of this Management Plan shall be made available to vessels travelling in the vicinity of the Area.
- Buoys, or other markers or structures installed within the Area for scientific or management purposes shall be secured and maintained in good condition.
- Visits shall be made as necessary to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map 1: ASPA No 152 Western Bransfield Strait bathymetric map. Coastline data are derived from the SCAR Antarctic Digital Database (ADD) Version 5.0 (2007). Bathymetry is derived from published and unpublished depth data gridded by P. Morris (British Antarctic Survey, pers. comm. 2000) to the same specifications described in Schenke *et al.* (1998), which was gridded to cell sizes of between 1 and 4.6km. Contours manually adjusted along eastern coast of Low Island to align with ADD v5.0 coastal change update. Faunal data are from Harris (2006). Map specifications: Projection: Lambert Conformal Conic; Standard parallels: 1st 63°21'S; 2nd 63°30'S; Central Meridian: 62°08'W; Latitude of Origin: 61°00'S; Spheroid: WGS84; Horizontal accuracy: maximum error of ±300m. Contour interval – Marine 100m, vertical accuracy to within ±50m.

Inset: the location of Map 1, ASPA No 152 Western Bransfield Strait, Antarctic Peninsula, showing the nearest protected area, ASPA No 153, Eastern Dallmann Bay, and the location of Palmer Station (US).

6. Description of the Area

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

General description

Bransfield Strait is a deep water passage approximately 220km long and 120km wide between the Antarctic Peninsula and the numerous islands that comprise the South Shetland Islands. The Drake Passage is to the north and to the west is the Bellinghausen Sea. The Area lies approximately 80km west of the Antarctic Peninsula, mostly within the 200m isobath directly south and west of Low Island (Map 1). Low Island is the southern-most of the South Shetland Islands, lying 60km south-west of Deception Island and 25km south-east of Smith Island. To the west and south of Low Island, and for approximately 20km from the shore, the sea floor slopes gently from the intertidal zone to depths of approximately 200m. The sea floor slopes steeply to the east of Low Island, reaching depths of up to 1200m in this part of Bransfield Strait. Cores collected as part of the BENTART research programme during the austral summers of 2003 and 2006 indicate that the sea floor within the Area is generally composed of muddy sediments containing gravel or small stones, and of sessile epifaunal communities (Troncoso *et al.* 2008), which either remain firmly attached to substrates or move very slowly (Robinson *et al.* 1996).

Boundaries

The boundaries of the Area at Western Bransfield Strait are defined in the north as the line of latitude at 63°15'S and in the south at 63°30'S; in the east the boundary is defined as the line of longitude at 62°00'W and in the west 62°45'W (Map 1). The northeastern boundary is defined as the shoreline of Low Island, extending from 62°00'W, 63°20'S in the southeast (approximately two kilometers from Cape Hooker) to 62°13'30"W, 63°15'S in the northwest (Cape Wallace). The coastline boundary on the western and southern shores of Low Island is defined as the high tide level, and the intertidal zone is included within the Area. The Area extends a maximum of 27.6km north-south and a maximum of 37.15km east-west, encompassing an

area of approximately 1021km^2. Boundary markers have not been installed because in the marine area this is impractical, while at Low Island the coast itself is a clearly defined and visually obvious boundary feature.

Oceanography, climate and marine geology

There is considerable year-to-year variation in sea ice within the Bransfield Strait region, although coverage appears to be less than 100 days per year (Parkinson 1998). Rates of sea ice advance and retreat along the northwestern Antarctic Peninsula are also variable. Sea ice advance is for approximately five months followed by approximately seven months of retreat. Ice growth is fastest in June and July and the fastest decay is in December and January (Stammerjohn and Smith 1996). Measurements made within the Bransfield Strait between 20th January and 9th February 2001 indicate that ocean temperatures in the Area averaged between 1.7 and 1.8ºC at 5m depth and 0.2 to 0.3ºC at the 150m contour (Catalan *et al.* 2008). Water salinity within the Area ranged between 34.04 and 34.06psu at 5m, whilst at 150m depth salinity reached 34.40psu.

Wind is predominantly from the NNW direction, resulting in a southward flowing coastal current along the western Antarctic Peninsula (Hofmann *et al.* 1996). Coupled with the northward flow of the Antarctic Circumpolar Current, this results in a predominantly clockwise circulation in Bransfield Strait (Dinniman and Klinck 2004; Ducklow *et al.* 2007), dominated by the Gerlache Strait Current and the Bransfield Strait Current (Zhou *et al.* 2002 and 2006). Drifters deployed as part of RACER (Research on Antarctic Coastal Ecosystems and Rates) between 1988 and 1990 indicate that eddie formation within the Area is minimal and that a strong north-easterly flow originates to the south of Low Island (Zhou *et al.* 2002). The current bifurcates to the west of Low Island, with water flowing to the north-east to merge with the Bransfield Strait Current and to the north-west, towards Smith Island. Local circulation is also influenced by tides, with tide records obtained at Low Island during a six-week period in December 1992 to January 1993 recording a maximum level variation of 1.70m (López *et al.* 1994).

Seismic measurements from the Seismic Experiment in Patagonia and Antarctica (SEPA) monitoring station, located on the north-eastern coast of Low Island, have detected significant earthquake activity within the Area, which is thought to result from the intersection of the Hero Fracture Zone with the South Shetland Platform at Smith Island (Maurice *et al.* 2003). During the Spanish Antarctic campaign of 2006/07, an additional seismic monitoring station was installed on the southern coast of Low Island, in order to extend geodetic monitoring within the Bransfield Strait area (Berrocoso *et al.* 2007).

Marine biology

The predominantly soft sand / mud / cobbled-rock substrate of the Area supports a rich benthos with numerous fish species, invertebrates (sponges, anemones, annelids, molluscs, crustaceans, asteroids, ophiuroids, echinoids, holothurioids, brachiopods, tunicates), and marine plants, in several distinct communities.

Fish species commonly collected near Low Island at depths of 80 to 200m include *Chaenocephalus aceratus, Harpagifer bispinis, Notothenia coriiceps, Gobionotothen gibberifrons (*formerly *N. gibberifrons), Parachaenichthys charcoti* and *Trematomus newnesi* (Grove and Sidell 2004; Lau *et al.* 2001). Species rarely found at Low Island include *Champsocephalus gunnari, Chionodraco rastrospinosus* and *Pseudochaenichthys georgianus*. In addition, the Low Island shelf appears to be a spawning ground for several fish species, for example the ice fish *Chaenocephalus aceratus* and *N. coriiceps*, with the family *Nototheniidae*, representing the bulk of fish larvae and juveniles captured in the area (Catalan *et al.* 2008). Other juvenile fish species collected close to Low Island include *Trematomus lepidorhynus and Notothenia kempi*. The Area is a mating ground for yellowbelly rockcod (*Notothenia coriiceps*) (indicated by eggs) (Kellermann 1996). The fish spawn in May / June. The large eggs, around 4.5mm in diameter, are pelagic after fertilization and ascend to the surface waters where they incubate during the winter. Larval species recorded in the Area include *Bathylagus antarcticus, Electrona antarctica, Gymnodraco acuticeps, Notopheniops larseni, Notothenia kempi* and *Pleuragramma antarcticum* (Sinque *et al.* 1986; Loeb *et al.* 1993; Morales-Nin *et al.* 1995).

The following benthic amphipod species have been recorded within the Area: *Ampelisca barnardi, A. bouvieri, Byblis subantarctica, Epimeria inermis, E. oxicarinata, E. walkeri, Eusirus antarcticus, E. perdentatus, Gitanopsis squamosa, Gnathiphimedia sexdentata, Jassa* spp., *Leucothoe spinicarpa, Liljeborgia georgiana, Melphidippa antarctica, Oediceroides calmani, O. lahillei, Orchomenella zschaui,*

Parharpinia obliqua, Parepimeria bidentata, Podocerus septemcarinatus, Prostebbingia longicornis, Shackeltonia robusta, Torometopa perlata, Uristes georgianus and *Waldeckia obesa* (Wakabara *et al.* 1995).

Molluscan assemblages have been analysed at four sample sites within the Area as part of an integrated study of the benthic ecosystem of Bransfield Strait, which was carried out between 24 January and 3 March 2003 (BENTART 03) and from 2 January to 17 February 2006 (BENTART 06) (Troncoso *et al.* 2008). The most abundant species in the Area was the bivalve *Lissarca notorcadensis*, distantly followed by *Pseudamauropsis aureolutea*, which was the most widely distributed. Other species collected included *Marseniopsis conica, Onoba gelida, Yoldiella profundorum, Anatoma euglypta, Chlanidota signeyana* and *Thyasira debilis*.

No information is available on the zooplankton or marine flora within the Area.

Marine mammals

Satellite tracking studies carried out between January 2004 and 2006 suggest that humpback whales (*Megaptera novaeangliae*) pass close to the Area and may enter it during foraging (Dalla Rosa *et al.* 2008). Southern elephant seals (*Mirounga leonina*) were tracked within the Area using satellite transmitters between December 1996 and February 1997 (Bornemann *et al.* 2000).

Birds

Approximately 295,000 pairs of chinstrap penguins (*Pygoscelis antarctica*) were breeding at five locations on Low Island in 1987 (Woehler 1993). The largest colonies were immediately to the north of the Area at Cape Wallace (approximately 150,000 pairs) and on the eastern boundary of the Area at Cape Garry (approximately 110,000 pairs) and Jameson Point (25,000) (Map 1). It is expected that the chinstrap penguins influence the Area, particularly near Cape Garry. Small colonies of Antarctic shags (*Phalacrocorax* [atriceps] *bransfieldensis)* have been observed at Cape Garry, on an island within the Area between Cape Garry and Jameson Point, and on an island several kilometers NE of Cape Wallace (Poncet and Poncet, unpublished data from Feb 1987, in Harris 2006) (Map 1).

Human activities / impacts

Fish collected within the Area have been used for a variety of biochemical, genetic and physiological research, including: studies of the adaptations in fish that enable proteins to function at low temperatures (Detrich *et al.* 2000; Cheng and Detrich 2007); the adaptations of muscle and energy metabolism, including the processing of fatty acids to low temperatures (Hazel and Sidell 2003; Grove and Sidell 2004); efficient genome transcription in cold water (Lau *et al.* 2001; Magnoni *et al.* 1998); the influence of hydrostatic pressure on enzyme function within fish livers (Ciardiello *et al.* 1999); and the cardiovascular adaptations of icefishes, in compensation for their complete lack of haemoglobin (Sidell and O'Brien 2006).

Specimens collected during trawls in March and April 1991, 1992, and 1993 were used in comparative studies of Polynuclear Aromatic Hydrocarbon (PAH) contamination in fish with those collected from Arthur Harbor and the effects of Diesel Fuel Arctic (DFA) on *Notothenia gibberifrons* (now *Gobionotothen gibberifrons*) (McDonald *et al.* 1995; Yu *et al.* 1995). The former study found levels of contamination in fish sampled from the Area were considerably lower than those sampled from the vicinity of the 1989 *Bahía Paraíso* wreck in Arthur Harbor and that fish captured near US scientific stations are exposed to PAH, albeit low levels (McDonald *et al.* 1992 and 1995). However, concentrations of PAH were higher than had been expected in fish collected from within the Area, with levels found to be similar to those in fish sampled from near Old Palmer Station.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

There are no structures known to be within or near the Area. The nearest scientific stations are Decepción (Argentina) and Gabriel de Castilla (Spain), both approximately 70km to the northeast on Deception Island.

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

The nearest protected areas to Western Bransfield Strait are Eastern Dallmann Bay (ASPA No 153), which lies about 45km to the SSE, and Port Foster and other parts of Deception Island (ASPAs No 140 and 145 respectively), which are approximately 70km to the north-east (Map 1, Inset).

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 are that:

- it is issued for scientific study of the marine environment in the Area, or for other scientific study which will not compromise the values for which the Area is protected, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardize the ecological or scientific values of the Area;
- any management activities are in support of the 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;
- permits shall be issued for a stated period;

7(i) Access to and movement within the Area

Access into the Area shall be by sea, over sea ice or by air. There are no specific restrictions on routes of access to or movement within the Area, although movements should be kept to the minimum necessary consistent with the objectives of any permitted activity. Every reasonable effort should be made to minimize disturbance. Anchoring should be avoided within the Area. There are no special overflight restrictions and aircraft may land by Permit when sea ice conditions allow.

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

- Scientific research that will not jeopardize the values of the Area;
- Essential operational activities of vessels that will not jeopardize the values of the Area, such as transit through, or stationing within, the Area in order to facilitate science or other activities, including tourism, or for access to sites outside 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 and permanent structures or installations are prohibited;
- All structures, scientific equipment or markers installed in the Area must be authorized 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;
- Installation (including site selection), maintenance, modification or removal of structures shall be undertaken in a manner that minimizes disturbance to flora and fauna.
- Removal of specific equipment for which the permit has expired shall be the responsibility of the authority which granted the original Permit, and shall be a condition of the permit.

7(iv) Location of field camps

None.

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

- No living animals, plant material, pathogens or microorganisms shall be deliberately introduced into the Area, and the precautions listed below shall be taken against accidental introductions;
- To help maintain the ecological and scientific values derived from the relatively low level of human impact within Western Bransfield Strait, visitors shall take special precautions against introductions. Of

concern are pathogenic, microbial, or plant introductions sourced from other Antarctic sites, including stations, or from regions outside Antarctica. Visitors shall ensure that sampling equipment or markers brought into the Area are clean. To the maximum extent practicable, equipment used or brought into the Area shall be thoroughly cleaned before use within 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;
- 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 minimized;
- If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*.

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

Taking or harmful interference of native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose.

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 authorized, may be removed from any part of the Area, 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 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

1. Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples for analysis or review, or for protective measures.
2. Any specific sites of long-term monitoring that are vulnerable to inadvertent disturbance should, where practical, be appropriately marked on site and on maps of the Area.

7(x) Requirements for reports

- Parties should ensure that the principal holder of each permit issued submit to the appropriate authority a report describing the activities undertaken. Such report 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, 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.
- The appropriate authority should be notified of any activities/measures undertaken, and/or of any materials released and not removed, that were not included in the authorized permit.

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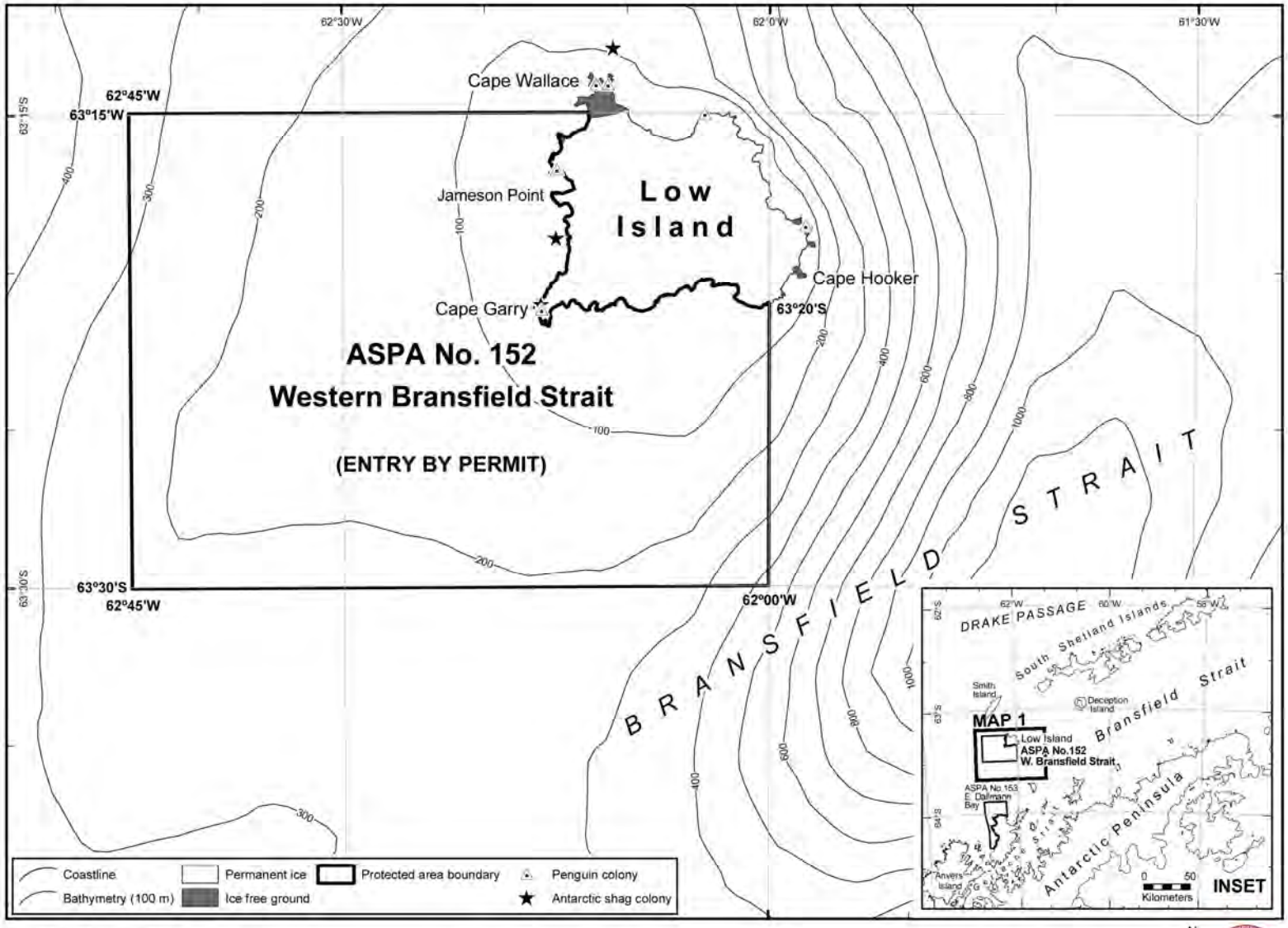

Projection: Lambert Conformal Conic
Central Meridian: 62°08'W; Standard parallels: 63°21'S, 63°30'S
Datum & Spheroid: WGS84
Data sources: Topography from ADD v5.0 (2007)
Bathymetry from data gridded by P. Morris (pers. comm. 2000), manually adjusted along eastern coast of Low Island to align with ADD v5.0 coastal change update.
Fauna data from UK FCO Wildlife Awareness Manual (Harris 2006)

Map 1: ASPA No. 152
Western Bransfield Strait

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14 February 2009
United States Antarctic Program
Environmental Research & Assessment

Management Plan for

Antarctic Specially Protected Area No. 153

EASTERN DALLMANN BAY

Introduction

This marine ASPA lies off the western and northern coasts of Brabant Island, Palmer Archipelago, between 64°00'S and 64°20'S; 62°50'W and the western coast of Brabant Island. Approximate area: 676km^2. Designation on the grounds that the shallow shelf in this region near Brabant Island is one of only two known sites in the vicinity of Palmer Station (US) that are suitable for bottom trawling for fish and other benthic organisms (see also ASPA No 152 Western Bransfield Strait). The benthic fauna of the site is of exceptional scientific interest and the area provides an important habitat for juvenile fish. Proposed by the United States of America: adopted by Recommendation XVI-3 (Bonn, 1991: SSSI No 36); date of expiry extended by Measure 3 (2001); renamed and renumbered by Decision 1 (2002); revised management plan adopted by Measure 2 (2003).

1. Description of values to be protected

Eastern Dallmann Bay (between latitudes 64°00'S and 64°20'S and from longitude 62°50'W eastward to the western shore of Brabant Island, approximately 676km^2) was originally designated as a Site of Special Scientific Interest through Recommendation XVI-3 (1991, SSSI No 36) after a proposal by the United States of America. It was designated on the grounds that "the shallow shelf west of East Dallmann Bay is one of only two known sites near Palmer Station that are suitable for bottom trawling for fish and other benthic organisms. The Site and, in particular, its benthic fauna, are of exceptional scientific interest and require long-term protection from harmful interference". Together with Western Bransfield Strait (ASPA No 152), the Area is used in over 90 percent of specimen collections carried out by US researchers who are actively studying such fish communities within the region (Detrich pers. comm. 2009).

The boundaries of the Area revised by Measure 2 (2003) focus more specifically on the shallow shelf down to 200m depth to the west and north of Brabant Island, while the deeper water of Dallmann Bay to the west has been excluded. The boundaries of the Area at Dallmann Bay are between latitudes 63°53'S and 64°20'S and longitudes 62°16'W and 62°45'W and are defined in the east by the shoreline of Brabant Island, encompassing an area of approximately 676km^2 (Map 1).

The Area continues to be considered important for obtaining scientific samples of fish and other benthic organisms, and the original reasons for designation are reaffirmed in the current Management Plan with the amended boundaries. In addition, the Area is an important habitat for juvenile fish species, including the rockcod *Notothenia coriiceps* and the icefish *Chaenocephalus aceratus*. Fish have been collected from the Area by scientists from Palmer Station since the early 1970s. The Area is within the research area of the Palmer Long Term Ecological Research (LTER) Program. Fish collected from the Area are used in the study of biochemical and physiological adaptations to low temperatures. Some of the fish collected have been used for comparative studies with the more heavily impacted Arthur Harbour area scientific research is also being undertaken on the benthic faunal communities.

2. Aims and objectives

Management at Eastern Dallmann Bay aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;
- allow scientific research on the marine environment while ensuring protection from over-sampling;
- allow other scientific research within the Area provided it will not compromise the values for which the Area is protected;
- 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:

- A map showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently and copies of this Management Plan shall be made available at Palmer Station (US);
- Copies of this Management Plan shall be made available to vessels travelling in the vicinity of the Area;
- Buoys, or other markers or structures installed within the Area for scientific or management purposes shall be secured and maintained in good condition;
- Visits shall be made as necessary to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

Map 1: ASPA No 153 Eastern Dallmann Bay bathymetric map. Coastline and terrestrial contour data are derived from the SCAR Antarctic Digital Database Version 5.0 (2007). Bathymetric data are derived from published and unpublished depth data gridded by P. Morris (pers. comm. 2000) to the same specifications described in Schenke *et al*. (1998), which was gridded to cell sizes of between 1 and 4.6km. Faunal data are from Harris (2006). Map specifications: Projection: Lambert Conformal Conic; Standard parallels: 1st 64°10'S; 2nd 64°17'S; Central Meridian: 62°38'W; Latitude of Origin: 61°00'S; Spheroid: WGS84; Horizontal accuracy: maximum error of ±300m. Vertical contour interval 100m, vertical accuracy to within ±50m.

Inset: the location of Map 1, ASPA No 153 Eastern Dallmann Bay, Antarctic Peninsula, showing the nearest protected area and the location of Palmer Station (US).

6. Description of the Area

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

General description

Dallmann Bay (between latitudes 64°00'S and 64°20'S and from longitude 63°15'W eastward to the western shore of Brabant Island) is situated approximately 65km west of the Antarctic Peninsula, between Brabant Island and Anvers Island, with Bransfield Strait to the north and Gerlache Strait to the south (Map 1). Brabant Island is predominantly ice-covered, with a high north-south mountain chain, which rises to 2520m at Mount Parry and falls steeply to the sea on the western coast (Smellie *et al.* 2006). The western coastline is characterized by rock and ice cliffs and ice-free headlands, interspersed by steep boulder and narrow pebble beaches. Rock platforms are exposed at low tide in various locations north of Driencourt Point (Map 1), which field surveys carried out in January 2002 suggest are part of a much larger outcrop of volcanic rock, which extends

approximately 10km from Brabant Island and was formed by two phases of phreatomagmatic volcanism during the Late Quaternary (Smellie *et al.* 2006). Numerous rocky islets extend several kilometers offshore, including Astrolabe Needle (104m) which stands one kilometer offshore, two kilometers south of Claude Point. West of Brabant Island the sea floor slopes moderately from the intertidal zone to depths of approximately 200m before the slope eases to depths of 400-500m beyond the western boundary of the Area. The gradient from the shore down to 200m slopes more gently in the north of the Area. The Area lies mostly within the 200m depth contour west and north of Brabant Island (Map 1). The sea floor in the Area is generally composed of a matrix of soft sand, mud and cobbled-rock.

Boundaries

The designated Area is defined in the south by latitude 64°20'S, extending from Fleming Point westward for two kilometers to 62°40'W. From this location, the western boundary extends due north on longitude 62°40'W for 18.5km to 64°10'S, SSW of Astrolabe Needle. The western boundary then extends NNW almost 19km to 62°45'W, 64°00'S. The western boundary then extends approximately 13km due north on longitude 62°45'W to latitude 63°53'S, the northern boundary of the Area. The northern boundary extends along latitude 63°53'S from 62°45'W to 62°16'W, being a distance of approximately 23.4km. The eastern boundary extends due south approximately 16km from 62°16'W, 63°53'S to the eastern extremity of Pasteur Peninsula, Brabant Island, at 62°16'W, 64°02'S. From there, the eastern boundary is defined as the mean high water mark of the northern and western coastline of Brabant Island, which includes the intertidal zone within the Area. The Area is 50km from north to south and extends up to a maximum of 23.4km east-west. West of Brabant Island the width of the Area ranges between 10km (at Guyou Bay) and 1.5km (near Claude Point). The total area is approximately 676km^2.

Oceanography, marine geology and climate

Regional winds are predominantly from the NNW, resulting in a southward flowing coastal current along the western Antarctic Peninsula (Hofmann *et al.* 1996). Coupled with the northward flow of the Antarctic Circumpolar Current, this results in a generally clockwise oceanic circulation along the western Antarctic Peninsula (Dinniman and Klinck 2004; Ducklow *et al.* 2007). Within Bransfield Strait, a cyclonic circulation predominates, with the two main currents (the Gerlache Strait Current and the Bransfield Strait Current) originating from the south of Brabant Island (Zhou *et al.* 2002 and 2006). Drifters deployed as part of RACER (Research on Antarctic Coastal Ecosystems and Rates) between 1988 and 1990 suggest an east-west flow within the northern area of the ASPA and the formation of eddies between Metchnikoff Point and Astrolabe Needle (Zhou *et al*. 2002). Tidal variation on Brabant Island is almost two meters and observations made while fishing indicate strong near-shore currents (Furse 1986).

Measurements made between 20th January and 9th February 2001 indicated that ocean temperatures in the Area were 1.8 to 1.9ºC at a depth of 5m and at 150m depth, temperatures reached 0.3 to 0.45ºC (Catalan *et al.* 2008). Measurements carried out between 11th June and 16th July 2001 suggested that water temperatures in the Area ranged between –0.8 to –1.1°C at depths of 100–200m (Eastman and Lannoo 2004). Water salinity within the Area ranged between 33.84 and 34.04 practical salinity units (psu) at 5m, whilst at 150m depth salinity values were 34.42 - 34.45psu (Catalan *et al.* 2008). Sea ice coverage averages approximately 140 days per year within Eastern Dallmann Bay and persists for approximately 82% of the winter period (Stammerjohn *et al.* 2008). Sea ice concentrations show considerable interannual variabilty, which has been linked to phase changes in ENSO and the Southern Annular Mode (SAM) (Stammerjohn *et al.* 2008).

Seismic measurements from the Seismic Experiment in Patagonia and Antarctica (SEPA) geodetic monitoring network indicate a significant earthquake activity within the Area, particularly to the

north of Brabant Island, which is thought to result from the intersection of the Hero Fracture Zone with the South Shetland Platform at Smith Island (Maurice *et al.* 2003).

Marine biology

The Area supports a rich benthic community including numerous fish species, invertebrates, and marine plants and the Area is an important habitat for juvenile fish species. Fish commonly collected within a depth range of 80 to 200m at Eastern Dallmann Bay include *Gobionotothen gibberifrons (*formely *Notothenia gibberifrons), Chaenocephalus aceratus, Champsocephalus gunnari, Pseudochaenichthys georgianus* and *Chionodraco rastrospinosus* (Eastman and Lannoo 2004; Dunlap *et al.* 2002). In addition to more common species, trawls carried out between 15th June and 4th July 2001 collected numerous specimens of *Lepidonotothen larseni, Lepidonotothen nudifrons, Notothenia rossii* and *Notothenia coriiceps* and examples of *Parachaenichthys charcoti, Chaenodraco wilsoni, Dissostichus mawsoni, Trematomus eulepidotus* and *Lepidonotothen squamifrons* (Eastman and Sidell 2002; Grove and Sidell 2004). Specimens of *Trematomus newnesi* and *Gymnodraco acuticeps* have been collected occasionally within the Area (Hazel and Sidell 2003; Wujcik *et al*. 2007). Larval species recorded in the Area include *Artedidraco skottsberg, Gobionotothen gibberifrons, Lepidonotothen nudifrons* and *Pleuragramma antarcticum* (Sinque *et al.* 1986; Loeb *et al.* 1993).

Invertebrates collected within the Area have included varieties of sponge, anemone, annelid, mollusc, crustacean, asteroid, ophiuroid, echinoid, holothurioid and tunicate. Acoustic echo-sounding was used to measure aggregations of Antarctic krill (*Euphausia superba*) within the Area during cruises between 1985 and 1988 (Ross *et al.* 1996). Aggregations were generally recorded in the upper 120m of the water column. The lowest numbers of aggregations were observed in early spring, increasing to a maximum in late summer and early winter and spawning occurs from November to March (Zhou *et al*. 2002). The Area provides a food-rich nursery for krill, which may become entrained within the Area by eddy currents.

Birds

Two colonies of chinstrap penguins (*Pygoscelis antarctica*) have been recorded on the northwestern coast of Brabant Island immediately adjacent to the Area. Approximately 5000 breeding pairs were counted at Metchnikoff Point in 1985 and approximately 250 pairs at Claude Point in 1985 (Woehler 1993). Colonies of Antarctic fulmars (*Fulmarus glacialoides*) have been observed at three locations along the coast of Brabant Island (Poncet and Poncet, unpublished data: in Harris 2006) and 1000 breeding pairs were estimated to be nesting along Cape Cockburn cliffs in 1987, at the northeastern boundary of the Area (Creuwels *et al*. 2007). Antarctic shag (*Phalacrocorax* [atriceps] *bransfieldensis)* have been observed to nest at four locations along the western coast of Brabant Island (Poncet and Poncet, unpublished data from Jan-Feb 1987, in Harris 2006). Other birds observed breeding on the western coast of Brabant Island and frequenting the Area are: Antarctic terns (*Sterna vittata*), black-bellied storm petrels (*Fregetta tropica*), brown skuas (*Catharacta lonnbergi*), cape pigeons (*Daption capense*), greater sheathbills (*Chionis alba*), kelp gulls (*Larus dominicanus*), snow petrels (*Pagodroma nivea*), south polar skuas (*Catharacta maccormicki*) and Wilson's storm petrels (*Oceanites oceanicus*) (Parmelee and Rimmer 1985; Furse 1986). Antarctic petrel (*Thalassoica antarctica*), black-browed albatross (*Diomedea melanophris*), southern giant petrel (*Macronectes giganteus*) commonly forage in the Area (Furse 1986).

Marine mammals

Numerous marine mammals were observed in Dallmann Bay between January 1984 and March 1985 (Furse 1986). Humpback whales (*Megaptera novaeangliae*) were the most frequently sighted whale species, with possible sightings of killer whales (*Orcinus orca*) off Metchnikoff Point in May and June 1985. Satellite tracking of humpback whales between January 2004 and January 2006 indicated that numerous animals passed through the Area and foraged within it, with the broader Gerlache Strait region being identified as an important feeding ground for humpback whales (Dalla

Rosa *et al.* 2008). Minke whales have been sighted within the Area, to the north of Brabant Island, during the austral summer (Dec – Feb) (Scheidat *et al.* 2008).

Crabeater seals (*Lobodon carcinophagus*), southern elephant seals (*Mirounga leonina*), numerous Antarctic fur seals (*Arctocephalus gazella*), leopard seals (*Hydrurga leptonyx*) and Weddell seals (*Leptonychotes weddellii*), were observed in the Area from Metchnikoff Point (Furse 1986).

Human activities / impacts

Numerous research cruises along the western Antarctic Peninsula have included sampling stations within the Area for oceanographic and/or biological research. Fish collected within the Area have been used for a variety of biochemical, genetic and physiological research. Studies of icefish biochemical processes have included: studies of the adaptations in fish that enable proteins to function at low temperatures (Dunlap *et al.* 2002; Cheng and Detrich 2007); the adaptations of muscle structure and energy metabolism, including the processing of fatty acids to low temperatures (Hazel and Sidell 2003; Grove and Sidell 2004; O'Brien *et al.* 2003); the influence of hydrostatic pressure on enzyme function within fish livers (Ciardiello *et al*. 1999) and efficient genome transcription at low water temperatures (Lau *et al*. 2001; Magnoni *et al*. 2002). Numerous studies have investigated icefish morphology, including; research into the cardiovascular adaptations of icefish, in compensation for their complete lack of haemoglobin (Wukcik *et al*. 2007; Sidell and O'Brien 2006); the histology and anatomy of the sense organs and brains of icefish (Eastman and Lannoo 2004); and neutral buoyancy of icefish in relation to their life histories and skeletal structure (Eastman and Sidell 2002).

Specimens collected during trawls in March and April 1991, 1992, and 1993 were used in comparative studies of polynuclear aromatic hydrocarbon (PAH) contamination in fish with those collected from Arthur Harbor and the effects of Diesel Fuel Arctic (DFA) on *Notothenia gibberifrons* (now *Gobionotothen gibberifrons*) (McDonald *et al.* 1995; Yu *et al*. 1995). The former study found levels of contamination in fish sampled from the Area were considerably lower than those sampled from the vicinity of the 1989 *Bahía Paraíso* wreck in Arthur Harbor and that fish captured near US scientific stations are exposed to PAH, albeit low levels (McDonald *et al*. 1992 and 1995). However concentrations of PAH were higher than had been expected in fish collected from within the Area, with levels found to be similar to those in fish sampled from near Old Palmer Station.

A British Joint Services Expedition involving 35 team members spent one year on Brabant Island from January 1984 to March 1985 (Furse 1986). Several camps and numerous caches were established along the western coastline, including a main base camp at Metchnikoff Point. Some of the camp structures and possibly caches were abandoned following the expedition, although their status in 2009 is unknown. The level of impact of the expedition on the adjacent marine environment is also unknown.

The Brabant Island – Anvers Island region is a popular destination for tourism. Data on tourist visits compiled by the US National Science Foundation show that since the Area was first designated in 1991 a number of tour vessels have visited Dallmann Bay, and more specifically Metchnikoff Point. Tourist activity in the vicinity since original designation is summarised in Table 1. It is not clear where in Dallmann Bay the reported tourist visits took place, although it is thought that ship activity occurs predominantly within western Dallmann Bay, specifically along the coast of Anvers Island and close to the Melchior Islands (Crosbie pers. comm. 2008). It remains necessary, however, to move through the Area to gain access to Metchnikoff Point by sea.

Table 1. Tourism activity in the vicinity of ASPA No 153, Eastern Dallmann Bay, 1991–92 to 2007–08. Numbers given in brackets indicate activity at Metchnikoff Point.

Year	No. of vessels	Total No. of Tourists	Small-boat cruise (pax)	Small-boat landing (pax)	Kayaking
1991-92	(1)		(12)		
1992-93					
1993-94	1		84		
1994-95					
1995-96	2		104		
1996-97	1		70		
1997-98	(1)			(55)	
1998-99	(1)			(2)	
1999-00	2		102		
2000-01	0		0		
2001-02	(1)		0 (96)		
2002-03	0		0		
2003-04	0	0	0	0	0
2004-05	1	56	0	0	0
2005-06	7	1506	467	0	107
2006-07	8	1333	318	0	101
2007-08	8	13,754	61	0	0

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

There are no structures known to be within the Area. Structures and other material from the UK Joint Services Expedition to Brabant Island (January 1984 to March 1985) may remain on the western shores of Brabant Island, particularly at Metchnikoff Point. The nearest stations are President González Videla (Chile), approximately 55km south in Paradise Harbour; Port Lockroy (UK), approximately 75km south-west on Goudier Island, Yelcho (Chile), approximately 80km south-west on Doumar Island; and Palmer (US), approximately 90km WSW on Anvers Island.

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

The nearest protected area to Eastern Dallmann Bay is Western Bransfield Strait (ASPA No 152), which lies about 55km to the NNW. Antarctic Specially Managed Area No. 7 Southwest Anvers Island and Palmer Basin lies approximately 80km to the south-west on the southern coast of Anvers Island (Map 1).

7. Permit conditions

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

- it is issued for scientific study of the marine environment in the Area, or for other scientific study which will not compromise the values for which the Area is protected, or for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardize the ecological or scientific values of the Area;
- any management activities are in support of the 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;
- permits shall be issued for a stated period;

7(i) Access to and movement within the Area

Access into the Area shall be by sea, over sea ice or by air. There are no specific restrictions on routes of access to or movement within the Area, although movements should be kept to the

minimum necessary consistent with the objectives of any permitted activity. Every reasonable effort should be made to minimize disturbance. Anchoring should be avoided within the Area. There are no special overflight restrictions and aircraft may land by Permit when sea ice conditions allow.

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

- Scientific research that will not jeopardize the values of the Area;
- Essential operational activities of vessels that will not jeopardize the values of the Area, such as transit through, or stationing within, the Area in order to facilitate science or other activities or for access to sites outside 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 and permanent structures or installations are prohibited.
- All structures, scientific equipment or markers installed in the Area must be authorized 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.
- Installation (including site selection), maintenance, modification or removal of structures shall be undertaken in a manner that minimizes disturbance to flora and fauna.
- Removal of specific equipment for which the permit has expired shall be the responsibility of the authority which granted the original Permit, and shall be a condition of the permit.

7(iv) Location of field camps

None.

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

- No living animals, plant material, pathogens or microorganisms shall be deliberately introduced into the Area, and the precautions listed below shall be taken against accidental introductions.
- To help maintain the ecological and scientific values derived from the relatively low level of human impact within Eastern Dallmann Bay, visitors shall take special precautions against introductions. Of concern are pathogenic, microbial, or plant introductions sourced from other Antarctic sites, including stations, or from regions outside Antarctica. Visitors shall ensure that sampling equipment or markers brought into the Area are clean. To the maximum extent practicable, equipment used or brought into the Area shall be thoroughly cleaned before use within 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.
- 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 minimized.
- If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*.

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

Taking or harmful interference of native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose.

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.
- Permits shall not be granted if there is a reasonable concern that the sampling proposed would take, remove or damage such quantities of substrate, native flora or fauna that their distribution or abundance within the Area would be significantly affected.
- 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 authorized, may be removed from any part of the Area, 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 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

1. Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of limited samples for analysis or review, or for protective measures.
2. Any specific sites of long-term monitoring that are vulnerable to inadvertent disturbance should, where practical, be appropriately marked on site and on maps of the Area.

7(x) Requirements for reports

- Parties should ensure that the principal holder of each permit issued submit to the appropriate authority a report describing the activities undertaken. Such report 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, 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.
- The appropriate authority should be notified of any activities/measures undertaken, and/or of any materials released and not removed, that were not included in the authorized permit.

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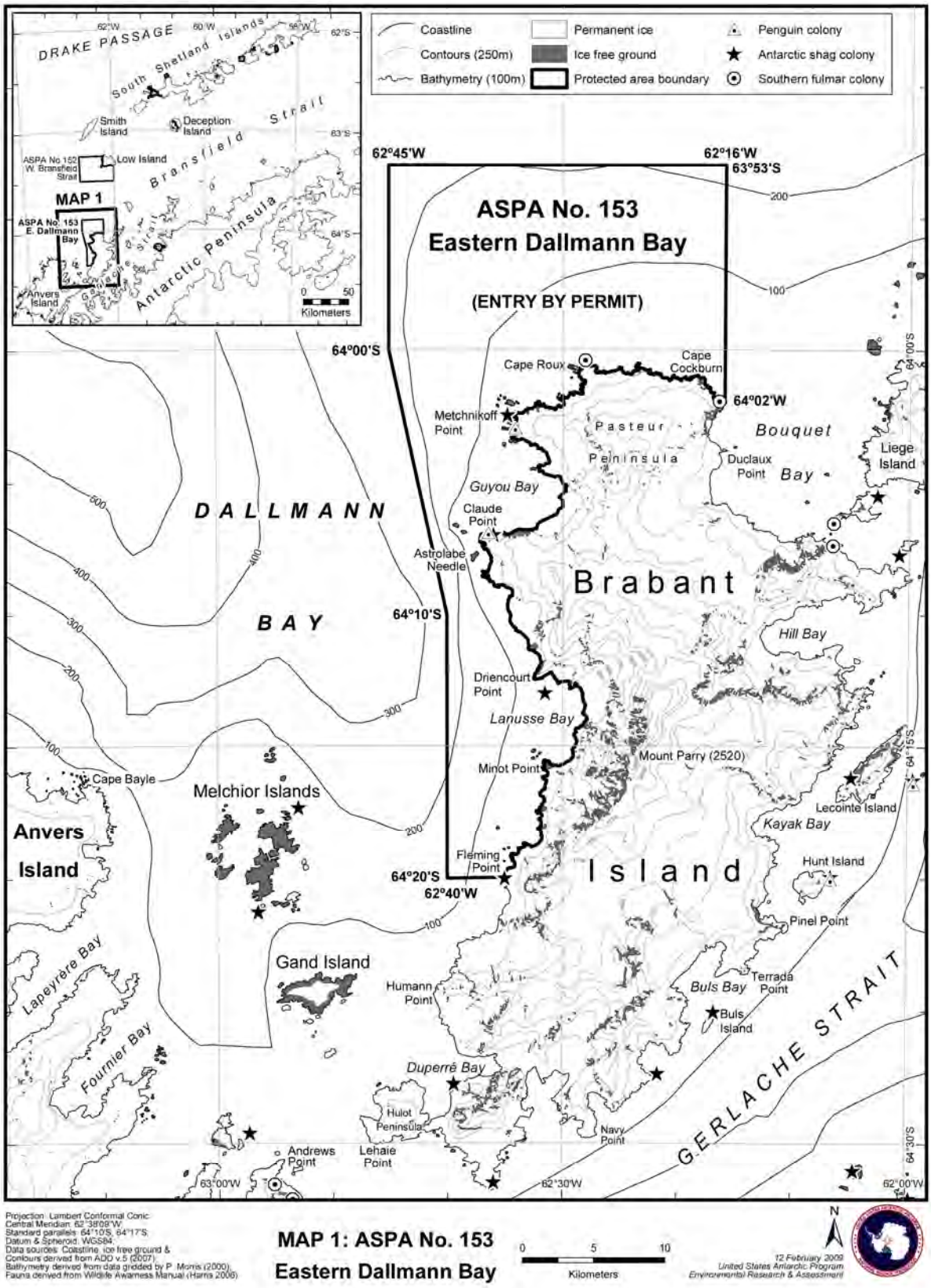
DRAKE PASSAGE
South Shetland Islands
Smith Island
Deception Island
Bransfield Strait
ASPA No 152 W. Bransfield Strait
Low Island
MAP 1
ASPA No. 153 E. Dallmann Bay
Antarctic Peninsula
Anvers Island
Gerlache Strait
Kilometers
Coastline
Contours (250m)
Bathymetry (100m)
Permanent ice
Ice free ground
Protected area boundary
Penguin colony
Antarctic shag colony
Southern fulmar colony
ASPA No. 153
Eastern Dallmann Bay
(ENTRY BY PERMIT)
62°45'W
62°16'W
63°53'S
64°00'S
64°02'W
64°10'S
64°20'S
62°40'W
Cape Roux
Cape Cockburn
Metchnikoff Point
Pasteur Peninsula
Bouquet Bay
Duclaux Point
Liege Island
Guyou Bay
Claude Point
Astrolabe Needle
DALLMANN BAY
Brabant Island
Hill Bay
Driencourt Point
Lanusse Bay
Minot Point
Mount Parry (2520)
Lecointe Island
Kayak Bay
Hunt Island
Pinel Point
Fleming Point
Cape Bayle
Melchior Islands
Anvers Island
Gand Island
Lapeyrère Bay
Fournier Bay
Humann Point
Buls Bay
Terrada Point
Buls Island
Duperré Bay
Hulot Peninsula
Navy Point
Andrews Point
Lehaie Point
GERLACHE STRAIT
63°00'W
62°30'W
62°00'W
64°15'S
64°30'S
Projection: Lambert Conformal Conic
Central Meridian: 62°38'09"W
Standard parallels: 64°10'S, 64°17'S
Datum & Spheroid: WGS84
Data sources: Coastline, ice free ground & Contours derived from ADD v.5 (2007)
Bathymetry derived from data gridded by P. Morris (2000)
Fauna derived from Wildlife Awareness Manual (Harris 2006)
MAP 1: ASPA No. 153
Eastern Dallmann Bay
0 5 10
Kilometers
N
12 February 2009
United States Antarctic Program
Environmental Research & Assessment

Management Plan for

Antarctic Specially Protected Area No. 162

MAWSON'S HUTS, CAPE DENISON, COMMONWEALTH BAY, GEORGE V LAND, EAST ANTARCTICA

Latitude 67º00'30"S, Longitude 142º39'40"E

Introduction

Mawson's Huts are four timber huts that served as the winter base of the Australasian Antarctic Expedition of 1911–14 organised and led by geologist Dr Douglas Mawson. An important symbol of the so-called 'heroic age' of Antarctic exploration (1895-1917), the huts at Cape Denison are the least disturbed and altered of those structures remaining from the era. The achievements of the Mawson expedition include some of the earliest and most comprehensive studies of Antarctic geology, glaciology, oceanography, geography, terrestrial magnetism, astronomy, meteorology, biology, zoology and botany.

In recognition of the rarity and richness of this social, cultural and scientific resource, the Mawson's Huts site was designated under Measure 2 (2004) as Antarctic Specially Protected Area (ASPA) No. 162, to protect the important historical, technical, architectural and aesthetic value of the four Australasian Antarctic Expedition huts. The ASPA also contains part of the site designated under Measure 3 (2004) as Historic Site and Monument No. 77 Cape Denison, Commonwealth Bay, George V Land, and is embedded within Antarctic Specially Managed Area (ASMA) No. 3 Cape Denison, Commonwealth Bay, George V Land, designated under Measure 1 (2004).

1. Description of values to be protected

The ASPA is primarily designated to protect Mawson's Huts which is a site of considerable historic, archaeological, technical, social and aesthetic values.

Historic value

Mawson's Huts at Cape Denison, Commonwealth Bay was the main base of the Australasian Antarctic Expedition (AAE) of 1911–14, led by Dr Douglas Mawson. Mawson's Huts is one of a group of only six sites of 'heroic age' huts where pragmatic consideration of the need to provide permanent shelter in the Antarctic environment resulted in an expedition hut form suitable for polar regions.

Mawson's Huts were built in January, February and March 1912 and May 1913. In their surviving form and setting the huts illustrate the isolation and harsh environment of Cape Denison. They also demonstrate the cramped internal conditions endured by expedition members. The living quarters in the Main Hut, for example, a single space measuring 7.3m x 7.3m, provided sleeping and kitchen facilities for 18 men.

The external form and internal structure of the largest hut, the Main Hut, are a simple but strong architectural concept: a square base topped by a pyramid roof (to prevent damage by blizzards), with skylights to provide natural lighting. Following the decision to combine two expedition bases into one, a hip-roofed accommodation hut measuring 5.5m x 4.9m was adjoined to the living quarters and equipped as a workshop. A 1.5m wide verandah surrounded the structure on three sides, under the same roof. The verandah was used as a storage space that also assisted in insulating the hut from the weather.

The two huts that form the Main Hut were built of Oregon timber frames clad with Baltic pine tongue-and-groove boards. They were prefabricated in Australia, and on-site construction was assisted by a branded letter code on framing members and coded colours painted on board ends. (None of the expedition party had any previous construction experience). The survival of the Main Hut at one of the windiest sites on Earth is testimony to the strength of its design and care of its construction.

Mawson's Huts contain numerous significant and relatively untouched artefacts from the 'heroic age', which form a rich resource of material available for research and interpretation, and potentially yielding information about aspects of expeditioner life not included in official written accounts.

The three other AAE huts are:

- The Absolute Magnetic Hut, constructed during February 1912. It measured 1.8m x 1.8m in plan with a skillion roof and had an Oregon timber frame to which boards of remnant timber were fixed. The hut was used in association with, and as a reference point for, observations made in the Magnetograph House. Today is it considered to be a standing ruin.
- The Magnetograph House was erected in March 1912 to house equipment used to measure variations in the South Magnetic Pole. It measures 5.5m x 2m with a shallow pitched skillion roof and no windows. After the first building attempt was demolished by high winds, large rocks were heaped against the new hut to provide a wind barrier. Sheepskin and hessian attached to the roof also assisted in keeping the internal temperature constant and in minimising the ingress of drift snow. These innovations may have contributed to the relatively intact condition of the hut today.
- Construction of the Transit Hut commenced in May 1913, with packing case timbers being affixed to an Oregon frame. The structure was also clad in sheepskin and canvas. Originally known as the Astronomical Observatory, the hut housed the theodolite used to take star sights to determine the exact longitude of Cape Denison. It is now considered to be a standing ruin.

Aesthetic values

Mawson's Huts are of aesthetic value; the building form of the huts themselves shows the functional and efficient planning that was undertaken in response to the site position and the elements endured by the expedition members. The weathering of the huts and the decay of the remains gives a feeling of time elapsed and exposure to the elements.

2. Aims and objectives

The aim of the Management Plan is to provide protection for the huts so that their values can be preserved. Management of the Area aims to:

- avoid degradation of, or substantial risk to, the values of the Area;
- maintain the historic values of the Area through planned conservation[1] and archaeological work programmes;
- allow management activities which support the protection of the values and features of the Area;
- allow scientific research; and
- prevent unnecessary human disturbance to the Area, its features and artefacts by means of managed access to the four Australasian Antarctic Expedition huts.

[1] In the context of this Management Plan the term *conservation* "means all the processes of looking after a place so as to retain its cultural significance", as defined in Article 1.4 , of The Burra Charter: The Australian ICOMOS Burra Charter, 1999.

3. Management activities

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

- programmes of conservation and archaeological work and environmental monitoring work on Mawson's Huts and any artefacts contained within the huts and an area within five (5) metres around the huts;
- visits made as necessary for management purposes;
- review of the Management Plan at least once every five (5) years, and update as required;
- consultation among national Antarctic programs operating in the region, or those with an interest or experience in Antarctic historic site management, with a view to ensuring the above provisions are implemented effectively; and
- installation of signage to indicate the boundaries of the ASPA.

4. Period of designation

This ASPA is designated for an indefinite period.

5. Description of the Area

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

Cape Denison is a 1.5km-wide peninsula projecting into the centre of Commonwealth Bay, a 60km-wide stretch of coast in George V Land, East Antarctica. The topography of Cape Denison is defined by a series of four rocky ridges, running south-southeast to north-northwest, and three valleys filled with ice, snow, and glacial moraine. The largest, most westerly of these valleys contain the four Australasian Antarctic Expedition huts. At the seaward end of this valley is Boat Harbour, a 400m long indentation in the coast.

Mawson's Main Hut is located about 65m from the harbour (Map A). The Transit Hut is located 40m northeast of the Main Hut; the Magnetograph House is approximately 310m north-northeast of the Main Hut; and the Absolute Magnetic Hut is about 275m northeast of the Main Hut.

The ASPA covers four areas. Each area consists of one hut and an area extending five (5) metres from the perimeter of the hut. The huts are located at:

- Main Hut: 67º00'31"S, 142º39'39"E;
- Transit Hut: 67°00'30"S, 142°39'42"E;
- Absolute Magnetic Hut: 67°00'23"S, 142°39'48"E; and
- Magnetograph House: 67°00'21"S, 142°39'37"E.

Cape Denison is the summer habitat for breeding Adélie penguins, Wilson's storm-petrels, snow petrels and South Polar skuas. Several colonies are located close to the ASPA, and the ASPA areas may from time to time be traversed by penguins returning to their nests. Weddell seals, southern elephant seals and leopard seals have been recorded hauling out and, in the case of elephant seals, moulting at Cape Denison. However, the presence of seals within the immediate ASPA boundaries is not recorded.

The only flora evident near the huts are lichens and non-marine algae. Although the non-marine algae have yet to be studied, a list of lichen species is included at Appendix A.

5(ii) Access to the Area

Sea, land and air access to Mawson's Huts is difficult due to the rugged topography and climate of the area. Sea ice extent and uncharted bathymetry may constrain ship access to approximately 3nm from the coastline. Access can be gained either by small watercraft or by helicopter, although

attempts to land are frequently hampered by heavy seas and prevailing north-westerly or katabatic winds. Boat landings can be made at Boat Harbour and due north of Sørensen Hut (within ASMA 3). The helicopter landing site and approach and departure flight paths are indicated on Map C.

Onshore access to and within the ASPA is on foot. With the exception of a short boardwalk close to the Main Hut, there are no roads or other transportation infrastructure on shore. The boardwalk is frequently covered by snow and therefore unusable for all but a few weeks of the year.

5(iii) Location of structures and other anthropogenic objects within and near to the Area

The ASPA is located within the Cape Denison ASMA No. 3, which features several other structures from this expedition, including survey markers and the mast atop Anemometer Hill; and six non-historic structures, including temporary field shelters. The non-historic structure located closest to the ASPA is Granholm Hut, situated some 160m northwest of the Main Hut. It contains building materials, some field equipment and limited provisions.

Objects left by the Australasian Antarctic Expedition are strewn within the Area. Of particular note is the artefact scatter located immediately north of the Main Hut. Due to their significant cultural heritage value, these artefacts have been included within the Cape Denison ASMA and Historic Site and Monument (HSM) No. 77.

5(iv) Location of other protected areas in or near to the Area

ASPA 162 is located within the Cape Denison ASMA No. 3. For further details about ASMA 3, refer to the management plan pertaining to this Area. Cape Denison is also listed as a Historic Site and Monument under the Antarctic Treaty.

6. Zones within the Area

There are no zones within ASPA 162.

7. Maps of the Area

Map A: Cape Denison Management Zones.

The map shows the boundaries of the ASMA, the Historic Site, the Visual Protection Zone, ASPA No. 162, and significant topographic features of the Area. The inset map indicates the location in relation to the Antarctic continent.

Map B: Cape Denison Visual Protection Zone.

The map shows the boundaries of the Visual Protection Zone and indicates the position of significant historic artefacts, including the four Australasian Antarctic Expedition huts, the Memorial Cross, and Anemometer Hill, the site of the BANZARE Proclamation Pole.

Map C: Cape Denison Flight Paths and Bird Colonies.

The map indicates the approaches, departures and landing site for helicopters, as well as the location of bird colonies in the vicinity.

Specification for all maps:

Projection: UTM Zone 54
Horizontal Datum: WGS84

8. Permit conditions

Annex V of the Protocol on Environmental Protection to the Antarctic Treaty prohibits entry into an

ASPA except in accordance with a Permit. Permits shall only be issued by appropriate national authorities and may contain general and specific conditions. A Permit may be issued by a national authority to cover a number of visits in a season by the same operator. Parties operating in the Commonwealth Bay area shall consult together and with non-government operators interested in visiting the Area to ensure that visitors are managed appropriately.

General conditions for issuing a Permit to enter the ASPA may include:

- activities related to conservation, inspection, maintenance, research and/or monitoring purposes;
- management activities consistent with and/or in support of the management objectives of the ASPA Management Plan objectives; and
- educational purposes and activities, including tourism, consistent with the aims and objectives of this Management Plan.

The Permit should be issued for a stated period and shall be carried within the Area. A visit report must be supplied to the authority named in the Permit within three (3) months of the expiry date of the Permit.

8(i) Access to and movement within or over the Area

Onshore access to and within the huts is on foot. Depending on snow conditions, a short boardwalk close to the Main Hut may be accessible and should be used whenever practicable so as to avoid potential impact on the artefact scatter to the north of the Main Hut.

Authorised work parties, when undertaking conservation work on the huts, may use small all-terrain vehicles within the Area to assist with the transport of materials and equipment to and from the buildings.

8(i).1 Visitor management

Day visits to Mawson's Huts may be permitted, provided that:

- each group is accompanied by a person with cultural heritage skills (to the satisfaction of the permitting Party) who remains in the Area for the duration of the visit;
- briefings on this Management Plan and the values of the ASPA are conducted prior to visits and adequate site interpretation materials are made available to each visitor;
- visitors accessing the Area avoid sensitive historic artefacts, such as the artefacts scatter to the immediate north of the Main Hut, and other sensitive areas, such as lichen communities; and
- visitors do not touch the exterior fabric of the buildings or any artefacts.

Visitors may enter the Main Hut and Magnetograph House provided that:

- a person who has approved cultural heritage skills accompanies all visitors inside the huts;
- visitation of the interior of the huts is limited to up to four (4) persons (including the guide) at any one time inside the Main Hut, and up to three (3) persons (including the guide) in the Magnetograph House; and
- artefacts, scientific and related conservation management equipment and the interior building fabric are not touched.

Authorised work parties undertaking approved conservation and/or archaeological work programmes are exempt from the provisions of this sub-section.

8(ii) Activities which are or may be conducted within the Area

- Activities related to the regular programme of conservation work, and activities for inspection, maintenance, research and/or monitoring purposes;
- scientific research;

- visitation for educational purposes, including tourism; and
- visitation to assess the effectiveness of the Management Plan and management activities.

8(iii) The installation, modification, or removal of structures

Other than to preserve the values of Mawson's Huts, no new structures or equipment should be installed.

No alteration to Mawson's Huts shall be made, or structures installed, except for those required for the conservation, research, monitoring or maintenance activities specified above.

Cape Denison is also designated as a Historic Site. In accordance with Annex V, Article 8 (4) of the Protocol, no historic structure or other artefact at Cape Denison (including Mawson's Huts) should be damaged, removed or destroyed except in accordance with an approved conservation and/or archaeological work programme. A historic artefact may only be removed from the Area for the purposes of conservation and/or preservation and then only in accordance with a Permit issued by a national authority.

The repatriation of the artefact to its original location at Cape Denison is generally preferable unless further damage or deterioration may result from repatriation.

8(iv) The location of field camps

- Camping is not allowed within the Area.
- Use of Mawson's Huts for accommodation is not permitted.
- Existing non-historic infrastructure within the ASMA should be used by Parties undertaking activities in accordance with this Management Plan, in preference to establishing new infrastructure.
- Tents should be pitched on the wooden platform adjacent to Sørensen Hut.

8(v) Restrictions on materials and organisms that may be brought into the Area

- No living animals, plant material, micro-organisms or soils shall be deliberately introduced into the Area, and all reasonable precautions shall be taken to prevent accidental introductions.
- No poultry or poultry products, with the exception of sterilised egg powder, may be brought into the Area.
- No polystyrene packaging materials may be brought into the Area.
- No pesticides or herbicides may be brought into the Area, except those used for the purposes of conservation or preservation of historic structures or artefacts, which shall be allowed into the Area in accordance with a Permit, and then removed from the Area at or before the conclusion of the activity for which the Permit was granted.
- Fuel, food and other materials are not to be deposited in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted.
- Use of combustion-type lanterns is not permitted inside the Area under any circumstances.
- Smoking in the Area is not permitted.

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

Taking or harmful interference with native flora and fauna is prohibited, except in accordance with a separate Permit issued under Article 3 of Annex II (of the Protocol on Environmental Protection to the Antarctic Treaty) by the appropriate national authority specifically for that purpose.

8(vii) The collection or removal of anything not brought into the Area by the Permit holder

- No historic structure or other artefact in the Area may be handled, disturbed or removed from

the Area unless for conservation, preservation or protection purposes, or for scientific reasons, and then only in accordance with a Permit issued by an appropriate national authority.

- The repatriation of the artefact to the location at Cape Denison from which it was removed is generally preferable unless further damage or deterioration may result from repatriation.
- If an artefact is to be removed, the Australian national program should be informed so that documentation regarding that program's archaeological research at Mawson's Huts may be amended accordingly.
- Material of human origin that is likely to compromise the values of the Area, and 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 material is to be removed, the appropriate Authority must be notified and approval obtained.

8(viii) Disposal of wastes

All wastes, including human wastes, should be removed from the Area.

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

- The provision of information for tourists and other visitors to the Area, including a briefing video and interpretative literature;
- a post-visit survey to assist in the formal monitoring of visitor impact (with primary regard to conservation requirements, rather than visitor access);
- off-site interpretation of the Area that maximises the use of available media, including the internet; and
- the development of skills and resources, particularly those related to the excavation of artefacts from ice, to assist in the protection of the Area's values.

8(x) Reports to be made to the appropriate authority regarding visits to the Area

To enhance cooperation and the coordination of activities in the Area, to allow for effective site monitoring and management, to facilitate the consideration of cumulative impacts, and to fulfil the aims and objectives of this Management Plan, Parties should ensure that the principal holder for each Permit issued submits a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report Form contained in Appendix 4 of Resolution 2 (1998).

9. Exchange of information

Parties should maintain a record of activities approved for this ASPA 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 in a publicly accessible archive to maintain a record of visitation of the Area, to be used both in any review of this Management Plan and in organising further visitation and/or use of the Area.

10. Supporting documentation

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Angela Bender, mapping officer, Australian Antarctic Division, pers. comm. 9 April 2003; 16 April

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Godfrey, I. 2006. *Mawson's Huts Conservation Expedition 2006*. Mawson's Huts Foundation, Sydney

Hayes, J. Gordon 1928. *Antarctica: a treatise on the southern continent*. London: The Richards Press Ltd.: 212.

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Mawson, D. 1996 (reprint). *The Home of the Blizzard*. Adelaide: Wakefield Press: 53, 54, 62, 68.

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Patterson, D. 2003. *Mawson's Huts Conservation Expedition 2002: Field Leader's Report.*

Secretariat of the Antarctic Treaty, *Environmental Protection, Protected Areas* http://www.ats.aq/e/ep_protected.htm (Accessed 16 February 2009).

Professor Rod Seppelt, botanist, Australian Antarctic Division, pers. comm. 19 February 2003.

Appendix A

Flora recorded at Cape Denison, Commonwealth Bay

The following taxa were recorded at Cape Denison by the Australasian Antarctic Expedition (AAE) of 1911–14 and the British Australian New Zealand Antarctic Research Expedition (BANZARE) in 1929–31 and published by Carroll W. Dodge in BANZARE Reports, Series B, Vol. VII, July 1948.

LICHENS

Lecideaceae

Lecidea cancriformis Dodge & Baker
Toninia johnstoni Dodge

Umbilicaiaceae

U*mbilicaria decussata* (Vill.) Zahlbr.

Lecanoraceae

Rhizoplaca melanophthalma (Ram.) Leuck. & Poelt
Lecanora expectans Darb.
Pleopsidium chlorophanum (Wahlenb.) Zopf

Parmeliaceae

Physcia caesia (Hoffm.) Th. Fr.

Usnaeceae

Pseudephebe minuscula (Nyl. ex Arnold) Brodo & D. Hawksw.
Usnea antarctica Du Rietz

Blasteniaceae

Candelariella flava (C.W. Dodge & Baker) Castello & Nimis
Xanthoria elegans (Link) Th. Fr.
Xanthoria mawsonii Dodge

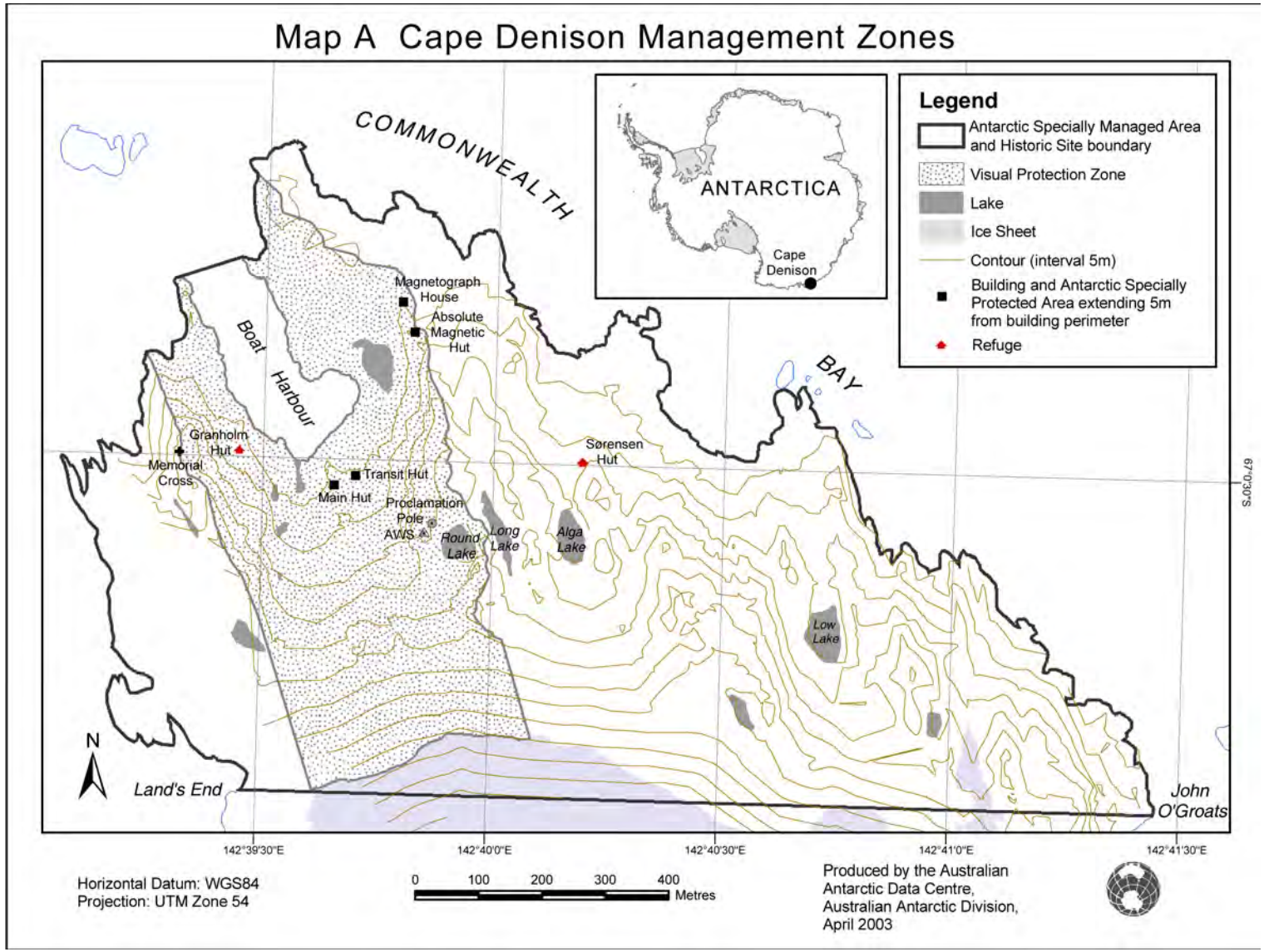
Buelliaceae

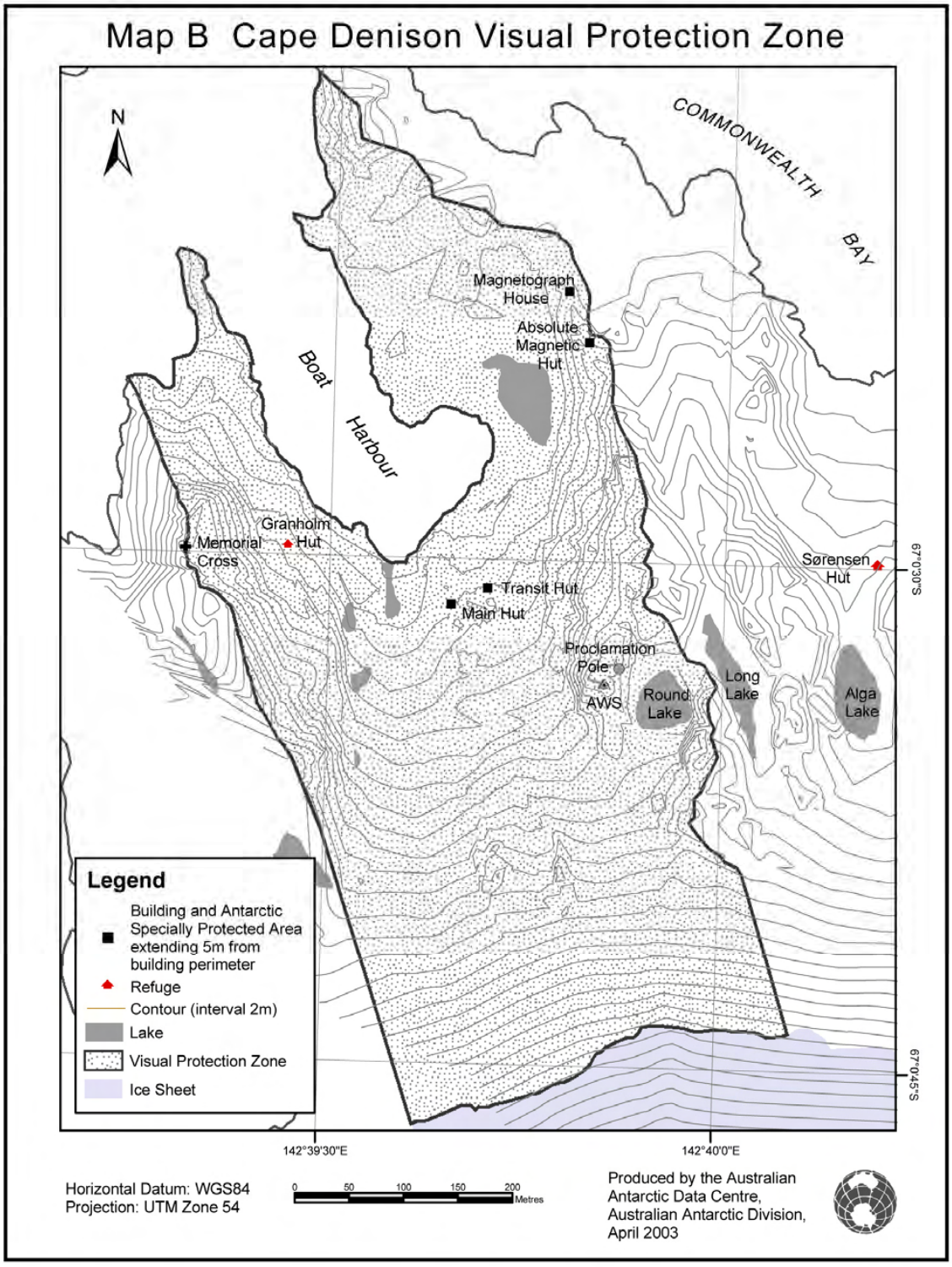
Buellia frigida Darb.

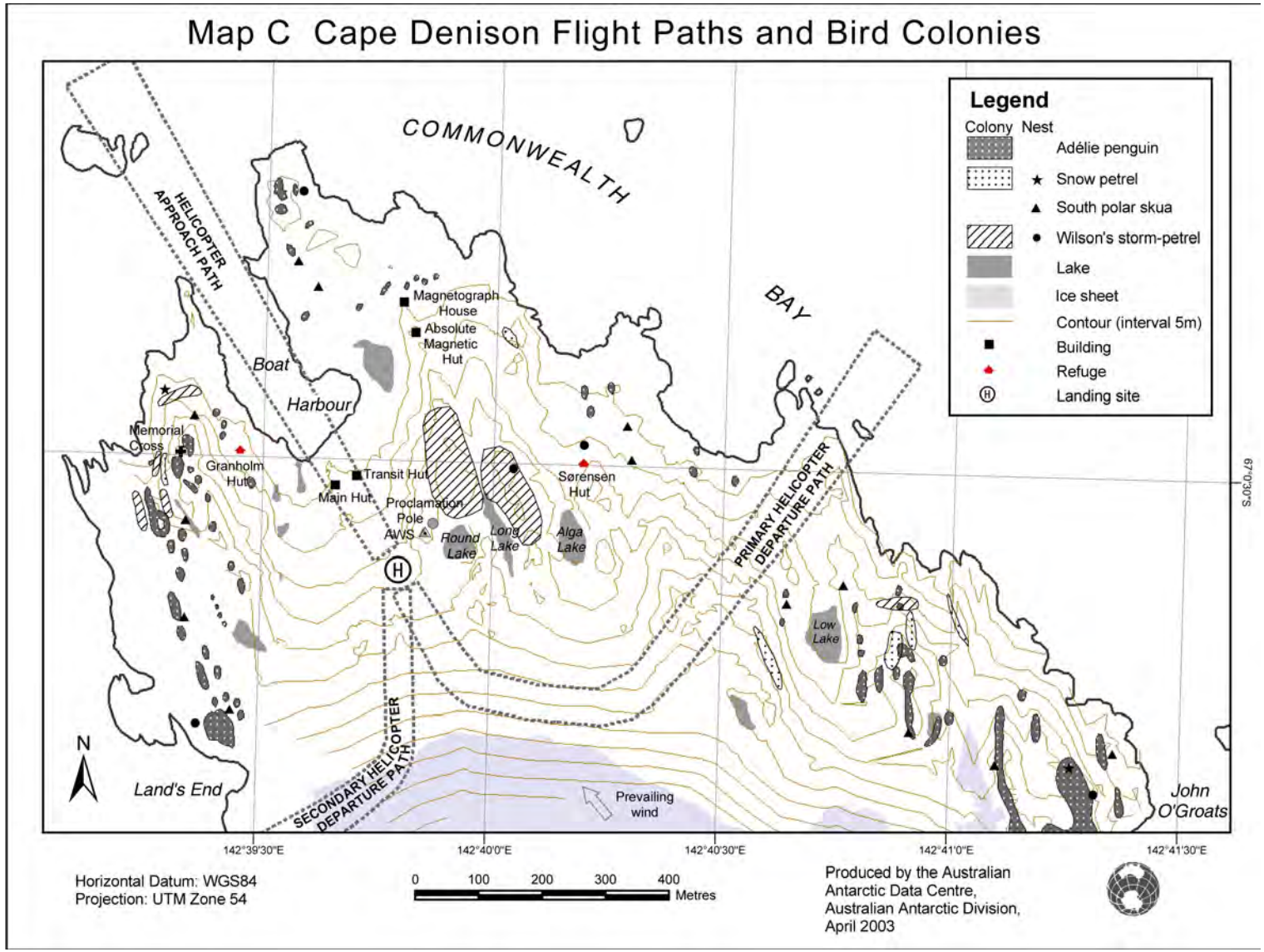
BRYOPHYTES

No bryophytes evident at Cape Denison.

There are numerous non-marine algae; however, no surveys have been undertaken.


Map A Cape Denison Management Zones
COMMONWEALTH
BAY
Boat Harbour
ANTARCTICA
Cape Denison
Legend
Antarctic Specially Managed Area and Historic Site boundary
Visual Protection Zone
Lake
Ice Sheet
Contour (interval 5m)
Building and Antarctic Specially Protected Area extending 5m from building perimeter
Refuge
Magnetograph House
Absolute Magnetic Hut
Granholm Hut
Memorial Cross
Transit Hut
Main Hut
Proclamation Pole
AWS
Round Lake
Long Lake
Alga Lake
Sørensen Hut
Low Lake
Land's End
John O'Groats
N
67°0'0"S
142°39'30"E
142°40'0"E
142°40'30"E
142°41'0"E
142°41'30"E
Horizontal Datum: WGS84
Projection: UTM Zone 54
0 100 200 300 400
Metres
Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, April 2003


Map B Cape Denison Visual Protection Zone
N
COMMONWEALTH BAY
Magnetograph House
Absolute Magnetic Hut
Boat Harbour
Granholm Hut
Memorial Cross
Transit Hut
Main Hut
Proclamation Pole
AWS
Round Lake
Long Lake
Alga Lake
Sørensen Hut
67°03'0"S
67°04'5"S
142°39'30"E
142°40'0"E
Legend
Building and Antarctic Specially Protected Area extending 5m from building perimeter
Refuge
Contour (interval 2m)
Lake
Visual Protection Zone
Ice Sheet
Horizontal Datum: WGS84
Projection: UTM Zone 54
0 50 100 150 200 Metres
Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, April 2003


Map C Cape Denison Flight Paths and Bird Colonies
Legend
Colony Nest
Adélie penguin
Snow petrel
South polar skua
Wilson's storm-petrel
Lake
Ice sheet
Contour (interval 5m)
Building
Refuge
Landing site
COMMONWEALTH
BAY
Boat
Harbour
HELICOPTER APPROACH PATH
Magnetograph House
Absolute Magnetic Hut
Memorial Cross
Granholm Hut
Transit Hut
Main Hut
Proclamation Pole
AWS
Round Lake
Long Lake
Alga Lake
Sørensen Hut
PRIMARY HELICOPTER DEPARTURE PATH
Low Lake
SECONDARY HELICOPTER DEPARTURE PATH
Prevailing wind
Land's End
John O'Groats
N
66°30'S
142°39'30"E
142°40'0"E
142°40'30"E
142°41'0"E
142°41'30"E
Horizontal Datum: WGS84
Projection: UTM Zone 54
0 100 200 300 400
Metres
Produced by the Australian Antarctic Data Centre, Australian Antarctic Division, April 2003

Management Plan for Antarctic Specially Protected Area No. 171

NARĘBSKI POINT, BARTON PENINSULA, KING GEORGE ISLAND

Introduction

Narębski Point is located on the southeast coast of Barton Peninsula, King George Island. The Area is delimited as latitude 62° 13' 40"S - 62° 14' 23"S and longitude 58° 45' 25"W - 58° 47' 00"W, and easily distinguished by mountain peaks on the north and the east boundaries and coastline on the southwest boundary.

The unique topography of the Area gives the outstanding aesthetic beauty with panoramic views, and the Area provides exceptional opportunities for scientific studies of terrestrial biological communities with high diversity and complexity of ecosystem. In particular, the coverage of mosses and lichens is very extensive. The most conspicuous vegetal communities are the associations of lichens and the moss turf dominated by *Usnea-Himantormia.* The present flora includes 1 Antarctic flowering plant species (only 2 flowering plant species were found as yet in the Antarctica), 51 lichen species, 29 moss species, 6 liverwort species, and 1 algae species.

Another noticeable feature in the Area is that over 2,900 pairs of Chinstrap Penguins – the largest number in King George Island – and over 1,700 pairs of Gentoo Penguins inhabit in the Area (Kim, 2002). There are also 12 other bird species (7 breeding and 5 non-breeding species). Among them, the 7 breeding birds include the Brown Skua (*Catharacta lonnbergi*), South Polar Skua (*Catharacta maccormicki*), Kelp Gull (*Larus dominicanus*), Antarctic Tern (*Sterna vittata*), Wilson's Storm Petrel (*Oceanites oceanicus*), Pale-faced Sheathbill (*Chionis alba*), and the Southern Giant Petrel (*Macronectes giganteus*).

The Area also includes water-shed systems, such as lakes and creeks, where dense microbial and algal mats with complex species assemblages are frequently found. These fresh water resources are essential to the diverse life forms in this Area. The high biodiversity of terrestrial vegetation with complexity of habitats enhance the potential values of the Area to be protected.

Through the Korea Antarctic Research Program, scientists have visited the Area regularly since 1980s in order to study its fauna and flora and geology. In recent years, however, Narębski Point has been frequented by visitors from the nearby stations with purposes other than scientific research, particularly during the reproductive season, and vulnerability to human interference has been increasing. Some studies note that King George Island has the potential for tourism development (ASOC, 2007 & 2008; Peter *et al*., 2005) and visitors to the King Sejong Station have increased from less than 20 people a year in the late 1980s to over 110 in recent years.

The primary reason for designation of the Area as an Antarctic Specially Protected Area is to protect its ecological, scientific, and aesthetic values from human interference. Long-term protection and monitoring of diverse range of species and assemblages at Narębski Point will contribute to the development of appropriate regional and global conservation strategies for the species and will provide information for comparisons with elsewhere.

1. Description of Values to be Protected

The Narębski Point area is designated as an Antarctic Specially Protected Area to protect its outstanding environmental values and to facilitate ongoing and planned scientific research.

The Area provides exceptional opportunities for scientific studies of terrestrial biological communities. Scientific research, including the monitoring of penguin colonies, has been carried out by several countries since the early 1980s. Outcomes of the research revealed the potential value of the Area as a reference site, particularly in relation to global warming and the impacts from human activities.

The unique topography of the Area, together with the abundance and diversity of fauna and flora, gives the Area an exceptional aesthetic value. Among others, the mountain peaks and the southernmost peaks provide breathtaking panoramic views.

For above reasons, the Area should be protected and subject to minimal disturbance by human activities with the exception of occasional monitoring studies including vegetation, bird populations, geological and geomorphologic studies.

2. Aims and Objectives

Management of Narębski Point 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 that cannot be carried out elsewhere, as well as the continuity of ongoing long term biological studies established in the Area;
- Protect the Area's aesthetic and scientific values.

3. Management Activities

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

- Personnel accessing the site shall be specifically instructed, by their national program (or competent authority) as to the content of the Management Plan;
- Signs illustrating the location and boundaries, with clear statements of entry restrictions, shall be placed at appropriate locations at the boundaries of the Area;
- All signs as well as scientific equipments and markers erected in the Area will be secured and maintained in proper conditions;
- The biological condition of the Area will be adequately monitored, including census on penguins and other birds populations;
- 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 that maintenance and management measures are adequate;
- National Antarctic Programs operating in the region are encouraged to consult with each other and exchange information to ensure that activities in the Area are undertaken in a manner consistent with the aims and objectives of this Management Plan.

4. Period of Designation

Designated for an indefinite period.

5. Maps

Maps 1 to 6 are attached at the end of this management plan as Annex II.

- Map 1: The location of Narębski Point in relation to the King George Island and the existing protected areas
- Map 2: Boundary of the ASPA
- Map 3: Distribution of bird colonies and seal haul-out sites within the ASPA
- Map 4: Distribution of the plant communities in the ASPA
- Map 5: Geomorphologic details of the ASPA
- Map 6: Access routes to the ASPA

6. Description of the Area

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

Narębski Point is located on the southeast coast of Barton Peninsula, King George Island and the Area is delimited as latitude 62° 13’ 40”S - 62° 14’ 23”S and longitude 58° 45’ 25” W - 58° 47’ 00” W. Boundaries are delimited by mountain peaks on the north and the east and coastline on the southwest. The southwest boundary can be easily recognized due to its distinguished geomorphology. The Area includes only the terrestrial area, excluding the intertidal zone. The total size of the Area is approximately 1 km^2.

The Area is rich in flora and fauna, of which the abundance of some species is exceptional. The cover of mosses and lichens is very extensive. There are large numbers of Chinstrap and Gentoo Penguins and the breeding areas of seven other birds including the nests of the Southern Giant Petrel. The high diversity in relief and coastal forms, due to the presence of different geologies and a prominent system of fractures, in addition to an extensive and varied vegetation cover, provides unusual scenic diversity in the Antarctic environment.

Climate

Meteorological data for the Area are confined entirely to observations at the King Sejong Station (1998-2007), about 2 km northwest of Narębski point. The climate is humid and relatively mild because of a strong maritime effect. The Area has an annual average temperature of -1.8 °C (maximum 9.8°C, minimum -23.1°C), relative humidity of 89%, total precipitation of 597.2 mm, and cloud cover of 6.8 Octas. The mean wind velocity is 7.1 m/s (37.6 m/s at the greatest), predominantly from the northwest and east throughout the year. The occurrence of blizzards in 2007 was 26 (total duration time 190 hours).

Geology

The lowermost lithostratigraphic unit in Barton peninsula is the Sejong formation (Yoo *et al*., 2001), formally regarded as a lower volcanic member. The Sejong formation is distributed in the southern and southeastern cliffs of Barton Peninsula (Lee *et al*., 2002). It is largely composed of volcaniclastic constituents gently dipping to the south and southwest. Mafic to intermediated volcanic lavas overlying the Sejong formation are widespread in Barton Peninsula, including the Area. They are mostly plagioclase-phyric or plagioclase- and clinopyroxene-phyric basaltic andesite to andesite with rare massive andesite. Some thick-bedded lapilli tuffs are intercalated with the lava flows. Mafic dikes, Narębski Point being one of them, cut the Sejong formation along the southern coast of the peninsula. Soils of the peninsula are subdivided into four suites based on bedrock type, namely those on granodiorite, basaltic andesite, lapilli tuff, and the Sejong formation (Lee *et al*., 2004). Soils are generally poor in organic materials and nutrients, except for those near seabird colonies.

Penguins

Colonies of Chinstrap Penguin (*Pygoscelis antarctica*) and Gentoo Penguin (*Pygoscelis papua*) are distributed on rocky inclines and hill crests of Narębski Point.

The Chinstrap Penguin is the most abundant breeding species at the site, with a total of 2,961 pairs observed in 2006/07. Chinstrap Penguins begin to lay eggs in early November and incubate for 32-43 days and the peak seasons of laying and hatching are estimated to be mid-November and mid-December, respectively (Kim, 2002). The maximum number of breeding Chinstrap Penguins was estimated at 7,306 pairs in 1986/87 (Trivelpiece *et al*., 1987), though their breeding population plummeted to 1,161 pairs in 1989/90 (Yoon, 1990). Since 1989/90, however, breeding pairs of Chinstrap Penguins have gradually increased and maintained its population at about 3,000 pairs from 1994/95 to 2006/07 (see Figure 1).

Breeding pairs of Gentoo Penguins have increased steadily from 556 pairs since 1986/87. A total of 1,719 pairs of Gentoo Penguins were counted in 2006/07 (see Figure 1). Gentoo Penguins start to lay eggs during mid-October, with the peak season occurring in late October. They incubate for 33-40 days and hatch in early December (Kim, 2002).

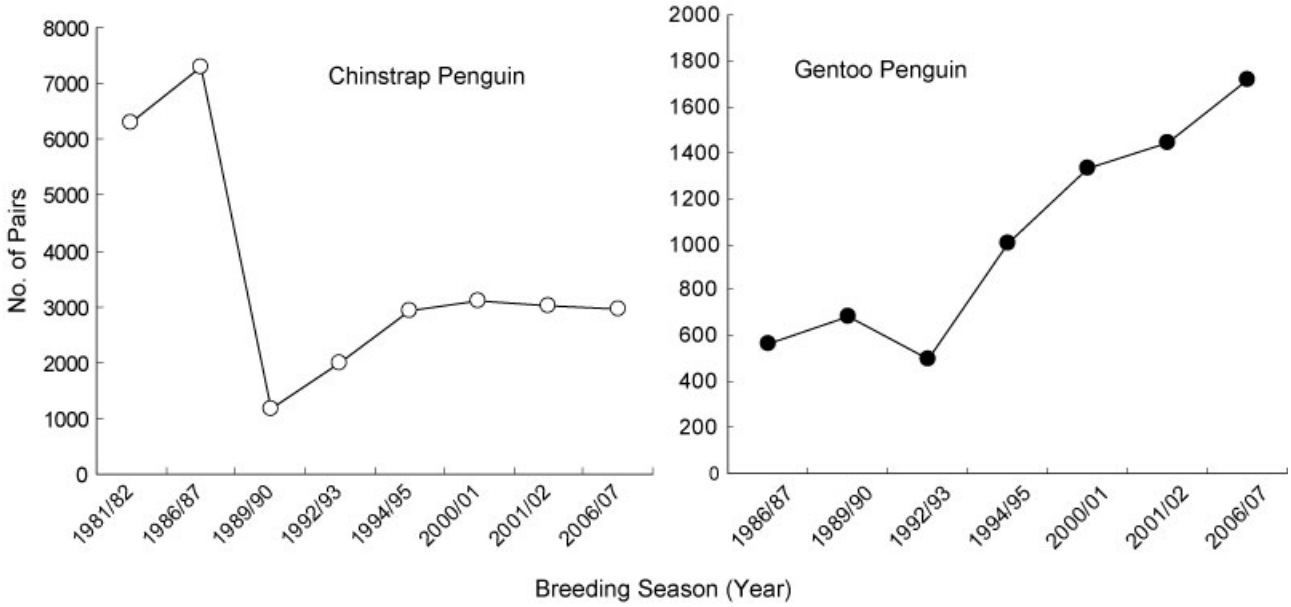


Figure 1. Breeding populations of Chinstrap Penguin and Gentoo Penguin at the Narębski Point (Jablonski, 1984; Trivelpiece *et al*., 1987; Yoon, 1990; MOST, 1993; MAF, 1997; Kim, 2002; MEV, 2007)

Other birds

There are 7 nesting bird species in the Area, including the Brown Skua (*Catharacta lonnbergi*), South Polar Skua (*Catharacta maccormicki*), Kelp Gull (*Larus dominicanus*), Antarctic Tern (*Sterna vittata*), Southern Giant Petrel (*Macronectes giganteus*), Wilson's Storm Petrel (*Oceanites oceanicus*), and Pale-faced Sheathbill (*Chionis alba*). In addition, there are 5 non-breeding bird species in the Area, including the Adelie Penguin (*Pygoscelis adelie*), Antarctic Shag (*Phalacrocorax bransfieldensis*), Arctic Tern (*Sterna paradisaea*), Cape Petrel (*Daption capense*), and Black-Bellied Storm-Petrel (*Fregatta tropica*). A summary of the estimated number of nests by species is presented in Table 1.

Brown Skuas and South Polar Skuas prey on penguin eggs and chicks, and some pairs of skuas occupy penguin sub-colonies as feeding territory during breeding season (Trivelpiece *et al*., 1980; Hagelin and Miller, 1997; Pezzo *et al*., 2001; Hahn and Peter, 2003). South Polar Skuas nesting in the Area do not depend on penguin eggs and chicks for their chick-rearing. On the contrary, during the 2006/07 season, all Brown Skua pairs (4 pairs) breeding in this Area were observed to occupy their own feeding territory in penguin sub-colonies and defend them.

Two pairs of Pale-faced (or Snowy) Sheathbill bred near penguin rookery in Narębski Point (2006/07). Pale-faced Sheathbills are omnivores and forage for food around the breeding colonies of seabirds. They feed on penguin faeces, eggs, and dead chicks, and also steal krill from penguins at the site.

Table 1. Estimated number of nests, by species (2006/07)

Species		Number of nests
Gentoo Penguin	*Pygoscelis papua*	1719
Chinstrap Penguin	*Pygoscelis antarctica*	2961
Brown Skua	*Catharacta lonnbergi*	4
South Polar Skua	*Catharacta maccormicki*	27
Kelp Gull	*Larus dominicanus*	6
Antarctic Tern	*Sterna vittata*	41
Southern Giant Petrel	*Macronectes giganteus*	9
Wilson's Storm Petrel	*Oceanites oceanicus*	19
Pale-faced Sheathbill	*Chionis alba*	2

Vegetation

Most of the ice-free areas of Barton Peninsula are covered by relatively rich vegetation, dominated by cryptogamic species. The cover of mosses and lichens is very extensive within the Area. The most conspicuous vegetal communities are the associations of dominant lichens *Usnea-Himantormia* and the moss turf dominated by *Sanionia-Chorisodontium*. The algal community is dominated by the green fresh water alga *Prasiola crispa*, which is established around penguin colonies. The present flora includes 1 Antarctic flowering plant species, 51 lichen species, 29 moss species, 6 liverwort species, and 1 algae species. In the case of algae, only the species forming macroscopically detectable stands were recorded. No information on cyanobacteria and mycobiota occurring in this Area is available, as studies have not been undertaken. The detailed vegetation list is shown in Annex I.

6(ii) Restricted zones within the Area

None.

6(iii) Location of structures within the Area

There are no structures within the Area. A refuge facility is located about 100m away from the Area toward the Southeastern coast. The King Sejong Station (Republic of Korea), which is located 2 km to the northwest of Narębski Point, is the closest major facility.

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

- ASMA No. 1, Admiralty Bay, King George Island, South Shetland islands lies about 8 km northeast.
- ASPA No. 125, Fildes Peninsula, King George Island, South Shetland islands lies about 11 km west.
- ASPA No. 128, Western Shore of Admiralty Bay, King George Island, South Shetland islands lies about 17 km east.
- ASPA No. 132, Potter Peninsula, King George Island, South Shetland islands lies about 5 km east.
- ASPA No. 133, Harmony Point, Nelson Island, South Shetland islands lies about 25 km southwest.
- ASPA No. 150, Ardley Island, King George Island, South Shetland islands lies about 9 km to the west.
- ASPA No. 151, Lions Rump, King George Island, South Shetland islands lies about 35km northeast.
- HSM No. 36, Replica of a metal plaque erected by Eduard Dallmann at Potter Cove, King George Island, lies about 5 km east.
- HSM No. 50, Plaque to commemorate the research vessel Professor Siedlecki which landed in February 1976, Fildes Peninsula, King George Island lies about 10 km west.
- HSM No. 51, Grave of W. Puchalski, an artist and a producer of documentary films, who died on 19 January 1979, lies about 18 km northeast.
- HSM No. 52, Monolith erected to commemorate the establishment on 20 February 1985 of Great Wall Station (China), Fildes Peninsula, King George Island lies about 10 km west.
- HSM No. 82, Plaque at the foot of the monument commemorating the Signatories to the Antarctic Treaty and successive IPYs, lies about 12 km west.

7. Permit Conditions

Entry into the Area is prohibited except in accordance with a permit issued by appropriate national authorities as designated under Article 7 of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty.

Conditions for issuing a permit to enter the Area are that:

- It is issued only for scientific purposes that cannot be met elsewhere;

- The actions permitted will not jeopardize the natural ecological system of the Area;
- The actions permitted are in accordance with this Management Plan;
- Any management activities are in support of the objectives of the Management Plan;
- The permit, or an authorized copy, must be carried within the Area;
- Permits shall be valid for a stated period and identify the competent authority;
- A report regarding the visit shall be submitted to the competent national authority named in the permit.

7(i) Access to, and movements within or over, the Area

- Access to the Area is possible on foot along the coast or by small boat without anchoring. The access routes and the landing site are shown in Map 6.
- Pedestrian movements should be kept with caution so as to minimize disturbance to flora and fauna, and should walk on snow or rocky terrain if practical, but taking care not to damage lichens.
- Vehicle traffic of any type is not permitted inside the Area.
- The operation of aircraft over the Area will be carried out, as a minimum requirement, in compliance with 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 meters, except in cases of emergency or aircraft security. Over flights, however, should be avoided.

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 jeopardize the ecosystem of the Area;
- Essential management activities, including monitoring;
- Constraints may be placed on the use of motor-driven tools and any activity likely to generate noise and thereby cause disturbances to nesting birds during the breeding period (from October 1 to March 31).

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

- No structures will be built and no equipment installed within the Area, with the exception of scientific or management activities, as specified in the permit.
- Any scientific equipment installed in the Area should be approved by a permit and clearly identify the permitting country, name of the principal investigator, and year of installation and date of expected removal. All the equipment should pose a minimum risk of pollution to the Area or a minimum risk of causing disturbances to the flora 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

- Camping is prohibited within the Area except in an emergency, but if necessary, the use of the refuge facility located on the shore near the eastern boundary of the Area is strongly encouraged (see Map 2).

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 or fresh fruit and vegetables are to be taken into the Area.
- To minimize the risk of microbial or vegetation introductions from soils at other Antarctic sites, including the station, or from regions outside Antarctica, footwear and any equipment (particularly sampling equipment and markers) to be used in the Area shall be thoroughly cleaned before entering the

Area (any terrestrial activity should be consistent with the 'Environmental code of conduct for terrestrial scientific field research in Antarctica').

- No herbicides or pesticides shall be introduced into the Area. Any other chemical product, which shall 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 material are not to be stored in the Area, unless required for essential purposes connected with the activity for which the permit has been granted, provided it is securely stored so that wildlife cannot have access to it.

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

- Any taking or harmful interference, except in accordance with a permit, is prohibited and 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.

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.
- Anything of human origin likely to compromise the values of the Area, which were not brought into the Area by the permit holder or otherwise authorized, may be removed unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case, the appropriate authority should be notified.

7(viii) Disposal of waste

- All wastes, including all human wastes, shall be removed from the Area. Human waste may be disposed of into the sea in accordance with Article 5 of Annex III of the Protocol on Environmental Protection to the Antarctic Treaty.

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 carry out biological monitoring and site inspection activities, which may involve the collection of a small number of samples for scientific analysis, to erect or maintain signboards, or to carry out protective measures.

7(x) Requirements for reports

The principal permit holder for each issued permit shall submit a report of activities undertaken in the Area. Such reports should include the information identified in the Visit Report form suggested by SCAR. This report shall be submitted to the authority named in the permit as soon as practicable, but not later than 6 months after the visit has taken place. Records of such reports should be stored indefinitely and made accessible to any interested Party, SCAR, CCAMLR, and COMNAP if requested, so as to provide necessary information of human activities in the Area to ensure adequate management of the Area.

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ANNEX I. List of flora in the Site

Taxa

Lichens
Acrospora austroshetlandica (C.W. Dodge) Øvstedal
Bryoria sp.
Buellia anisomera Vain.
Buellia russa (Hue)Darb.
Caloplaca lucens (Nyl.) Zahlbr.
Caloplaca sublobulata (Nyl.) Zahlbr.
Cetraria aculeata (Schreb.) Fr.
Cladonia borealis S. Stenroos
Cladonia chlorophaea (Flörke ex Sommerf.) Spreng.
Cladonia furcata (Huds.) Schaer.
Cladonia gracilis (L.) Willd.
Cladonia merochlorophaea var *novochlorophaea* Sipman
Cladonia pleurota (Flörke) Schaer.
Cladonia pyxidata (L.) Hoffm.
Cladonia scabriuscula (Delise) Nyl.
Haematomma erythromma (Nyl.) Zahlbr
Himantormia lugubris (Hue.) I. M. Lamb
Huea coralligera (Hue) C. W. Dodge & G. E. Baker
Lecania brialmontii (Vain.) Zahlbr.
Lecania gerlachei (Vain.) Darb.
Lecanora polytropa (Hoffm.) Rabenh.
Lecidea cancriformis C.W. Dodge and G.E. Baker
Lecidella carpathica Körb.
Massalongia carnosa (Dicks.) Körb.
Ochlorechia frigida (Sw.) Lynge
Pannaria austro-orcadensis Øvstedal
Pertusaria excudens Nyl.
Physcia caesia (Hoffm.) Fürnr.
Physcia dubia (Hoffm.) Lettau
Physconia muscigena (Ach.) Poelt
Placopsis contourtuplicata I. M. Lamb
Porpidia austrosheltandica Hertel
Pseudophebe pubescens (L.) M. Choisy
Psoroma cinnamomeum Malme
Psoroma hypnorum (Vahl) Gray
Ramalina terebrata Hook f, & Taylor
Rhizocarpon geographicum (L.) DC.
Rhizoplaca aspidophora (Vain.) Redón
Rhizoplaca melanophthalma (Ram.) Leuckert & Poelt
Rinodina olivaceobrunnea C.W. Dodge & G. B. Baker
Sphaerophorus globosus (Huds.) Vain.
Stereocaulon alpinum Laurer
Tephromela atra (Huds.) Hafellmer ex Kalb
Tremolecia atrata (Ach.) Hertel
Turgidosculum complicatulum (Nyl.) J. Kohlm. & E. Kohlm
Umbilicaria antarctica Frey & I. M. Lamb
Umbilicaria decussata (Vill.) Zahlbr.

Usnea antarctica Du Rietz
Usnea aurantiaco-atra (Jacq.) Bory
Xanthoria candelaria (L.) Th. Fr.
Xanthoria elegans (Link) Th. Fr.

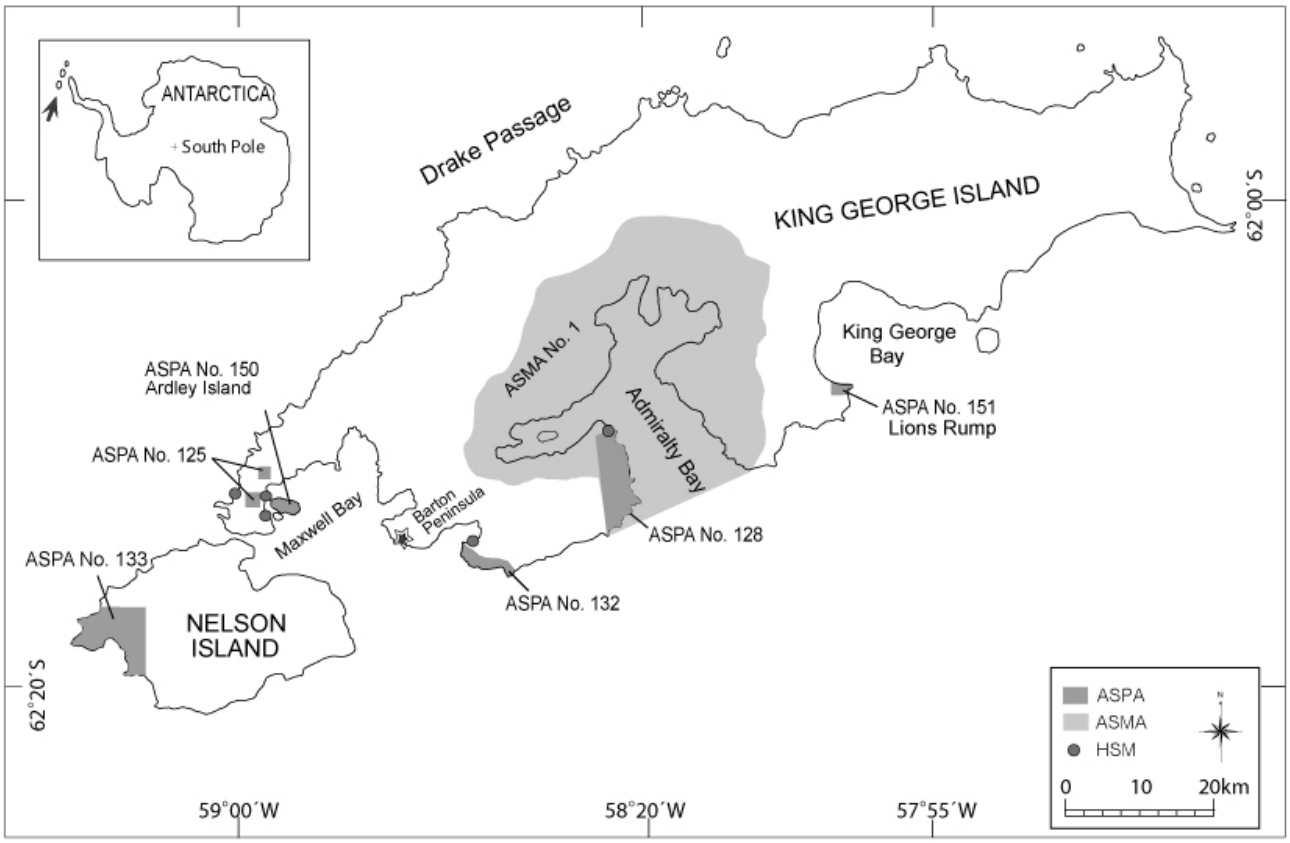
Mosses
Andreaea depressinervis Cardot
Andreaea gainii Cardot
Andreaea regularis Müll. Hal.
Bartramia patens Brid.
Bryum argenteum Hedw.
Bryum orbiculatifolium Cardot & Broth.
Bryum pseudotriquetrum (Hedw.) C.F. Gaertn. et al.
Ceratodon purpureus (Hedw.) Brid.
Chorisodontium aciphyllum (Hook. f. & Wils.)
Dicranoweisia brevipes (Müll. Hal.) Cardot
Dicranoweisia crispula (Hedw.) Lindb. Ex Milde
Ditrichum hyalinum (Mitt.) Kuntze
Ditrichum lewis-smithii Ochyra
Encalypta rhaptocarpa Schwägr.
Hennediella antarctica (Ångstr.) Ochyra & Matteri
Notoligotrichum trichodon (Hook. f. Wils.) G. L. Sm.
Pohlia drummondii (Müll. Hal.) A. K. Andrews
Pohlia nutans (Hedw.) Lindb.
Pohlia wahlenbergii (Web. & Mohr) A. L. Andrews
Polytrichastrum alpinum (Hedw.) G. L. Sm.
Polytrichum strictum Brid.
Racomitrium sudeticum (Funck) Bruch & Schimp.
Sanionia georgico-uncinata (Müll. Hal.) Ochyra & Hedenäs
Sanionia uncinata (Hedw.) Loeske
Schistidium antarctici (Card.) L. I. Savicz & Smirnova
Syntrichia filaris (Müll. Hal.) Zand.
Syntrichia princeps (De Not.) Mitt.
Syntrichia saxicola (Card.) Zand.
Warnstorfia sarmentosa (Wahlenb.) Hedenäs

Liverworts
Barbilophozia hatcheri (A. Evans) Loeske
Cephalozia badia (Gottsche) Steph.
Cephaloziella varians (Gottsche) Steph.
Herzogobryum teres (Carrington & Pearson) Grolle
Lophozia excisa (Dicks.) Dumort.
Pachyglossa disstifidolia Herzog & Grolle

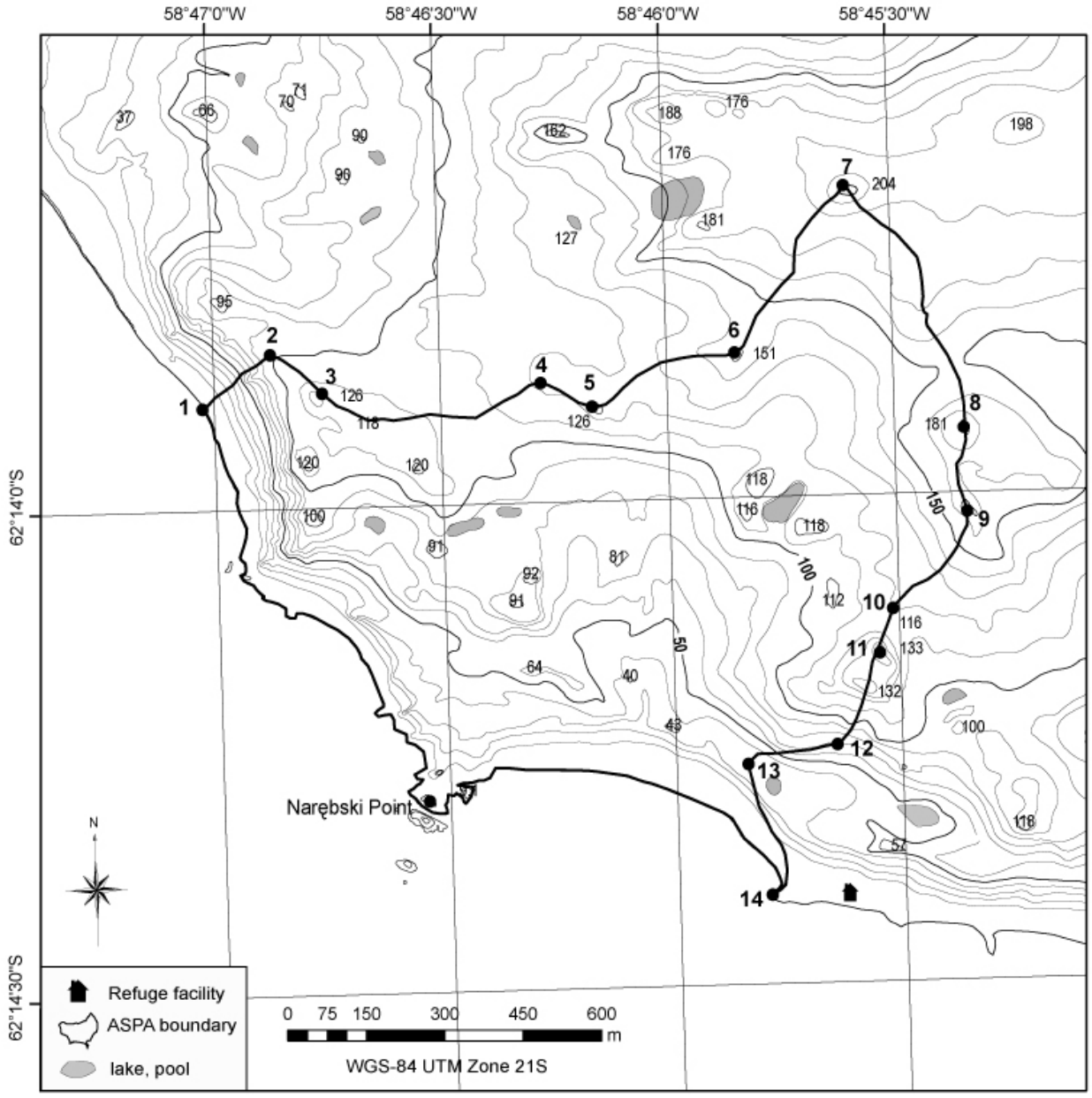
Algae
Prasiola crispa (Ligtf.) Menegh.

Flowering plant
Deschampsia antarctica Desv.

ANNEX II. Maps

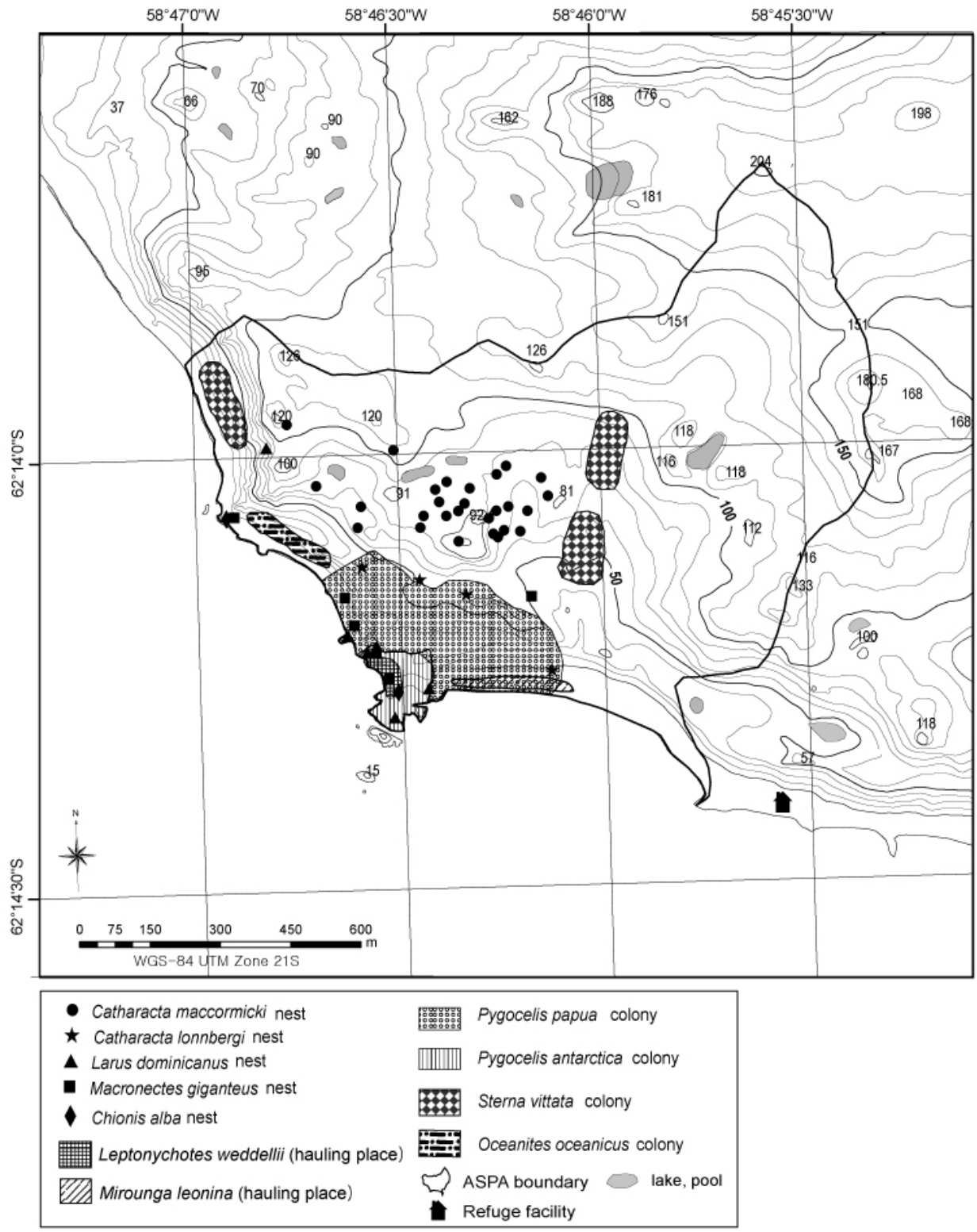


Map 1. Location of Narębski Point (✦) in relation to King George Island and the existing protected areas (ASMA, ASPAs, HSMs)

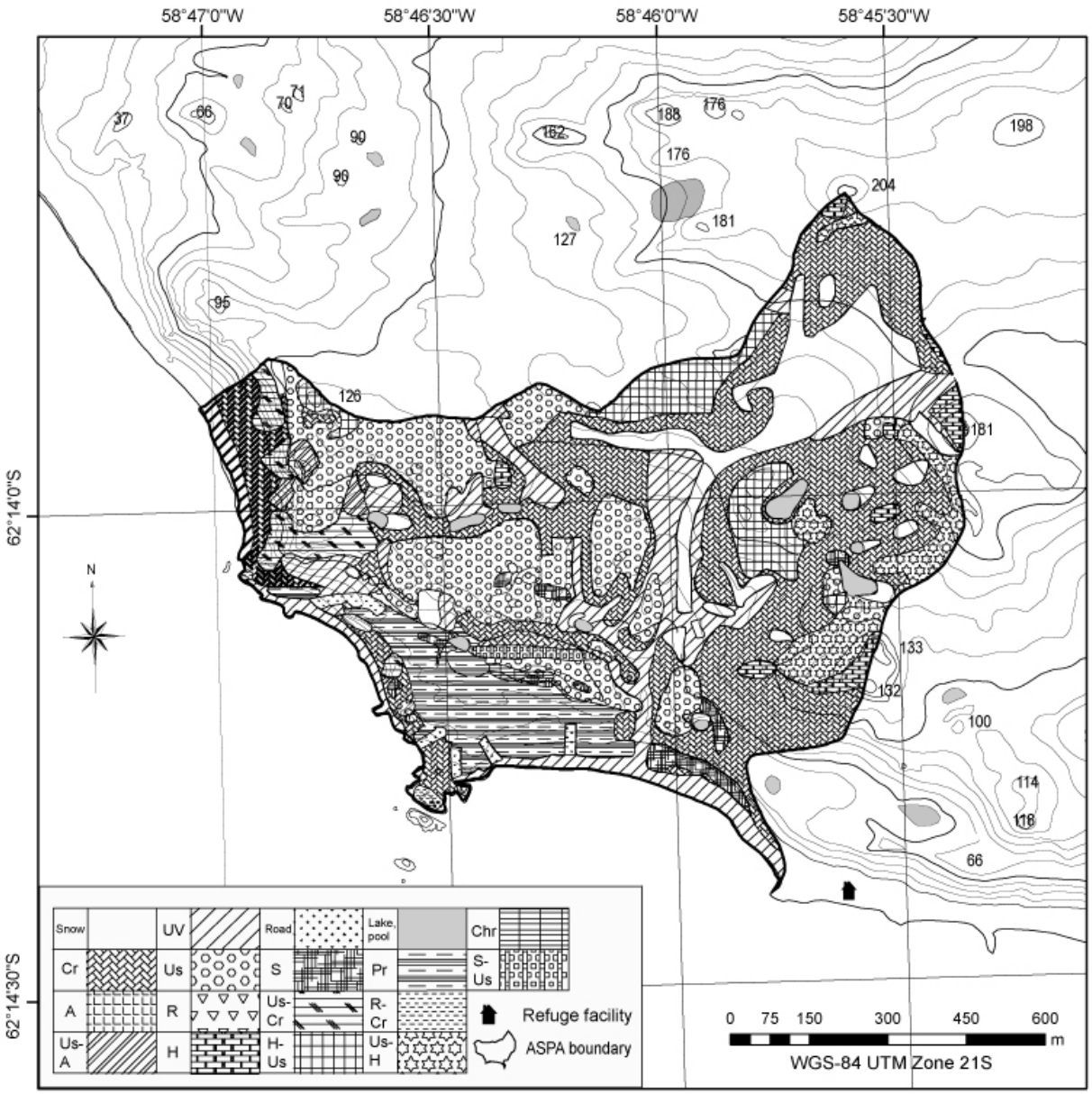


	Latitude	Longitude		Latitude	Longitude
1	62°13′53.69″S	58°47′01.31″W	9	62°14′00.86″S	58°45′20.85″W
2	62°13′50.48″S	58°46′52.37″W	10	62°14′06.96″S	58°45′30.62″W
3	62°13′52.85″S	58°46′45.84″W	11	62°14′09.73″S	58°45′33.08″W
4	62°13′52.53″S	58°46′16.62″W	12	62°14′15.30″S	58°45′38.87″W
5	62°13′54.18″S	58°46′09.53″W	13	62°14′16.43″S	58°45′50.37″W
6	62°13′51.11″S	58°45′50.64″W	14	62°14′24.55″S	58°45′48.00″W
7	62°13′40.97″S	58°45′35.60″W	NP	62°14′18.17″S	58°46′32.99″W
8	62°13′55.95″S	58°45′20.71″W			

Map 2. Boundary of the ASPA



Map 3. Distribution of bird colonies and seal haul-out sites within the ASPA



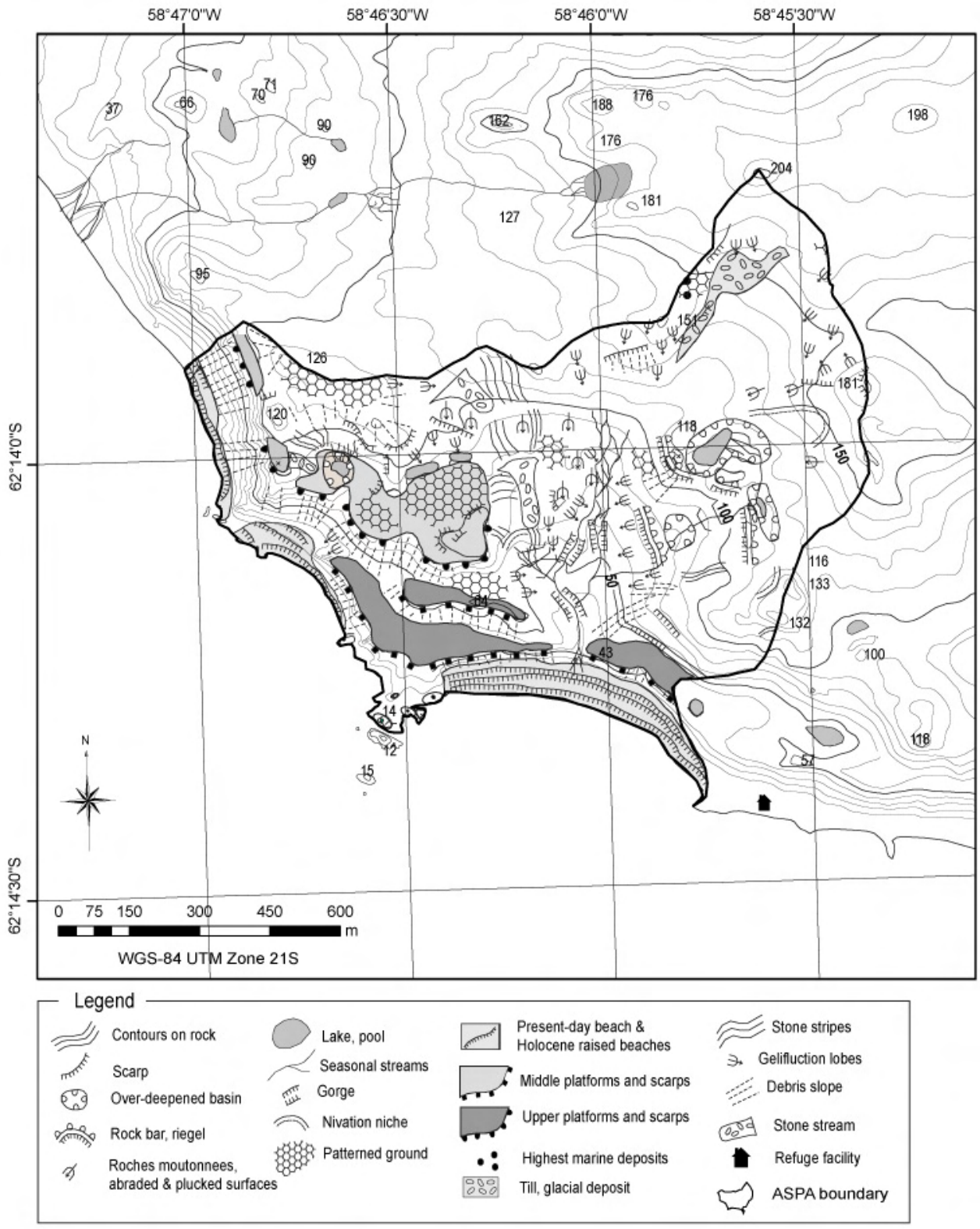
Community abbreviations

UV: unvegetated area
Cr: Crustose lichens
S: *Sanionia* spp., Pr: *Prasiola*
Chr: *Chorisodontium aciphyllum*
A*: Andreaea*, Us: *Usnea* spp.
R: *Ramalina terebrata*
Us-Cr: *Usnea*-Crustose lichens
R-Cr: *Ramalina*-Crustose lichens
S-Us*: Sanionia-Usnea* spp.
Us-A: *Usnea-Andreaea*
H: *Himantormia lugubris*
H-Us: *Himantormia-Usnea*
Us-H: *Usnea-Himantormia*

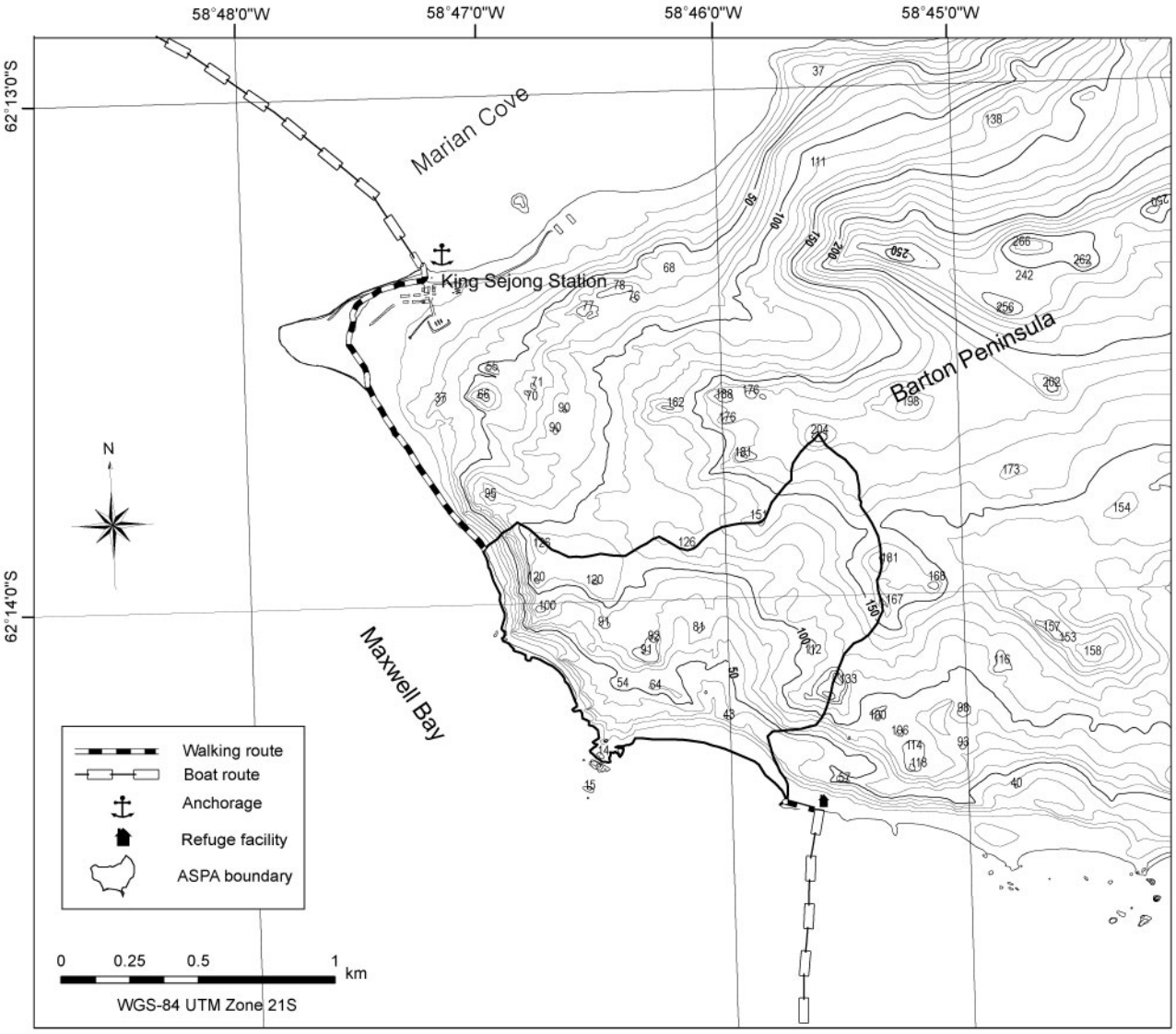
Total coverage of each community (%)

Cr: 75.2	S: 99.9 Pr: 86.8
Chr: 100	A: 93.8 Us: 95.4
R: 100	Us-Cr: 93.1
R-Cr: 100	S-Us: 98.2
Us-A: 98	H: 100
H-Us: 99.6	Us-H: 98.8

Map 4. Distribution of plant communities in the ASPA



Map 5. Geomorphologic details of the ASPA



Map 6. Access routes to the ASPA

PART III

Opening and Closing Addresses and Reports from ATCM XXXII

1. Opening Addresses

Remarks by the Secretary of State Hillary Rodham Clinton
At The Joint Session of the Antarctic Treaty Consultative Meeting
And the Arctic Council, 50th Anniversary of the Antarctic Treaty

SECRETARY CLINTON: Thank you very much, Reno, and let me welcome all of you here for this very important event. It's a real pleasure for me to have the honor of serving as Secretary of State as we celebrate really four interlocking events that bring us all to this place today. I want to certainly welcome all of the ministers who are here and also Prince Albert – we greatly appreciate his work – the many representatives of organizations that have been deeply concerned about the Antarctic and the Arctic.

But let me relate the four important events that I think we are marking today: first, the conclusion of the International Polar Year, a coordinated effort in planetary research among scientists from more than 60 nations; second, the start of the Annual Antarctic Treaty Consultative Meeting, which the United States is proud to host for the first time in 30 years; third, the first ever Joint Session of the Antarctic Treaty Consultative Meeting and the Arctic Council; and finally, the 50th anniversary of the treaty itself, which stands as an example of how agreements created for one age can serve the world in another, and how when nations work together at their best the benefits are felt not only by their own people but by all people and by succeeding generations.

In 1959, representatives from 12 countries came together in Washington to sign the Antarctic Treaty, which is sometimes referred to as the first arms control agreement of the Cold War. Today, 47 nations have signed it. And as a result, Antarctica is one of the few places on earth where there has never been war. Other than occasional arguments among scientists and those stationed there over weighty matters having to do with sports, entertainment, and science, there has been very little conflict.

It is a land where science is the universal language and the highest priority and where people from different regions, races, and religions live and work together in one of the planet's most remote, beautiful, and dangerous places.

The genius of the Antarctic Treaty lies in its relevance today. It was written to meet the challenges of an earlier time, but it and its related instruments remain a key tool in our efforts to address an urgent threat of this time, climate change, which has already destabilized communities on every continent, endangered plant and animal species, and jeopardized critical food and water sources.

Climate change is shaping the future of our planets and – our planet in ways we are still striving to understand. But the research made possible within the framework of the Antarctic Treaty has shown us that catastrophic consequences await if we don't take action soon. The framers of the treaty may not have foreseen exactly the shape of climate change, but their agreement allowed scientists to model its effects, including glaciologists studying the dynamics of ice, biologists exploring the effects of harsh temperatures on living organisms, geophysicists like those who discovered the hole in the ozone layer above Antarctica that prompted the ban embodied in the 1987 Montreal Protocol. Today, the hole above the Antarctica is starting to close, thanks to the world's response to this discovery.

So the treaty is a blueprint for the kind of international cooperation that will be needed more and more to address the challenges of the 21st century, and it is an example of smart power at its best. Governments coming together around a common interest and citizens, scientists, and institutions from different countries joined in scientific collaboration to advance peace and understanding. I know there are scientists here today who have conducted research in Antarctica, and I thank you for your commitment and your courage. The United States military has something called the Antarctica Service Award, which it issues to any Americans, military or civilian, who have been members of expeditions to the Antarctica, have served in its waters, or worked in the stations there. And there's a special bar called the Wintered Over bar that goes to those people who stay for a full year. That gives an indication of how tough it can be down there and how determined you have to be to see your work through.

But it is important for humanity's understanding of our planet and our ability to anticipate and mitigate the changes caused by global warming. And with the collapse of an ice bridge that holds in place the Wilkins Ice Shelf, we are reminded that global warming has already had enormous effects on our planet, and we have no time to lose in tackling this crisis. I'm very pleased that the Obama Administration has made it clear that we are committed to working with you and leading in our efforts, advancing toward Copenhagen to take united action on behalf of our response to global climate change.

We need to increase our attention not only to the Antarctic but to the Arctic as well. As a senator, I traveled to the Arctic region, both in Norway and Alaska. I saw for myself the challenging issues that the region is facing today, especially those caused by climate change. This too provides an opportunity for nations to come together in the 21st century, as we did 50 years ago in the 20th century. We should be looking to strengthen peace and security, and support sustainable economic development, and protect the environment.

The warming of the Arctic has profound implications for global commerce, with the opening of new shipping routes. It raises the possibility of new energy exploration, which will, of course, have additional impacts on our environment. And Arctic warming has already serious consequences for the indigenous communities that have made their homes there for many generations.

The changes underway in the Arctic will have long-term impacts on our economic future, our energy future, and indeed, again, the future of our planet. So it is crucial that we work together. Here in Washington, the State Department coordinates Arctic policy for the United States, and I am committed to maintaining a high level of engagement with our partners on this. That starts with the Law of the Sea Convention, which President Obama and I are committed to ratifying, to give the United States and our partners the clarity we need to work together smoothly and effectively in the Arctic region. There are also steps we must take to protect the environment. For example, we know that short-lived carbon forcers like methane, black carbon, and tropospheric ozone contributes significantly to the warming of the Arctic. And because they are short lived, they also give us an opportunity to make rapid progress if we work to limit them.

In advance of the Arctic Council meeting in Norway later this month, I have asked my team here at the State Department to come up with new initiatives that the United States will put forth to be a full, active partner in these efforts.

We also must push forward with research. There is still a lot more to learn about the polar regions. We are encouraged by discoveries made during the International Polar Year. Look at what's been accomplished: scientists produced detailed maps of the last unexplored mountain range on earth, sent robot submarines under the Antarctic Ice Shelf to map the sea beds, drilled deep beneath the sea floor to learn more about the effects of carbon dioxide on the West Antarctic Ice Sheet, and shed light on how climate change affects the microscopic life at the base of our ecosystem.

Together, these discoveries will advance our understanding and hopefully inspire us to work more closely together to limit the impacts on our lives.

Now, these projects and many more were the result of partnerships among nations represented here. Exploring our planet, protecting its future, is too large a task for any one country to undertake. And of course, no country owns the market on good ideas. Breakthroughs can and should come from anywhere and everywhere, especially when genuine collaboration and teamwork are involved. Organizations and events like this that bring people together from across disciplines and regions are crucial. That is the model of the Antarctic Treaty, and it is reflected in events like the International Polar year and in groups like the Arctic Council.

The United States stands in strong support of both the Antarctic Treaty and its purpose: to maintain the Antarctica as a place of peace and to use the science that can only be performed there to benefit the entire planet.

I am pleased to announce that on Friday, President Obama sent to the United States Senate the Annex to the Protocol on Environmental Protection to the Antarctic Treaty that deals with liability arising

from environmental emergencies. The President has urged the Senate to give the Annex its consent so the United States can ratify it and we can take a major step forward in enhancing environmental protection in the Antarctica by clearly laying out how countries must prevent emergencies and respond to them if they do occur. The Annex will only take effect once all the countries in the Antarctic Treaty approve it, so I urge all of us to move as quickly as we can to fill this gap in our care for the Antarctica.

The United States has also submitted a proposal to the Consultative Parties of the Antarctic Treaty to extend marine pollution rules in a manner that more accurately reflects the boundaries of the Antarctic ecosystem. Strengthening environmental regulation is especially important as tourism to the Antarctica increases. The United States is concerned about the safety of the tourists and the suitability of the ships that make the journey south. We have submitted a resolution that would place limits on landings from ships carrying large numbers of tourists. We have also proposed new requirements for lifeboats on tourist ships to make sure they can keep passengers alive until rescue comes. And we urge greater international cooperation to prevent discharges from these ships that will further degrade the environment around the Antarctica.

For the Antarctic Treaty parties, I hope your time here over the next two weeks will be fruitful as you discuss these and other issues related to our polar regions. And as the world prepares for the UN Climate Talks this December in Copenhagen, meetings like this are more important than ever.

The Antarctic Treaty is a product of far-sighted, visionary leaders from all walks of life, from government, from academia and science, from the private sector, and others who cared deeply about the future of this great continent to our south. But it serves as a model. It is a living example of how we can form a vital partnership to meet the challenges of this time. So in the spirit of the treaty and in light of the incredible discoveries that took place during the International Polar Year, let us resolve to keep making progress with sharp research and bold action on both ends of our planet, in the south and the north, for the good of our nations and for the people, but mostly for this beautiful planet we currently share and the succeeding generations that should have the same opportunity to enjoy its bounty and its beauty.

Thank you very much.

Remarks by Jonas Gahr Støre, Minister of Foreign Affairs of Norway

Secretary of State,

Excellencies,

Ladies and gentlemen,

As chair of the Arctic Council, I am deeply honoured to speak to you on this important occasion. Thank you, Madam Secretary, for hosting this event and for inviting me to speak on behalf of Norway – a country with both an Arctic and an Antarctic identity.

Fifteen years ago, some 90 years after Roald Amundsen as the first man in history reached the South Pole, in 1911, the Norwegian explorer Liv Arnesen became the first woman to reach the South Pole on skis alone and unassisted. It took her 50 days to cover the 1 200 kilometres. At the South Pole on Christmas Eve in 1994 she wrote in her diary: "Most goals can be achieved as long as the motivation is real and sincere enough."

Goals, motivation and will. Real and sincere. A guide for us all as we learn the dramatic truth about climate change that is unfolding right now at both poles. It is a clarion call for concerted action.

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The polar regions are the world's largest wilderness areas. Their environmental value is immeasurable. Their natural riches are immense.

So too are the challenges they are facing. The Antarctic and the Arctic are far away from industrialised areas, but are nonetheless threatened by our modern society – by us.

A hundred years ago, large parts of the Antarctic and the Arctic had not even been discovered. They are still among the areas of the world we know least about.

But we know one thing. Knowledge is paramount. Today we know that some of the fastest and largest climate changes are taking place in the polar regions, and that our ability to understand the deeper meaning and implications of this knowledge may determine whether humanity will be able to cope with the challenges of global warming.

[Illustration: In August 2004 Senator Hillary Clinton visited Svalbard.]

Seeing is believing. I am sure, Madam Secretary, that you remember how these climate changes were already clearly visible during your visit to Svalbard, in Norway's High North, a few years ago.

There are five points I would like to make on this occasion. The first is that the ice is melting.

[Illustration: Melting ice. Kongsfjorden in Svalbard, 1928 vs. 2008.]

Two photos. Taken 80 years apart. Nothing is the same. We should all be worried. In the past few decades, the annual mean temperature in the Arctic has been rising at almost twice the rate as in the rest of the world. We have witnessed the spectacular retreat and collapse of ice shelves.

These dramatic changes are having global effects. Ice melting in the polar areas will have implications in the form of rising sea levels and accelerating global warming.

Other parts of the world may be much more severely affected by climate change. The effects are far more dramatic for the people of Central Africa, who are witnessing the drying up of Lake Chad.

However, the polar areas are the key to understanding what climate change we can expect in the rest of the world.

But the polar thaw is also political. The freeze of the Cold War has been replaced by international cooperation both in the Antarctic and in the Arctic. This is very encouraging. Cooperation is absolutely essential.

And this is why we are here. For decades we have been able to cooperate.

Which leads me to my second point: the international legal order in the polar regions.

[Illustration: Maps: Arctic vs. Antarctic.]

The Arctic and the Antarctic both have a polar climate, but they are fundamentally different. As you know, the name Antarctica means the opposite of the Arctic. While the Arctic is an ocean surrounded by land masses, the Antarctic is a land mass surrounded by oceans. Antarctica has no permanent population except researchers. In the Arctic people have lived and prospered for thousands of years.

The five countries surrounding the Arctic Ocean – the United States, Canada, Russia, Denmark/Greenland and my own country, Norway – have internationally recognised sovereignty over land and, as a consequence, jurisdiction over maritime zones.

In the Antarctic, the situation as regards claims to sovereignty and jurisdiction was frozen in the Antarctic Treaty. So this is a very different situation.

The Antarctic Treaty is therefore an agreement to disagree. By looking beyond the disagreement on jurisdiction, it enabled a well functioning legal order that deals with the challenges at hand. Thus, peace, stability, environmental protection and international scientific collaboration have been maintained in Antarctica. This is a remarkable achievement.

As in Antarctica, the legal framework in the Arctic is already in place. The Arctic Ocean is not governed by a special regime, or by a specific treaty. This does not leave the Arctic in a legal vacuum. On the contrary. The Arctic fully benefits from the principles and regulations enshrined in the United Nations Convention on the Law of the Sea, in addition to various environmental and fisheries agreements, IMO rules and other general regulations. More than 150 states are parties to the 1982 Law of the Sea Convention. It reflects international customary law on a large number of key issues.

The five coastal states bordering the central Arctic Ocean have repeatedly and recently reaffirmed that the Law of the Sea provides a solid foundation for continued development of the international governance framework for the region.

So the challenges in this region have more to do with a lack of implementation of existing rules than with an actual lack of rules. In other words: there is no lack of rules, there is a lack of policies.

I see no need for a new, comprehensive international legal regime governing the Arctic Ocean. But I see a real need for governments to come together to develop policies and rules to manage growing human activity. A real challenge, but this is why we have governments and diplomacy – to deal responsibly with challenges.

As a result of warmer waters in the polar regions, new sea routes are emerging.

We see new potential for exploiting energy resources and increased human activity in a fragile polar environment. We observe this in the Arctic. Sailing time from Rotterdam to Yokohama could be shortened by 40% if ships were able to sail east through the Northwest Passage or the Northeast Passage – or even to one day if they could sail straight across the Polar Basin.

If we put all of these elements together and add relations between Russia and its Arctic neighbours, we may have a recipe for increased levels of conflict.

But it does not have to be that way. And it should not be. We have the legal instruments to avoid conflict, we have regional and circumpolar institutions, and we have an opportunity to develop new policies to meet new challenges together.

Cooperation in the Arctic is of more recent date than in Antarctica. However, the Arctic Council, currently chaired by Norway, is playing an increasingly significant role. It is the world's only truly circumpolar organisation. In addition to the governments of the United States, Canada, Russia and the five Nordic countries, permanent participants representing indigenous peoples take part – as well as a number of observer states.

The Arctic Council has an untapped potential for cooperation and policy shaping – to prevent conflict in dealing with increased transport, the search for energy and the environmental effects of increased human activity. These issues are being given top priority during the Norwegian chairmanship, as also reflected in the Norwegian Government's High North Strategy.

My third point concerns knowledge and science.

[Illustration: Troll research station, Antarctica.]

A common characteristic of both polar regions is the importance of international scientific collaboration. Ever since the first International Polar Year, in 1882–83, cooperation between scientists from many nations has been a defining feature of activity in these regions.

While the International Arctic Science Committee and the Scientific Committee on Antarctic Research are the long-term platforms for international scientific cooperation, the fourth International Polar Year has provided an impetus for bipolar science. The tasks at hand are larger and more complex than any nation can undertake alone. The Arctic Council and the Antarctic Treaty cooperation are the critical forums in this regard.

In the Arctic Council we have agreed to initiate an Arctic Legacy Project. It will strengthen international scientific cooperation in the long term and ensure that the world community can capitalise on the investments made during the International Polar Year.

At this Antarctic Treaty Consultative Meeting, Norway will propose a similar project in this context, and I would also suggest that the Arctic Council and the Consultative Meeting establish close cooperation on these projects. Specifically, the aim of the Arctic Legacy Project is to enhance scientists' access to polar areas and strengthen efforts to recruit young researchers to polar science.

[Illustration: Roald Amundsen 1911 vs. Liv Arnesen 1994.]

Norway has a long tradition of polar exploration and science. As I mentioned, in 1911 Roald Amundsen was the first to set foot on the South Pole. Explorers like Liv Arnesen and many others have followed in his footsteps – or tracks. Since the days of the pioneers, Norway has taken active part in polar research in both the Arctic and the Antarctic.

[Illustration: Troll research station, Antarctica.]

Our research station Troll in Dronning Maud Land, Antarctica, was opened as an all-year station in 2005. Earlier this year the Norwegian Minister of the Environment hosted 15 high-level climate officials, including eight of his colleagues, at the research station for discussions on climate change.

Again, as is often the case, you find that seeing is believing.

At 79 degrees north, in Ny-Ålesund, Svalbard, ten countries have established permanent research facilities. The Norwegian Government has made considerable efforts to provide a unique infrastructure for international research and easy access to the Arctic.

Knowledge is key. My fourth point concerns the environment.

[Illustration: Polar bear struggling on thin ice.]

The polar regions have always been remote and difficult to access. This is now about to change, particularly in the Arctic.

The Arctic sea ice has been reduced dramatically during the last few decades. This will have devastating consequences for polar bears – and also for ice-dependent seals. The only long-term solution to protect the polar regions is to reduce global emissions of greenhouse gases to a sustainable level. Ice melting in the polar areas will have worldwide effects.

Which brings me to Copenhagen. We need a global climate agreement to cope with these challenges. We need a successful outcome of the COP-15 meeting on climate change in Copenhagen in December. These issues are now quite rightly being put on agendas worldwide.

Climate change is a vital area of cooperation in the Arctic Council, particularly following the groundbreaking 2004 Arctic Climate Impact Assessment. The next Arctic Council ministerial meeting will take place in Tromsø in Norway on 29 April. The day before, former Vice President Al Gore and I will co-chair a special ministerial meeting on global ice melting. Our purpose is to issue yet another call for concerted action in the run-up to Copenhagen.

The ice is melting not only in the polar regions, but also in most other ice-covered areas of the world, and affecting ecosystems. This is also about the Himalayas, the Andes and even Kilimanjaro. Take the billions who depend on stable access to water from the Himalayas. Now they may be heading for decades of flooding and then an eternity of drought.

We also need to place climate change higher on the agenda of the Antarctic Treaty cooperation. The parties should consider the status and impacts of climate change in Antarctica, the consequences for Antarctic governance and how to communicate new knowledge to the world. I would propose that the Antarctic Treaty Consultative Meeting decide to convene a Meeting of Experts on climate change before the next Consultative Meeting in 2010.

My fifth and final point concerns maritime transport.

Polar climate change is also posing challenges that have to be handled regionally. A milder climate and reduced sea ice will increase access by sea to these regions for tourists and for commercial activities such as shipping, fisheries and the offshore petroleum industry. However, if the demand for energy resources in the High North increases, we must focus on keeping tension low.

[Illustration: Map, maritime transport, the Northwest Passage, Northern Route.]

Remember that modern polar exploration started over 400 years ago with the search for a new trade route from Europe to China. Now this may become a reality. The first significant change in economic activity in the Arctic is likely to be in the area of commercial maritime transport.

There may be different views about how much time and money could be saved by opening up for commercial transport through the Northwest Passage and the Northern Route – as shown here on the maps. But there is general agreement that we must have the necessary infrastructure in place to deal with this, not least with regard to monitoring, surveillance and search and rescue.

The Arctic Council’s role is decision-shaping rather than decision-making. As outgoing chair, I clearly see the need for the Arctic Council to play a more active role as a provider of guidelines, best practices and knowledge to other international forums. We must develop search and rescue services for both the Antarctic and the Arctic Oceans. And we should put Arctic and Antarctic shipping higher on the agenda of the International Maritime Organization.

Moreover, we should share experience and best practices on integrated ocean management, adopt and implement Arctic offshore oil and gas guidelines, and consider arrangements for regional fisheries management.

[Illustration: Photo of passengers rescued from the cruise liner “Ocean Nova” in Antarctica, which ran aground on 17 February 2009.]

In Antarctica too, new challenges are arising due to the rapid increase in tourism – as shown here when the cruise liner “Ocean Nova” ran aground two months ago.

Visits to Antarctica must be welcomed as a good way of learning about a fantastic region. However, it is the duty of all parties to set standards that adequately protect the Antarctic environment and ensure that all activities are conducted as safely as possible. And they must not disturb local scientific activities.

I therefore fully support the concept of a Strategic Vision for Antarctic Tourism proposed by the United Kingdom at our meeting. The vision will be used to inform and guide further work to underpin the development of a comprehensive and robust framework to manage Antarctic tourism activities. The adoption of a new protocol on Antarctic tourism could be a new goal of the Antarctic Treaty cooperation.

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[Illustration: Ann Bancroft and Liv Arnesen crossing Antarctica.]

Madam Secretary,
Ladies and gentlemen,

To sum up, the issues we are dealing with in the polar regions are closely related to a number of global issues that need to be addressed. Climate change is the most demanding challenge – it is the ultimate political challenge of our generation. Addressing it will require massive efforts and strong political will. However, such political will should be regarded as a renewable resource. The more we mobilise and use it, the more political will we will generate. Both the Antarctic Treaty cooperation and the Arctic Council are in need of this will.

When the explorer Fridtjof Nansen set out to cross the then uncharted Greenland ice sheet in 1888, he started from the unpopulated, hostile east coast. He burned his boats, leaving only one way to go – forward. Determined to reach his goal, he made sure that retreat was no alternative.

I am not asking you to burn your boats, bridges or other means of retreat. But let all of us bring together our political will, and move forward together and do what is necessary to meet the challenges and preserve the polar regions for present and future generations.

Thank you.

Remarks by the Chair of the Antarctic Treaty Consultative Meeting, R. Tucker Scully

Antarctica - fifty years ago – became the scene of an innovative and ongoing political experiment, an experiment every bit as intriguing and important as the scientific research taking place there.

This experiment - in international cooperation – is represented by the negotiation and evolution of the Antarctic Treaty and the system of related agreements and measures it has spawned.

The Treaty was an effort to address the two defining characteristics of Antarctica in the mid-twentieth century:

- first, the very real potential for international conflict over Antarctica, most particularly over territorial sovereignty there, but also as a result of the tensions and rivalries generated by the cold war; and
- second, the unique opportunities that Antarctica offered for scientific research of global importance.

The catalyst for taking on these issues – for launching the experiment – came from the major program of scientific research in Antarctica within the International Geophysical Year of 1957-58.

The IGY encompassed the third International Polar Year. It is noteworthy that we are celebrating the Fourth International Polar Year -IPY - here in tandem with the 50th anniversary of the Treaty.

The IGY planners persuaded their governments to set aside their differences over territorial sovereignty to permit the cooperative scientific programs to go forward.

These informal arrangements were so successful – and the research carried out during the IGY so productive – that the scientists lobbied the politicians to establish them on a continuing and legally binding basis.

The rest as they say is history. The United States took the initiative to bring together the IGY nations. Negotiations initiated in mid-1958 bore fruit with the signing of the Antarctic Treaty on 1 December 1959.

It should be noted that this afternoon's celebration of the IPY will take place at National Academy of Sciences Building across the street which was the location of many of the informal negotiating sessions that led to the conclusion of the Antarctic Treaty.

The Treaty is a remarkably concise document and it is worth recalling its basic provisions which center upon scientific research and cooperation and reserving Antarctica exclusively for peaceful purposes.

The Treaty:

- prohibits all military activities, nuclear explosions and disposal of radioactive waste in Antarctica, as well as testing of weapons there;
- guarantees freedom of scientific investigation as practiced during the IGY; and
- provides for a system of on-site inspection of all stations and installations in Antarctica to ensure observance of the provisions of the Treaty.

The Treaty applies imaginative governance provisions to the process of achieving and building upon its obligations.

It sets forth in Article IV a juridical accommodation on the basic differences over territorial sovereignty in Antarctica. Article IV is often described as freezing the respective positions on claims to territorial sovereignty. In the sense of preserving a balance among positions that is certainly true.

Equally important is that the Treaty allows the parties to agree on how activities actually take place in Antarctica.

It permits all Consultative Parties to apply common sets of obligations to those activities with which the Treaty deals and in a manner that each side – claimant and non-claimant alike – can view as consistent with its basic legal position.

In addition, the Treaty:

provides for regular consultative meetings of which this is the 32nd – to elaborate Measures in furtherance of the Treaty;

- links the right of decision-making in Consultative Meetings to activities in Antarctica - to the conduct of substantial scientific research there, and;
- provides for development of cooperative working relationships with those international organizations having a scientific or technical interest in Antarctica.

Substantive decisions at Consultative Meetings are taken pursuant to consensus – no-objection - rules. The Antarctic Treaty's consensus-based decision-making system adds an important political buttress to the juridical accommodation on the issue of who's in charge there. Each Party is provided the assurance that it cannot be outvoted on decisions that could affect the issues of sovereignty covered in Article IV, as well as other matters of important political concern.

The criterion linking the right to take decisions to scientific activities establishes an important stimulus for cooperation in Antarctica by linking decisions on activities in Antarctica to those actually carrying them out.

This in turn creates an incentive to base decisions on common and shared experience of Antarctica and provides a deterrent to politicizing issues.

These process provisions have been essential ingredients in the practical and enduring achievement of the objectives that lie at the heart of the Treaty.

Antarctica has been and remains an effective zone of peace, free from conflict, and the scene of cutting-edge scientific research.

The Treaty also constitutes an important disarmament agreement. It was the first such agreement binding both the United States and the Soviet Union. Its unqualified rights of on-site inspection established a precedent for subsequent nuclear disarmament accords.

These achievements are among the most important results of fifty years of operation of the Treaty and make it one of the most successful examples of conflict prevention and political cooperation in modern history.

Moreover, the freedom from conflict in Antarctica and the growth in scientific understanding of the continent and surrounding waters fostered by the Treaty have been preconditions for the effort to protect the environment of area and to conserve its resources.

This effort has resulted in the network of measures and agreements that is part of what is now known as the Antarctic Treaty system.

These include CCAMLR – the Convention on the Conservation of Antarctic Marine Living Resources – a pioneering, ecosystem-based resource management agreement and the Protocol on Environmental Protection to the Antarctic Treaty that bans mineral resource development in Antarctica and establishes a framework for environmental protection there.

Both agreements – like their parent – incorporate landmark substantive provisions and are the source of important precedents in other international endeavors.

The Treaty is an international agreement that works and it has done so during five decades of rapid and significant change – not only in the international landscape but also in the numbers and interests of those participating in the Treaty itself.

Its innovative conflict resolution and disarmament provisions and its guarantees of freedom of scientific research remain relevant and vital today.

In other words, the Antarctic Treaty that we celebrate represents an enormously successful and productive experiment – one that continues today and that, with the cooperation of those in this room today will continue in the future.

2. Statements at the Joint Antarctic Treaty Consultative Meeting - Arctic Council Session, 6 April 2009

Speech by Jorge Taiana, Minister of Foreign Affairs of the Republic of Argentina

Chairman, Secretary of State, Colleagues:

I would like to start by thanking the United States for hosting, as it did 50 years ago, this very important meeting for the Antarctic Treaty.

It is an We are marking two important milestones: the end of the International Polar Year, 2007-2008, and the 50th anniversary of the signing of the Antarctic Treaty.

These two events are closely linked. We need only recall the significance of the International Geophysical Year, celebrated in 1957-1958, that served as a precedent for the Antarctic Treaty, and the spirit of peace and international cooperation that it represented. This same spirit was felt in the origins and entry into force of the Antarctic Treaty, as well as in the later drafting of the instruments comprising its System. This is also what is behind the Treaty's enduring relevance, half a century after its signing. And this same spirit has guided the work of the International Polar Year that is now drawing to a close.

The Arctic and Antarctic play a primordial role in many issues that are of crucial importance to humanity, such as global warming, climate change and rising sea levels. It is at the poles, more than anywhere else in the world, that we can best observe the huge environmental impact that climate change is having.

For instance, the ice sheets of Greenland and Antarctica are the greatest reserves of fresh water on the planet. If the former were to melt away entirely, the planet's sea levels could rise by seven meters. If this were to occur with the latter, sea levels would rise by another 60 meters. If the current trend detected by our scientists continues, the melting of the polar ice caps will play a central role over the course of the 21st century, with sea levels estimated to rise by up to 1.1 meters by 2100. The melting of the polar ice caps would not only cause sea levels to rise, flooding vast coastal areas across the planet, but would also alter the salinity of the world's oceans, weakening the existing system of ocean currents. This would not only have a devastating effect on marine ecosystems and all those who depend on them, but would also aggravate the effects of climate change in all regions of the world.

In particular, the evolution of the Antarctic climate over the next 100 years represents a major scientific challenge that can only be resolved using interconnecting models of the atmosphere, the oceans and the ice sheets. However, these models must be validated and controlled using real data and instrumental observations obtained in a continuing and controlled manner at the scientific bases in the Antarctic, and carefully analysed by scientists specialised in these subjects.

The challenge that this situation represents requires us to strengthen polar scientific cooperation. The conducting of scientific research at the poles is a complex, risky and costly challenge. As a result, projects of this scope are undoubtedly best undertaken through international cooperation. This allows us not only to pool our efforts and optimise the use of resources and projects, but also to share in the benefits of the results.

This is why I welcome this joint meeting of the Consultative Parties of the Antarctic Treaty and the Arctic Council. It is true that the two poles are not identical, but they do have a lot in common and much can be learned by comparing the two.

The Antarctic Treaty's peaceful intent, backed by its international cooperation in scientific research, has been cited as an example of how states can put aside their differences and work together toward shared objectives, such as the protection of a continent that must be preserved for the sake of humanity.

There is no better way to protect the Antarctic, the Arctic and the entire planet than through teamwork and solidarity involving all those who express their commitment and interest, in a peaceful and cooperative manner.

Argentina holds the honour of having the oldest scientific base in the Antarctic: the Orcadas base, which has been in uninterrupted operation for over 105 years now. Founded in 1904, for decades it was the only permanent base on Antarctic territory. Since the beginning, it has been a source of meteorological data, which form the basis for much of the research currently being carried out on climate change and global warming.

The Argentinian Antarctic Institute, established on April 17th, 1951, was the first body in the world dedicated exclusively to Antarctic research. Since then, it has been conducting scientific research in Antarctica using its own specialised staff and in cooperation with leading national and international scientific and academic institutions, while consistently pursuing the goals of furthering knowledge about and protecting the Antarctic and its resources for the benefit of all mankind.

I have highlighted these two facts in order to illustrate Argentina's firm commitment to the protection of the Antarctic, something which it promotes through the pursuit of scientific study and knowledge, with the conviction that the best way to protect this continent is to learn more about it and disseminate this knowledge about the special conditions and characteristics that make it so unique.

My country is committed to continuing down this path, strengthening the base of scientific knowledge and engaging in an ever-closer cooperation with other countries. This is the best way to save our planet.

What has been achieved thus far by the Consultative Parties is a faithful reflection of the vast importance that the Antarctic Treaty has had for the region in the first 50 years of its existence. The achievements of the International Polar Year, the end of which is being marked by this meeting, represent the best possible starting point for taking the Antarctic Treaty to the next level, for redoubling our efforts and strengthening scientific cooperation so as to face the challenges awaiting us over the next 50 years. They will undoubtedly require our attention and steadfast commitment.

Thank you.

Annex:

Projects carried out by Argentina during the International Polar Year:

- State of the ice shelves and marine ice.
- Over 100 years of climate studies.
- Marine biodiversity studies.
- Projects examining the use of Antarctic bacteria for the bioremediation of soil following hydrocarbon spills.
- Monitoring of bird and mammal life for over 40 years.
- Ozone studies.
- Emissions of methane hydrate (major greenhouse gas).
- Ichthyological studies.
- Projects in geophysics, seismology and volcanology.
- Development of bacterial genomes.
- Education and culture.

At the start of the International Polar Year, Argentina’s various activities involved 125 scientists; by the end, 230 scientists were working on Argentinian projects.

We have worked in close collaboration with Germany, Australia, Brazil, Canada, Spain, the United States, the Russian Federation, Italy, Japan and the Netherlands.

Statement by the Minister for the Environment, Heritage and the Arts of Australia, the Hon Peter Garrett AM MP

I would like to express my deep appreciation to Secretary of State Clinton and our US hosts, for convening this historic event, marking the conclusion of the International Polar Year and the 50th anniversary of the signing of the Antarctic Treaty. This is a significant occasion. The stakes are so high and we must work together collaboratively on climate science.

Australia was a strong supporter of the International Polar Year, and provided leadership on a number of key international projects, including our participation in a large number of projects. We were involved in leading 11 International Polar Year projects.

The International Polar Year endeavour, which we are marking today, was a concrete example of the spirit of cooperation, which is enshrined as a core principle of the Antarctic Treaty.

Australia, as an original signatory to the Antarctic Treaty, has long been committed to the principles of this important agreement – the preservation and conservation of living resources is critical. We acknowledge the original signatories of the Treaty and the countries which have subsequently joined the Treaty.

Australia was honoured to host the first Antarctic Treaty Consultative Meeting in Canberra in 1961. Australia's polar science looks south – we focus our efforts on Antarctica and the southern ocean. That is why I am pleased today to announce that Australia is willing to host the thirty-fifth Antarctic Treaty Consultative Meeting in 2012.

The first Antarctic Treaty Consultative Meeting, attended by the 12 signatories, adopted 16 recommendations, on cooperation in scientific research, exchange of information, communications, emergency assistance, preservation of historic sites, and protecting fauna and flora. Each and every one of these themes is still important today. I know that the representatives of the Parties, in their work at the 32nd Antarctic Treaty Consultative Meeting over the next two weeks in Baltimore, will be similarly effective.

We look forward to welcoming delegates to Australia in three years time to further cement our close cooperative relations and reinforce the long history of governing Antarctica as an area of peace and science.

I endorse the remarks by the Secretary of State and the Norwegian Foreign Minister. A protocol on tourism is clearly a threshold issue for us to consider further and we will need to strengthen environmental protection.

We need goodwill and cooperation as we are all in this together.

Address by Oleg Kravchenko, Head of the Belarus Delegation, Belarus Charge d'Affaires in the USA

Mr. Chairman,

I would like to thank the USA Host Government for its excellent organization of the Meeting. Let me also congratulate you on your election as Chairman of the Meeting and wish you success.

Belarus is confident that now, 50 years after the signature of the Antarctic Treaty, its overarching goal remains quite relevant: Antarctica shall continue for ever to be used exclusively for peaceful purposes and shall not become the scene or object of international discord. It is in the interests of all humankind. We also give priority to another provision of the Treaty whereby by the Parties undertake to ensure that freedom of scientific investigation in Antarctica shall continue and that research data shall be exchanged and made freely available.

The Republic of Belarus acceded to the Antarctic Treaty in 2006 and to the Protocol on Environmental Protection to the Antarctic Treaty in 2008.

Belarus is implementing the National Targeted Program on Monitoring of the Earth's Polar Regions and Support of Arctic and Antarctic Expeditions: 2007-2010 and until 2015. The Ministry of Natural Resources and Environmental Protection has established a working body, State Institution – Republican Center for Polar Research, to address practical issues. The Center has a staff of five personnel.

Pursuant to the National Program, the Ministry of Natural Resources and Environmental Protection has established and is operating an Interagency Coordinating Board to coordinate efforts and prioritize Program activities (assignments). The Board includes representatives of the Ministry and research institutions that implement National Program assignments.

As envisaged by the National Program, an expedition team from the Republic of Belarus (four people) implemented National Program assignments within the 53rd Russian Antarctic Expedition (RAE) in the vicinity of RAE's Gora Vechernyaya field base from 17 December 2007 to 29 March 2008. The expedition took a number of organizational and practical actions, including those in support of future Belarus Antarctic expeditions.

In October 2008, the Ministry prepared and sent a team of six people to work within the 54th RAE as a Belarus Antarctic seasonal expedition from 5 November 2008 to 22 April 2009. The expedition has the following major tasks: to implement a set of organizational, logistical, engineering and research activities with a view to laying a foundation for deployment of an environmental monitoring system and implementation of seasonal stationary polar studies; to test and pilot instruments and materials made by Belarus producers in extreme environmental conditions; and to generate practical experience required to organize and hold subsequent seasonal and year-round expeditions.

In 2009-2010, Belarus is planning to consider accession to the Convention for conservation of Antarctic Seals, and the Convention on the Conservation of Antarctic Marine Living Resources.

Notes for Minister Cannon's Address, Canada

The Arctic is part of Canada's identity and Canada's Arctic Foreign Policy is one of my most important priorities.

The depth and complexity of the challenges facing the Arctic are significant and we recognize the importance of addressing many of these issues by working with our neighbours – through the Arctic Council, other multilateral institutions and our bilateral partnerships.

International Polar Year has been an important opportunity to work with colleagues from around the world to gain a better understanding of issues and changes that occur in the Polar Regions.

In Canada, more than 1400 investigators from some 30 countries, along with 500 Northerners and 700 students and new researchers have taken part in the more than 50 IPY research projects. Canada's investment in IPY is over $150 million.

The changes that are occurring in the Arctic and Antarctic are significant for nations around the circumpolar North, and throughout the world. From the research we are gaining a better understanding of the impacts of climate change, including Arctic Ocean dynamics, and sea ice changes. As well, important circumpolar health studies are advancing our knowledge of changes affecting Inuit and other Northern populations in terms of diet, chronic diseases and life expectancy.

We are just beginning to share the results of the research conducted during International Polar Year. Many communications, training and outreach initiatives are now underway in Canada and around the world. I am very pleased that Canada will host the science to policy IPY Conference in 2012.

The Government of Canada has committed to building a world-class High Arctic Research Station. This year, Canada dedicated $2 million to undertake a feasibility study for this station, which will lever existing research infrastructure by serving as the hub for scientific activity in Canada's vast and diverse Arctic region.

Remarks by the Minister of Environment of Chile Mrs. Ana Lya Uriarte

Secretary of State Clinton has defined the fundamental challenges that threaten the Arctic and Antarctic environments. I World like to echo her concluding remarks with some suggestions. She has strongly emphasized the need that the hope and enthusiasm generated by cooperation during the last 50 years under the umbrella of the Antarctic Treaty be channelled towards the goal of a sustainable Antarctica. I fully agree with her assessment of the value of scientific cooperation which has yielded results of global important and revealed the fundamental role of Antarctica in modulating many global processes. Antarctic science plays a decisive role when it avoids duplication and provides valuable data and results to global research programmes. The scope of science in the Polar Regions has broadened and intensified with research increasingly directed at questions that politicians, environmental managers and the public are asking: ¿is the ice sheet stable or breaking up? ¿how much will sea level change? ¿what are the implications of the ozone hole and increased levels of UV irradiance for species and ecosystems? ¿what are the impacts of human activities? Linking sciences with politics and environmental management has been an outstanding success in advancing scientific knowledge about Antarctica and its physical and biological environment.

As far as conservation of Antarctica's unique environment is concerned, significant progress has been made in the past few years but some criticism can be levelled at the slow rate of implementation and enforcement of practical measures. In that context and to that end, a Plan for Action could be developed, perhaps for both Arctic and Antarctic in tune with some of the recommendations from the International Panel for Climate Chance (IPCC).

We need a vision for the future as well as specific measures. Therefore, Action Plans to be developed,properly adapted to the realities of Antarctica and the Arctic, and following a regional approach as a step towards a more global target of constructing a "State of the Antarctic and Arctic Environments" should constantly monitor changes and impacts in the atmosphere, oceans and sea ice. Monitoring changes implies periodically updating and making available inventories of anthropogenic emissions introduced through the atmosphere as well as subsequent analysis of the modifications occurring in its chemical composition, as well as in the surrounding oceans where acidification has emerged as an important concern, and in vulnerable habitats such as the glaciers, the fragile lakes and dry valleys of Antarctica, and the coastal regions of the Arctic.

We must continue to monitor the stratospheric Ozone Layer in both the North and the South Pole regions, and apply whenever required the integrated pollution prevention and control measures prescribe by the Antarctic Environmental Protocol. Conservation of Seals and Whales, and other components of the Arctic and Antarctic fauna recognized as important indicators of the conditions of the sea remains also a permanent task which includes the preservation of habitats essential to the maintenance of the vital biological functions of these species. Biodiversity of the Arctic and the Antarctic should be protected through a range of measures adapted to their regional specificity, in order to maintain the integrity of the ecosystems and the value of areas endowed with biological, historic aesthetic, or wilderness significance.

In order to preserve a sustainable Antarctica for future generations it is necessary to implement mitigation measures and controls and adopt policies concerning the use of Antarctic infrastructure, transport and logistic activities, including where feasible and appropriate, using renewable energy technologies to power the Antarctic scientific infrastructures and facilities. There are difficult questions to be addressed concerning not only the adequacy of existing controls of the introduction of alien species, but also issues concerning the extent to which already introduced species should be removed and the extent to which disturbed ecosystems should be managed to allow recovery or be left undisturbed to reach new equilibriums. Mitigation of the alterations produced by the expansion of human presence in Antarctica due to the growth of tourism is unquestionably an urgent task, but persuading governments of the risks and implications of global pollution derived from human activities elsewhere in the world is also indispensable, since evidence exists of the presence in Antarctica of persistent organic pollutants, entirely alien to the Antarctic native ecosystem, but inevitably transported through the atmosphere from the industrial compounds of the northern

hemisphere. The need to phase out emissions and ozone-depleting chemicals, and reaching global environmental agreements concerning the Kyoto Protocol and other available instruments, remains also the key to an enhanced protection of the Antarctic environment and dependent and associate ecosystem.

Action Plans aiming at a sustainable Antarctica, as well as a sustainable Arctic, may be viewed as a unique opportunity to build up, on the already considerable achievements of the Antarctic Treaty System and the Arctic Council, and the growing convergence of the positions adopted by States and international organizations with the opinions sustained by non governmental organizations (NGOs) and the public. Years ago, the Brundlant Report stated that “nations must create the means to foster dialogue among politicians, scientists, environmentalists, and industries”. We need now a further step, from words to action. It follows that the task must be to keep human impacts in Antarctica and the Arctic at sustainable levels, and maximize the use of the scientific wealth obtained from the polar regions to ensure that their environments are preserved and maintained into the future, irrespective of changes taking place elsewhere.

Remarks by H.E. Mr.Zhou Wenzhong, Ambassador of China in the United States of America

Honorable Secretary Clinton,

Distinguished delegates,

Good morning.

Today, ministers of Antarctic Treaty Consultative Parties and Arctic Council Member States gather together for the first time, to celebrate the 50th anniversary of the signature of Antarctic Treaty and the successful conclusion of the 2007-2008 International Polar Year (IPY). This historical event provides us with unique opportunity to review lessons learnt from the past 50 years, and reflect on the future of polar issues.

Looking back on the history, we regarded cooperation and consultation as the most important element for the success of Antarctic Treaty and the IPY, and the cornerstone for addressing polar issues.

It is with the spirit of cooperation and consultation that Antarctic Treaty was concluded, laying aside disputes arisen from territorial claims in a creative way, and paving the way for further cooperation in Antarctica. Thereafter, the spirit of cooperation and consultation has been embodied in development of the Treaty system, the increase of the Treaty parties, and the enhanced understanding between parties and non-parties. The Treaty has contributed significantly to the peace, stability and environmental protection of the Antarctic region, and set a successful example of international cooperation.

It is also with the spirit of cooperation and consultation that the IPY was organized effectively, carried out smoothly and reached a successful conclusion. The 2007-2008 IPY, being the largest international scientific cooperation in the past 50 years, involving thousands of scientists from more than 60 states, endorsing 160 projects covering various disciplines, has became a successful model of international science cooperation.

Looking ahead, we found both polar regions are faced with continuous challenges. Climate change, persistent organic pollutants and other global environmental problems have increasingly severe impacts on polar regions. On-going oil and gas prospecting and exploitation and emerging shipping in the Arctic region raised new dimensions for the protection of Arctic environment. Antarctic tourism and bioprospecting became a new test on the wisdom of Antarctic Treaty Consultative Parties. Most of the polar issues are of a global nature, and require joint effort of all relevant states. To address those issues, cooperation and consultation should be further enhanced, principles of the Antarctic Treaty system and lessons from IPY could serve as important reference.

First, the fundamental role of scientific research should be emphasized, and scientific cooperation during IPY should be continued and upgraded, with focus on the impact of global change and emerging activities such as shipping. Sustained observation system should be developed, to fill the temporal, spatial and disciplinary gap of existing research, and for a comprehensive and thorough understanding of polar regions.

Second, interaction between scientists and policy makers should be promoted. Results of scientific researches should be made available, and scientific findings with policy implications should be compiled, studied and synthesized, for the reference of policy makers. Policy makers should continue supporting polar scientific research politically and financially, fully respect the research of scientist, and base their policy on scientific researches.

Third, policy makers should fully recognize that no single state could address polar issues alone. Cooperation should be enhanced within the framework of Antarctic Treaty system, Arctic Council, United Nations Convention on the Law of the Sea, International Maritime Organization, etc. Political wisdom should be exerted for the common good and the benefit of future generations, and sometimes, necessary compromise should be made.

2009 also marks the 25th anniversary of China's first Antarctic expedition. During the past 25 years, China has carried out 25 Antarctic expeditions, 3 Arctic marine expeditions, 5 years' Arctic station-based expedition, established CHANG CHENG, ZHONG SHAN and KUNLUN station in Antarctic, and YELLOW RIVER stations in Arctic. About one hundred of foreign scientists have participated in China's polar science programmes. China has became an Antarctic Treaty Consultative Party, and cooperated favorably with Arctic Council as an ad hoc observer. During the 2007-2008 IPY, China finished the first phase construction of KUNLUN station on DOME A area, which will serve as another platform for future international cooperation on scientific expedition and research. China will, as it did in the past, continue to work together with scientists and policy makers from all over the world, and contribute to the peace, stability and sustainable development of polar regions.

Thank You.

Opening Statement by H.E. Ambassador Klaus Scharioth, Germany

Mr. Chairman/Mr. President,

The 50th anniversary of the Antarctic Treaty: We have every reason to celebrate at this year's 32nd consultative meeting of the parties. Also notably, this meeting coincides with the conclusion of International Polar Year, which gives us the opportunity for the first time to adopt a kind of "transpolar" ministerial declaration together with the Arctic Council. We are very grateful to our host, the Government of the United States of America, for preparing and coordinating these events and activities.

The dramatic change in climate conditions underway in the North Pole has also consequently drawn attention to the South Pole. The climate, environmental protection, and tourism in the Antarctic remain a focus of growing public interest. This is not the only reason why Germany has long been committed to the two polar regions. In Antarctic, we have also just opened Neumayer III, which replaces the previous research station. The station was built using environmentally-sound methods. The new station is open to the scientists and projects of all nations. Furthermore the close cooperation in recent years of eleven countries in establishing and running the highly successful international airconnection "Dronning Maud Land Air Network" has to be mentioned. Through this airlink an efficient access by air from Capetown to the scientific research stations in the Antarctica has been secured. Another project which documents Germany's interest in the North and South Poles – and that of numerous other transnational research communities – is the development of a research and drilling vessel of new dimensions, the *Aurora Borealis*.

We are looking forward with great satisfaction and enthusiasm to the coming days of consultations, which will show once again that the Antarctic Treaty System has proven its value, even after 50 years, in its unique nature and specific framework conditions. Germany and its scientists – regardless of my country's distance from this large Pole –remain reliable partners in the Antarctic network.

Statement of India

1. India joins the other speakers in thanking the Secretary of State for inaugurating this historic event and in thanking the United States for hosting the 32nd Antarctic Treaty Consultative Meeting. India is committed to the preservation of the fragile eco-systems of the Antarctic environment.

2. The year before last, in 2007, we had the privilege of playing host to the 30th ATCM in New Delhi. At that meeting, India joined other nations in expressing concern at the effects of rising tourism in Antarctica. At the New Delhi meeting there was also a great emphasis on the need for "regulated tourism". We are glad that the United States intends to introduce a comprehensive paper on this issue at the current meeting.

3. India is active in scientific research in Antarctica, having launched twenty-eight expeditions to the icy continent. Very recently, with the cooperation of Norway, we have established a research station in Ny Ålesund, Svalbard for bi-polar research.

4. We are also glad to have participated in the International Polar Year, especially through the shallow ice core drilling under the IPICS/ITASE programs to understand Holocene climatic variability, and through the Antarctic biodiversity program in the Schirmacher Oasis in central Dronning Maud Land.

5. We have also had a very successful outreach program conducted in association with the World Wildlife Program, where hundreds of school children were targeted to spread awareness of polar issues.

Thank you.

Statement by H.E. Seiko Hashimoto, State Secretary for Foreign Affairs of Japan on the occasion of the 50th Anniversary of the Antarctic Treaty

1. It is my great pleasure to be here in Washington DC, where the Antarctic Treaty was signed in 1959, to celebrate its fiftieth anniversary. My deep appreciation goes to the United States for so graciously agreeing to host this conference and the Secretariat, which has made tireless effort for its success.

Antarctica is still an unknown place, one very different from where most of us live. Perhaps this is why it has attracted so many people almost over the past two centuries. Since courageous people such as Japanese Lieutenant Nobu Shirase successfully explored Antarctica, many adventurers have added to the history of Antarctic exploration. Meanwhile, scientific interest in Antarctica has grown steadily, with Japan among those countries actively engaged in research and observation that has had added greatly to the store of human knowledge about that part of the world.

2. It is well known that the ozone hole was discovered over Antarctica for the first time in the 1980s. Japan started the observation of atmospheric ozone in 1961. After continued regular observations, the ozone hole was discovered by the member of the 23rd JARE (Japanese Antarctic Research Expedition). Our observation of surface ozone density then commenced in 1988. I believe these observation results made a great contribution to the international effort under the Montreal Protocol on Substances that Deplete the Ozone Layer.

Observation of the Antarctic provides valuable data about the past condition of the Earth and helps us to understand something about its future. In 2007 at the Dome Fuji Station, scientists succeeded in drilling into the ice shelf to a depth of 3,035 meters, and acquiring data on the changes in temperature and greenhouse gases that have taken place over the past 720,000 years. These data will undoubtedly help to clarify the history of the global environment, and it is expected they will be utilized as we address issues such as climate change. I think Antarctica is a place that gives a direction to our activities to protect the global environment.

3. These achievements were made possible by the establishment of fundamental principles of the Antarctic Treaty, namely, “peaceful use” and “freedom of scientific investigation and international cooperation”. These principles made clear that Antarctica is a place for peaceful use including scientific research, which encouraged confidence-building among nations.

Japan is an original signatory of the treaty and has acted responsibly as a consultative party. It will continue to do so and work to maintain the basic principles of the Treaty.

4. As consideration is given to the activities that will take place in Antarctica in future, I understand that the issue of tourism is attracting attention. I think Antarctic tourism should be conducted in a responsible manner not to interfere with the value of Antarctica as the place for scientific research or to adversely affect the Antarctic environment. We should protect the Antarctic environment and its place for scientific research, which deserve protection, from tourist activities. On the other hand, Antarctic tourism itself can also be beneficial for the mankind, by contributing to raising public awareness of Antarctica and providing the general public with opportunities for environmental education.

My country has promoted environmental conservation in Antarctica by enacting the “Law Relating to Protection of the Environment in Antarctica”, to ensure that Japan is in full compliance with the provisions of “the Protocol on Environmental Protection to the Antarctic Treaty”.

Japan will continue to take part in the discussion on necessary actions on Antarctic tourism in good faith. In this way, we hope to contribute to the discussion for the steps to be taken specific to the type, place, time, etc of the activity, based on its scientific and objective assessment and anticipation.

5. In the Arctic, climate change is said to be causing the shrinking of sea ice. I understand this has increased the potential use that can be made of the Arctic Ocean and encouraged international discussion concerning sea lanes, resource development and the environment.

As a country completely surrounded by water and relying for most of its trade on marine transportation, Japan is very interested in this potential. Above all, the risk of marine pollution could be an issue we cannot ignore as a country actively making effort to protect the global environment.

We therefore would like to take part in international discussions on issues relating to the Arctic. We will shortly start application procedures to the Arctic Council as an observer. In that context, I would like to take this opportunity to seek kind assistance and cooperation of the members of the Arctic Council, especially Norway as its chair.

6. Before closing, I would like to mention that next month Japan will launch the new “Shirase”. It will be equipped with a variety of environmentally-friendly devices and I believe that it will represent Japan’s environmental technologies and become a model of Antarctic activities.

7. Because Antarctica is a special place in a special environment, all of us gathered here have a special responsibility to protect it. With this in mind, Japan will continue to promote research and observation there, and do its part in preserving the Antarctic environment, abiding by the principles of the landmark treaty we celebrate here today.

Statement by H.E. Dr. SHIN Kak-soo, Vice Minister of Foreign Affairs and Trade, Republic of Korea

Excellencies, Ladies and Gentlemen,

I would like to begin by expressing my sincere thanks to the United States for hosting the Joint Meeting of the Antarctic Treaty Consultative Meeting and Arctic Council and the ceremonies celebrating the 50th anniversary of the signing of the Antarctic Treaty here in Washington in 1959. I would also like to extend my gratitude to the Secretariat for its tireless efforts and the meticulous arrangements made for this event.

I am indeed pleased to note that the 4th International Polar Year (lPY) has proved a great success due to the active participation of the international community at all levels, thereby contributing to deepening understanding of the characteristics and dynamics of polar regions.

The first IPY was held in 1882 by scientists from 12 countries following the idea initiated by Karl Weyprecht who was an explorer and scientist, with the aim of pursuing joint research in polar regions.

The success of the first IPY set a valuable precedent in international cooperation for the subsequent study of polar regions. And it contributed greatly not only to enriching the knowledge of mankind of the Antarctic but also to developing awareness amongst the general public.

In particular, international cooperation achieved during the third IPY, which was conducted from 1957 for two years contributed to the successful adoption of the Antarctic Treaty, and also the subsequent establishment of the Antarctic Treaty System.

In this regard, the tradition and outcomes of the international cooperation in our polar research, made possible with the success of the last four IPYs, are invaluable assets of the Antarctic Treaty Consultative Meeting and the Arctic Council. I therefore wholeheartedly welcome today's adoption of the 'Declaration on the International Polar Year and Polar Science', which contains wording recognizing the great value of such efforts.

Excellencies, Ladies and Gentlemen, Since the Republic of Korea joined the Antarctic Treaty System in 1985, it has been actively conducting extensive polar research and activities in keeping with the spirit and objectives of the treaty system. For the fourth IPY, Korea participated in various IPY related international science programs including North Greenland Eemian Ice Drilling. At the domestic level, the Korean Government held a public awareness program 'Pole to Pole Korea' with the aim of enabling the public to experience polar research and activities and to develop awareness of the importance of polar research.

In addition, the building of the Korean icebreaker with a capacity of 7,000 ton holding 85 crew members is scheduled to be completed this year and this is expected to upgrade the infrastructure of the polar research pursued by Korea.

I would like to bring my remarks to a close simply by reaffirming the commitment of the Republic of Korea to actively participate in the implementation of the Declaration on the IPY and Polar Science to be adopted today.

Statement by Prince Albert II, Principality of Monaco

Thank your Mr Chairman,

Your Excellencies,

Ladies and Gentlemen,

Dear Friends of the Polar Regions,

I am delighted to have the opportunity to speak in front of you on this day of commemoration alongside the parties to the Antarctic treaty and the members of the Arctic Council.

Thank you for welcoming my country Monaco as the 47th country to join the Treaty.

Here we are, 50 years after twelve countries decided to protect this continent -the shared memory of mankind - and promote peace as well as international cooperation.

The awareness of the challenges attached to this continent now allows us to implement all the resources aimed at a scientific understanding of the phenomena that are changing the key environmental balances in our planet.

After personally visiting these regions, I can bear witness to the passion to the determination of the many young scientists and students I met in the many bases I visited to make their full contribution to this shared objective.

Thank you.

Statement by Ambassador W A W Nhlapo, Republic of South Africa

South Africa would like to thank the United States government for taking the initiative to arrange this prestigious event, which fittingly, provides the opportunity for a review of the accomplishments achieved during the International Polar Year (IPY) of 2007-2008 and for the appropriate celebration of 50 years of peace and science on the Antarctic continent.

Furthermore, we applaud the announcement by the United States Secretary of State, the honorable Hillary Clinton, confirming the United States intention to shortly ratify both the United Nations Convention on the Law of the Sea (UNCLOS) as well as Annex VI of the Protocol for the Environmental Protection of the Antarctic. To this end, I too, can confirm that South Africa will in the near future, table before its Cabinet, its Annex VI instrument for ratification.

As an original signatory to the Antarctic Treaty with active participation in the IPY, we look forward to continuing the legacy of international cooperation fostered by the Treaty and the sharing of valuable scientific knowledge, highlighted once again through the recent IPY interaction.

Going forward we identify with the views expressed by many parties that an area of concern which requires our priority attention is that of global climate change. As the only African State party to the Treaty, from a continent which is likely to be most adversely affected by the impact of climate change, we will continue to play an active part in trying to address this issue.

We look forward to this and the continued evolution of the Treaty as an instrument which will always have the environmental stewardship of the Antarctic continent as one of its pillars.

In closing, I wish to express my country’s appreciation to our hosts for the excellent arrangements and venue, providing a platform to facilitate the important deliberations of the Antarctic Treaty.

Statement by Gillian Merron MP, Parliamentary Under-Secretary of State, Foreign & Commonwealth Office, United Kingdom

Secretary of State and Distinguished Colleagues and Heads of Delegations,

May I start by joining others in thanking the US Government for initiating this celebratory 50th Anniversary meeting. It is certainly fitting that we should use the opportunity to marvel at what the Antarctic Treaty has achieved during the past half a century. The United Kingdom also, and without exception, confirms our ongoing commitment to the Antarctic Treaty System and hopes that all Governments will continue to co-operate within the Treaty framework to address the current and inevitable future challenges that will face Antarctica.

The Antarctic Treaty System has grown into a comprehensive framework for the conservation and protection of the Antarctic environment. It is important that we collectively underscore at this event, that the Treaty is indefinite in its scope. We should also highlight that this year marks the 18th Anniversary of the signing of the Environmental Protocol, arguably one of the most important agreements in respect of Antarctica. The world recognises this Protocol as the instrument which banned commercial minerals exploitation, but it is goes far beyond that and there should be no doubt at our collective will to continue to provide for the comprehensive environmental protection of Antarctica.

Over the past 50 years, the Treaty Parties have developed innovative and resourceful solutions to a range of challenges and threats to Antarctica. The UK has implemented all current Recommendations and Measures and has recently announced that a new Bill on Antarctica to implement the Annex on Liability to the Environmental Protocol will be introduced in Parliament. We encourage all Treaty Parties to implement all outstanding Treaty instruments as soon as practicable to bring into force a range of additional protective measures agreed over recent years.

In the view of the UK, however, perhaps one of the greatest challenges to face Antarctica is before us now. The impacts of climate changes to some regions of the continent, notably the Antarctic Peninsula, are dramatically changing the landscape. We are beginning to understand that the effects of climate change in the Polar Regions will have a dramatic effect on the rest of the world. The retreat of ice is like the peeling back of a protective blanket and the challenge of protecting the environment and vulnerable ecosystems of the Arctic and the Southern Ocean is both immense and urgent.

The endeavours of our scientists during the International Polar Year to gain a greater understanding of the Polar Regions, including in relation to the effects of climatic changes, deserve to be highly commended and supported. The international collaborations that have been undertaken over the past few years have provided us with another step forward in our knowledge and understanding of these vast and beautiful regions of the world. There is no doubt that the Polar Regions are the world's barometer on climate change. We must heed the results of these scientific investigations and harness the political will to respond with collective determination, action and resources – including at the forthcoming UN Climate Conference in Copenhagen.

The Edinburgh Declaration, adopted by the Antarctic Treaty Parties in 2006 and endorsed by the Arctic Council, supported the objective of a lasting legacy from the International Polar Year. The presentations we have heard this morning provide just a snap-shot of the wealth of activities and discoveries that have been made possible by our co-ordinated efforts. As stated in the Declaration, we encourage the World Meteorological Organisation and the International Council for Science to synthesise the results. And we would encourage the Antarctic Treaty Parties and the Arctic Council to consider the implications of the key scientific findings for the future management of activities within these vulnerable regions. I hope that this inaugural meeting of the Antarctic Treaty Parties and the Arctic Council will be the start of a new collaboration on matters of mutual interest and a new co-

ordinated effort to ensure that those countries who do not directly participate in polar affairs, will nevertheless take account of the impact of wider global actions on these special places.

United Kingdom has a key objective of enthusing the next generation to continue the work of protecting the Polar Regions. We want to ensure that those who are fortunate to visit these regions, in whatever capacity, do so in a safe and environmentally responsible way. We want people to understand their importance and for the world to continue to co-operate in ensuring their protection, including enhancing and extending special protection measures for the most vulnerable areas and species. The UK will continue to work within the Antarctic Treaty System and to co-operate with the Arctic Council to further these objectives.

On behalf of the United Kingdom, may I once again thank the United States for hosting this historic meeting. May I also congratulate and encourage all those who have worked tirelessly to understand and protect the Polar Regions, in particular those who are here today to mark the 50th Anniversary of the Antarctic Treaty. Your work is acknowledged and appreciated. It is vital that it continues.

Remarks by H.E. Dr. Oleh Shamshur. Ambassador Extraordinary and Plenipotentiary of Ukraine to the United States of America

Esteemed Chairperson, Heads and Members of Delegations, Ladies and Gentlemen,

At the outset I would like to express gratitude to the United States and especially to the Secretary Clinton, and to the Secretariat of the Antarctic Treaty for hosting and organizing this event.

Today, for the first time Antarctic Treaty Consultative Parties and Arctic Council Member States gathered together to celebrate the 50th anniversary of Antarctic Treaty and conclusion of the 2007-2008 International Polar Year.

We all know that Antarctica is a unique wilderness reserve belonging to all of mankind. It is our duty to work together to study Antarctica and preserve its pristine nature for future generations. The founding states of the Meeting of the Consultative Parties to the Antarctic Treaty in the previous century created a solid basis for international cooperation in this special area of the planet.

The conclusion of the Antarctic Treaty emphasized the recognition of previous achievements in the research of the Antarctic continent and confirmed the wish of the international community to create a basis for the protection of both the vulnerable natural system of the continent and the adjacent waters. It is through the joint efforts of our countries that the seemingly unfriendly land has become a region of true friendship, mutual understanding, and of collaborative scientific endeavour among courageous representatives from many nations.

The fact that the number of Consultative Parties and states having the observer status increased from 12 to 46 is an evidence of understanding the importance of the Antarctic for the humankind. Ukraine joined the 1959 Antarctic Treaty in 1992. However, it was the signing of the memorandum on the transfer of British Antarctic Base Faraday on Galindez Island (currently the Vernadsky Station) to Ukraine in London in 1996 that was a key milestone in Ukraine's joining the international Antarctic community. Ukraine's obtaining the status of the Consultative Party to the Treaty in 2004 enabled our state to join this global movement in full capacity. In the year 2008 Ukraine, as a Consultative Party to the Treaty, hosted XXXI Antarctic Treaty Consultative Meeting.

Ukraine has always taken an active part in international Antarctic studies. "Academician Vernadsky," the Ukrainian research station, is one of 17 basic centers of the global climate change observing system of the World Meteorological Organization, and this fact is a demonstration of the recognition by the world community of Ukraine's capabilities and, at the same time, imposes certain international obligations on our state.

Since the establishment of the Vernadsky Station there have been 13 Antarctic expeditions. The station has hosted wintering teams and provided a base for studies in many research areas during the summer seasons. Our scientists maintain coordination with the Antarctic researchers from other countries and through long-term agreements, exchange wintering personnel and scientists, development of a number of joint research programs and logistic operations.

Let me stress that my country stands for strict compliance with the Antarctic Treaty and for united efforts by all interested states. We are confident that studies of Antarctica and its climatic and geological features would show mankind how to address numerous environmental issues, enrich global science, and promote progress and security of our civilization.

The 2007-2008 International Polar Year has yielded the best results in international scientific cooperation over the past years, and has become a successful model of multilateral coordination of scientific research. As we have learnt, global warming and glacier melting processes currently observed in the polar regions are caused not only by anthropogenic, but also by natural factors. It is therefore our mission to forestall negative phenomena that might contribute to destabilization of the planetary water/ice balance and provoke international tensions over the redistribution of Antarctic mineral and biological resources.

Most of the polar issues are of a global nature, and require joint effort of the international community. In order to address those issues, cooperation and consultation should be further enhanced and principles of the Antarctic Treaty system and outcome of 2007-2008 International Polar Year could be a consequential ground for it.

With this respect I should mention that Ukraine always pays attention to issues, such as restriction and regulation of the use of natural resources in the Southern Ocean, circumpolar regions, Antarctic offshore zone, and Southern sea basin; coordination of research; and management of adventure and environmentally sound tourism. We are convinced that joint efforts by politicians, diplomats, scientists and entrepreneurs will permit these issues to be addressed in a most coordinated and mutually beneficial way for the good of all mankind.

Speech by Dr. Gonzalo Fernández, Minister for External Relations, Oriental Republic of Uruguay

We would like to start by expressing our thanks to the host country and its people for holding this event in this welcoming, conducive setting, and to all present for having given us this opportunity to share a few thoughts with you, our friends.

The poles are ideal regions for the observation of phenomena related to climate change, among other things, where the main interactions between the polar atmosphere, ice masses, the ocean and the biota affect the entire planetery system, and where it is possible to verify significant variations in, for example, the increasingly rapid retreat of the ice masses.

The International Polar Year 2007-2008 has clearly contributed to the promotion of the aims and objectives of the Antarctic Treaty, which was built on the wealth of experience gained during the International Geophysical Year 1957-58, an initiative that could almost be compared with a major, joint scientific expedition.

The objectives promoted by the International Polar Year initiative, which include the training of future generations of polar scientists, the participation of nations without a polar tradition and the protection of the environment, have clearly been translated into practice, leading to international cooperation based on broad-ranging freedoms and the exchange of the results of scientific research.

In this respect, one must take the long view, and in order to ensure continuity and coordination, it will be necessary to analyse the results of this research, as well as ensure full access to these results using modern information and communication technologies and all that they have to offer.

When considering the future of the polar sciences, it is important to recall the roughly 500 research projects studying both poles in which Uruguay participated – which included observations of the rapid changes in snow and ice cover, the appearance and migration of species in the Western Antarctic, and interaction between the poles and other regions of the planet, considered to be global changes observed in local and regional phenomena – and recognise the need, as we see it, to target and support the development of the Antarctic sciences in these sensitive areas.

We still have a relatively limited understanding of the poles' response to sustained global warming, and so it is essential that we continue to monitor developments and biodiversity and any likely changes to the climate and its systems, as well as very specific aspects such as the observation of ice masses, their movements and the cryosphere, with the help of remote sensing techniques.

This activity follows an eminently precautionary approach, with a view to safeguarding the poles' status as a unique laboratory as well as the valuable resources they harbour: the wealth of marine species, the fresh water frozen in the ice masses and the minerals present in the Antarctic (the mining of which is currently banned under Article 7 of the Protocol on Environmental Protection), not to mention their unique aesthetic, natural and historical value.

Our priority must be to maintain this precautionary approach, striking a balance between sustained scientific development and the preservation of the object of study and interest.

Future achievements in the polar sciences will be directly proportionate to the efforts pursued at a national and international level and by the responsible bodies, through cooperation, and must build on the achievements of the International Polar Year in terms of awareness-raising and material and technical development.

We should be able to ensure full and free access to the scientific information compiled, which will allow us to understand developments, establish reference levels and identify trends so as to better predict the future.

We must consolidate the results of this research and offer support and accompaniment in the form of guidelines from specialised organisations such as the "Scientific Committee on Antarctic Research" (SCAR), the "Council of Managers of National Antarctic Programs" (COMNAP), the "Commission for the Conservation of Antarctic Marine Living Resources" using an ecosystem-based approach, the

"Committee for Environmental Protection" and the "Consultative Meeting of the Antarctic Treaty" and its expert groups.

Support for the polar sciences will undoubtedly contribute to more robust and efficient environmental management of the Antarctic in this context, and will help maintain international cooperation, ensuring more attention is paid to the changes taking place in the polar regions, which hold the key to the future and can have effects on the rest of the planet.

Considering the inherent differences in their nature, the development of the polar sciences in the Arctic and Antarctic can be carried out in a mutual synthesis of thesis and antithesis which, through the human component, brings these parts of the planet closer together.

THANK YOU.

3. Opening Statements by ATCM Representatives

Opening Speech by Ariel Mansi, head of the Argentinean Delegation

Chairman:

I would like to start by congratulating you on your election as chairman of the XXXII Antarctic Treaty Consultative Meeting. Through you, I would also like to thank your country for the hospitality it has shown in generously offering to host this meeting in the historic city of Baltimore.

This meeting is particularly relevant for all of us, as it marks a milestone in history: the 50th anniversary of the signing of the Antarctic Treaty. This instrument used an imaginative and creative approach to establish a legal framework for the regulation of scientific research and other activities to be carried out in Antarctica, in a spirit of peace and international cooperation. The cornerstones of the Treaty, which have allowed it to achieve its objectives, are the prohibition of all military and nuclear activity on the continent, as well as the ingenious Article IV, which, quite wisely, puts all Parties' territorial claims on hold.

The Antarctic Treaty has become well-established, and has successfully overcome a number of problematic situations and challenges that have arisen over the years. All this has led to the creation of the "Antarctic System", a term coined by Roberto Guyer, a member of the delegation representing my country in 1959.

The concept of Peace is absolutely essential for the safeguarding of the Antarctic Treaty System; it is what guides all the measures and decisions adopted in this field. We would not have come very far without the principle of consensual decision-making. As the guiding principle of all aspects of the Antarctic Treaty System, the rule of consensus must be applied in full to ensure that the System can continue to flourish. It goes without saying that a waiving of this principle, even in exceptional circumstances, would end up undermining everything that has been built up so laboriously over the past 50 years.

Often, it takes considerable time and effort to achieve true consensus, although it is equally true that once the necessary points of convergence have been agreed upon, the resulting decision is firmer, more robust.

The Antarctic Treaty System has always been characterised by the respect for international law. That is why any situation that implies a move away from international law, such as the use of force, however minimal it may be and whatever the justification, would be unacceptable, and would only contribute to undermining the System.

Argentina remains firmly committed to protecting the Antarctic environment, a goal which it pursues through the furthering of scientific knowledge and the dissemination of information on the special conditions and characteristics that make this continent unique. This is the best way to protect the Antarctic.

This commitment is best illustrated by the host of scientific projects currently being conducted by Argentina in Antarctica, both on its own and in cooperation with other countries; historically, Argentina boasts the oldest scientific base in the Antarctic, in uninterrupted operation for over 105 years now: Orcadas. Since those early days, the Orcadas base has been the source of meteorological data, which form the basis for much of the research currently being carried out on climate change and global warming.

Argentina views positively and appreciates its cooperation with international organisations, both inter-governmental and non-governmental in nature, particularly when this cooperation aims to further strengthen the Antarctic Treaty System.

This year also marks the conclusion of the International Polar Year, 50 years after the International Geophysical Year; the spirit of peace and international cooperation represented by the latter set a valuable precedent leading to the negotiations that concluded with the signing of the Antarctic Treaty.

I remain convinced that the best way to protect the Antarctic, its pristine environment and the entire planet is through solidarity, peace, teamwork and cooperation. In this light, my country reaffirms its commitment to furthering scientific knowledge, protecting the environment and promoting close cooperation with other countries in order to achieve this goal.

Australia's Statement

Australia celebrates the 50th anniversary of the signing of the Antarctic Treaty, a Treaty which has at its core provisions which represent an intelligent and innovative balance of rights and interests, and which have endured the test of time.

Often described as the first disarmament treaty, the Antarctic Treaty has been successful in removing the potential for conflict and tension through its provisions on claims to territorial sovereignty, prohibition on activities of a military nature, and ban on nuclear explosions.

Australians were prominent among the early pioneer explorers of the continent, whose extraordinary courage and stamina allowed them to start uncovering the wonder of Antarctica in the face of hardship and privation. Australia values in particular the early contributions of Sir Douglas Mawson, Sir George Hubert Wilkins and John Rymill which established the collaborative approach continued today in Australia's Antarctic activities.

Australia was active in Antarctica in the International Geophysical Year of 1957-1958, which immediately preceded the negotiation of the Antarctic Treaty, and has remained committed to preserving Antarctica as a realm of peace and science, free from international discord and a region where environmental protection is paramount.

Australia maintains three permanent bases in Antarctica – Casey, Davis and Mawson – as well as a number of temporary facilities required as part of our national Antarctic Program. Mawson station, established in 1954, has seen the longest continuous occupation of any station on the Antarctic continent.

Australia has strived to meet the ideal of cooperation established by the Treaty's original signatories, in seeking to uncover Antarctica's scientific potential, through our scientific and logistic activities in Antarctica. Australia has been deeply involved in Antarctic scientific research, including in the International Polar Year (IPY) 2007-2008, which, Australia hopes, will herald an era of closer international collaboration aimed at the key scientific questions that only Antarctica can answer. The inter-continental airlink established in 2008 will help Australia to expand further our logistical cooperation with other Treaty Parties.

The Antarctic Treaty system has proved to be remarkably dynamic, sufficiently flexible to meet new challenges, and capable of evolving to address emerging issues and changing priorities. Australia remains firmly committed to upholding and developing the institutions underpinning the international governance of Antarctica, and we will continue to play an active role. Australia was one of the 12 original signatories to the Treaty and hosted the inaugural Antarctic Treaty Consultative Meeting in Canberra in 1961. Australia was a founding member of the ground-breaking Convention on the Conservation of Antarctic Marine Living Resources and is proud to host the Headquarters of its Commission. Australia was a leading proponent of the Protocol on Environmental Protection to the Antarctic Treaty. Australia was also an original member of the Agreement on the Conservation of Albatrosses and Petrels and is host to its Secretariat.

On this occasion, Australia reaffirms its dedication to upholding the values enshrined in the Antarctic Treaty and to continuing to work to strengthen and develop further the framework of the Antarctic Treaty system.

Statement by Mr. Duan Jielong, Head of Chinese Delegation

The year of 2009 marks the 50th anniversary of the conclusion of Antarctic Treaty, which has laid aside Antarctic territorial claims, and constituted solid basis for international cooperation in Antarctic region. During the past 50 years, the Treaty has been developed into a system encompassing the *Convention on the Conservation of Antarctic Marine Living Resources*, the *Protocol on Environmental Protection* and hundreds of other legally binding instruments. Treaty parties have increased from 12 originally to 47 at present. Understanding between parties and non parties has been significantly enhanced. The Treaty's role in safeguarding peace and promoting scientific researches and environmental protection in Antarctic region is widely recognized, and the Treaty has been universally accepted as a successful model for international cooperation.

Reviewing the history of the Antarctic Treaty system, no one could neglect the fundamental role of Article IV of the Treaty. With its creative thought and regime design, Article IV reserves various positions on the legal status of Antarctic and makes countries with different views sit down together for common benefits. This amazing Article, which has been reaffirmed many times in other instruments under the Antarctic Treaty system, is the constitutional principle and cornerstone of the Treaty system. This unique Article sets a successful example for disputes settlement, and tells the world that there will always be a solution whenever there is a political will.

Together with Article IV, we identified the following principles as the most important pillars that underpinned the Treaty system and led the system to success.

First, to reserve Antarctica exclusively for peaceful purposes, free from measures of military nature, is a wise decision which makes Antarctica the only continent so explicitly declared. It is a lesson learnt from the world wars in the first half of last century, and will be a lesson for future in turn.

Second, freedom of scientific investigation and free exchange of results of such investigation are indispensable for increasing knowledge of Antarctica and making relevant decisions. Scientific cooperation in Antarctica has bear well, and contributed to cooperation at political level.

Third, to designate Antarctica as a natural reserve, and protect Antarctic environment and its dependent and associated ecosystems in a proactive way, are crucial to address increasing impacts of global change and growing human activities in Antarctica, and embodies the responsibility and commitment of Antarctic Consultative Parties to the world and future.

Last but not least, the consensus principle of Antarctic Treaty Consultative Meeting is of fundamental importance to draw wisdom of all relevant parties. The consensus principle, while catering to concerns of all, made implementation much easier. This principle should never been labeled as hampering efficiency. The huge amount of legally binding measures adopted is an exact proof to the point.

Those principles are the cornerstone and pillars that underpinned the Treaty system, making the system function smoothly and win international reputation. Today, Antarctic Treaty Consultative Parties are still encountered with continuous challenges such as growing impacts of global changes, bioprospecting, tourism and other non-governmental activities. The above-mentioned principles are still highly relevant and effective in addressing current and future issues in Antarctica, and should be fully recognized and sincerely followed. Any solution to be made regarding Antarctic issues should be made by consensus, contribute further to the peace, scientific cooperation and environmental protection in Antarctica, and shall never impair the legal status of Antarctica as enshrined in Article IV of the Treaty.

In accordance with those basic principles, China has cooperated with other parties for decades, during Antarctic expeditions and within relevant bodies of Antarctic Treaty system. Antarctic cooperation under the existing Treaty system has been helpful to all, and leads to an all-win situation. China is determined to further cooperation with all relevant parties, following basic principles of the Treaty system, for a better future of Antarctica.

Statement by the Head of the Peruvian Delegation

Mr. President

Fellow Delegates

In the first place, I would like to express my sincere congratulations on your election as President of the XXXII ATCM as well as my wishes for your success in the discharge of your duties. I would also like to express my special appreciation to our host, the United States of America, for its impeccable organizational labor of this Consultative Meeting and for its valuable contributions to make this ATCM one to be remembered for a long time, as well as our gratitude for the attentions and facilities offered.

The Peruvian delegation attends to this ATCM filled with a special spirit marked by the significance ofthe commemoration ofthe fiftieth anniversary of the signing of the Antarctic Treaty in Washington, in which occasion, appreciating the undoubted achievements so far, we must reflect on the future tasks that we must undertake to continue refining and strengthening the Antarctic Treaty System. Also, to deal with strategic vision complex and diverse problems requiring priority attention, such as those related to climate change and its implications for the Antarctic environment and its dependent and associated ecosystems; a more sophisticated and effective defense of the Antarctic environment; a comprehensive regulation of tourist and non-governmental activities, addressing the issue of cumulative impacts; the increased security of navigation to better preserve human life and reduce the risk of harm to the marine environment. Moreover, there must be imaginative political and legal efforts to engage other nations to cooperate with the objectives of the Treaty, the Environmental Protocol and measures adopted by CCAMLR.

In this year, Peru also commemorates a special anniversary: after acceding accession to the Treaty in 1981, y country began its Antarctic activities in 1988 with the completion of its first expedition to the Continent.

This year marks our 20th anniversary of having attained the status of Antarctic Treaty Consultative Party and since then Peru has maintained its interest in Antarctica, not only through a continuous process of integration into the Antarctic community and the institutions that make up the Treaty System, but also through the operation of the Machu Picchu Research Station in King George Island and by conducting 18 scientific expeditions during the austral summer, for development of research projects related to marine biology, oceanography, atmospheric and space science, meteorology and hydrology, etc.

Furthermore, Peru has participated in the Consultative Meetings since 1988 and had the honor of organizing and hosting the XXIII RCTA in Lima during the 40th Anniversary of the Treaty in which the Lima Declaration was adopted, a document in which the Parties, on the threshold ofthe new millennium, stated that Antarctica will be forever dedicated to peace and science and reaffirmed their determination to face together the challenges ahead and continue, in a spirit of cooperation and solidarity, the historic mission set by the Treaty.

In this context, the Washington Ministerial Declaration, adopted on April 6 on the occasion of the 50th Anniversary of the Antarctic Treaty is essentially a confirmation of our faith in the principles, aims and objectives of the Treaty and a renewal of our moral and legal commitments made under the Treaty and within the System resulting from it. Peru, thus, fully shares the content and spirit of this document and wishes to leave record of its commitment.

Mr. President, The XXXlI ATCM that takes place in the beautiful and hospitable city of Baltimore coincides too with the formal conclusion ofthe fourth International Polar Year, a new scientific crusade that has mobilized huge human and material resources and, indeed, has produced vital contributions towards the understanding of the polar regions. In this regard, we consider extremely important and significant that on this occasion Ministers of member countries of the Antarctic Treaty and the Arctic Council, gathered for the first time in a joint meeting, have adopted the Ministerial

Declaration of Washington on the International Polar Year and Polar Science. Peru welcomes the adoption of this Declaration, and expresses its intention, where possible and applicable, to guide its future scientific activities in Antarctica taking into account the recommendations contained in the Declaration.

Thank you very much Mr. President.

Statement by the Delegation of the Russian Federation

The Thirty-Second Antarctic Treaty Consultative Meeting is taking place in the year of the 50th anniversary of the signing of the Antarctic Treaty. This international legal act is a striking example of how states with different political and economic views can successfully cooperate in the pursuit of common goals and objectives while also observing their national interests.

As a result of the Treaty, Antarctica has become the first region on our planet to be declared a zone of peace, free from nuclear or any other type of weapon, where any measure of a military nature shall be prohibited.

Freedom of scientific investigation on the continent and efficient cooperation among scientists and experts across the world is another important achievement. Antarctic scientific research has given rise to many unique technologies currently applied in other areas of human activity: from new types of equipment to exploration of outer space and extraterrestrial objects.

The Antarctic Treaty and its complementary Madrid Protocol, together with the Convention on the Conservation of Antarctic Marine Living Resources and the Convention for the Conservation of Antarctic Seals, form a legal system that ensures protection of the region's unique environment in the interests of all humankind, and its preservation as a natural reserve devoted to peace and science.

Celebrating the 50th anniversary of the Treaty, we would like to remind that its adoption was facilitated by the efficient implementation of the International Geophysical Year (IGY) of 1957–1958. It was then that 12 countries established their research bases in Antarctica, and conducted land- and air-based expeditions to Antarctica's inland areas as well as ship-based expeditions around the continent. At that time, the Soviet Union addressed one of the most challenging logistic tasks and organized a network of year-round meteorological, glaciological and geophysical observations in inland East Antarctica, including the South Geomagnetic Pole and the Pole of Relative Inaccessibility.

It would be no exaggeration to say that large-scale international scientific cooperation during IGY, together with other factors, facilitated successful negotiations among the representatives of the 12 nations who came to an agreement on the Antarctic Treaty, one of the most essential instruments of modern international law.

Fifty years later, the International Polar Year once again united scientists from various countries to conduct extensive polar research, enabling them to make significant scientific discoveries and establish new interdisciplinary and international scientific relations. During this period, the Russian Federation restored a regular year-round observation network (established earlier by the Soviet Union) along the perimeter of the Antarctic continent; continued studies of subglacial Lake Vostok, a unique natural feature on which research was initiated in the 1990s; and obtained experimental data on the specifics of deep-water ocean circulation on the Antarctic continental slope.

These results made it possible to specify Antarctica's role and place in global climate change, the socioeconomic implications of which are increasingly apparent. Antarctica has a strong influence on the global climate system. At the same time, some regions in Antarctica are becoming increasingly dependent on global warming and pollutant input from the outside.

In this respect, we would like all Treaty Parties to pay attention to the initiative put forward at the 60th session of the World Meteorological Organization Executive Council: to launch an International Polar Decade. More accurate climate change forecast and sustainable socioeconomic development of the polar regions, as well as humankind, requires long-term systematic observations and enhanced scientific knowledge of the environment.

There is no doubt that a positive experience of political and scientific cooperation, mutual assistance and respect for each other's interests generated by the signatories to the Treaty over 50 years of its existence should be maintained and enhanced. The only way to achieve this is to ensure the

inviolability of the Antarctic Treaty legal regime, with strict observance of the Treaty objectives and principles. On the other hand, viability of the Antarctic Treaty System is based on its continuous development, as well as adaptation to new tasks and challenges. In this context, the Russian Federation is prepared for the closest possible cooperation with all Parties to the Antarctic Treaty.

Statement by Mr. Henry Valentine, head of the Delegation of South Africa

Chair,

On behalf of the South African delegation, I would like to congratulate you on your election as Chair of the Thirty Second Antarctic Treaty Consultative Meeting. We are confident that under your able guidance this meeting will be successful in achieving its objectives.

It is a particular pleasure for the South African delegation to be present in this beautiful city and at this attractive venue. We wish to express our gratitude to the Government of the United States of America for hosting the meeting and also for highlighting the role and activities of the Treaty through its Ministerial Declaration initiative.

As an original signatory to the Antarctic Treaty, South Africa looks forward towards making a positive contribution to the deliberations on the conservation of the Antarctic continent, at this meeting, which also commemorates the 50th Anniversary of the Treaty.

This Meeting has a number of important agenda items to address. South Africa considers, in light of the recent dramatic increase in tourist vessels visiting Antarctica, along with the establishment of more air bridges to the continent that the number of tourist visits and landings are bound to continue to grow. This along with the increase in the number of incidents and accidents involving tourist vessels over the past few summer seasons, is of concern. The issue of enhanced regulation of the Antarctic tourist industry is thus likely to be of special importance, and something towards which this Meeting should endeavour to make significant progress.

The South African delegation looks forward to a constructive meeting in which the work of achieving the objectives of the Treaty can be taken a step further and the Antarctic Treaty System, as it has developed, can be enhanced and strengthened.

Statement by Ambassador Helena Ödmark, Head of the Swedish Delegation

"Fifty Years of Peace and Science", is a well chosen theme for the ATCM XXXII. The 50th anniversary of the signing of the Antarctic Treaty is a milestone in international cooperation. There are important lessons to be learned from the uninterrupted period of excellent cooperation between the Parties to this Treaty.

The legal framework created by the Antarctic Treaty System is highly respected. it has achieved its objectives and nobody is challenging its relevance. The Antarctic region is today universally known as the only part of the world where states engage in peaceful cooperation and science is accorded priority.

Fifty years ago, things were different. The Cold War set the parameters for political relations between states. Climate change was not on any government´s agenda. Logistical resources and technical support for science in the Antarctic region was primitive compared to the facilities and equipment available to scientists today.

The Antarctic Treaty was visionary in its approach and has proven itself through shifting circumstances and changing times. It has provided guidance to the Parties on how to respond to new developments. The Madrid Protocol on environmental protection clearly demonstrates this.

Sweden commends the United States for the initiative to organize the first ever Joint Meeting of the ATCM and the Arctic Council in Washington D.C. on 6 April as a high level political segment at this ATCM. By devoting that meeting to both polar regions of the world, the Antarctic and the Arctic, a timely linkage was also established to the recently concluded "International Polar Year 2007-2008".

Sweden is honoured to have been invited to the Joint Meeting. We are a Party to the Antarctic Treaty and one of the eight Member States of the Arctic Council.

In the two Declarations that were adopted on 6 April, the participants reconfirmed their continued commitment to the objectives and purposes of the Antarctic Treaty and the other elements of the Antarctic Treaty System. That is a significant commitment. Sweden attaches great importance to that commitment.

The States that assembled in Washington on 6 April, have more to be proud of than their accomplishments in the Antarctic. Several of us are also cooperating closely in the Arctic through our membership or observership in the Arctic Council. There we have additional partners that give the Arctic Council a unique identity in the international cooperation context through the six Permanent Participants that represent the indigenous peoples of the Arctic region.

The successful conclusion of the "International Polar Year 2007-2008" is an important manifestation of international cooperation that provided additional reasons for celebration on 6 April. The IPY showed what could be achieved by the international scientific community with the support of governments when there was a focussed science program in place and an efficient support structure that promoted logistical, financial and scientific collaboration. During the IPY, scientists from over 60 countries cooperated with a view to do new things and to do them differently in order to obtain new knowledge and find answers to some of the large intriguing questions that fascinate and worry mankind.

There are similarities between the Antarctic and the Arctic. There are many common concerns, not least a wide range of scientific issues related to global warming and climate change variability. But there are also significant differences between the Antarctic and the Arctic that determine the way in which we may cooperate among states.

Our shared objectives in the Arctic region are to maintain peace and stability, preserve the environment and promote sustainable development. However, the Arctic as a whole can never be designated a "natural reserve, devoted to peace and science" as the Antarctic region was in the Madrid Protocol.

We cannot roll back history. The Arctic has been inhabited for thousands of years. Indigenous peoples were living there long before nation states laid claim to all northern land territories and determined their particular state boundaries. Today, we also have UNCLOS, the UN Convention on the Law of the Sea. Therefore, the common approach to responsible international governance in the Arctic that can be developed on the basis of experiences from this most recent IPY, will be different from the approach that was adopted for the Antarctic on the basis of experiences gained during the "International Polar Year 1957-1958", the International Geophysical Year.

Great challenges are facing the polar regions. There is so much that we still do not know. Global climate change may alter conditions quite substantially. And maybe quite quickly. Scientific research as well as long-term observations and monitoring remain our best tools to improve knowledge and understanding of what is happening.

The Antarctic Treaty Parties need to live up to expectations, assume their responsibility, adopt a visionary approach on the basis of 50 years of outstanding international cooperation to preserve the Antarctic region and take the action required to minimize the footprint from all human activities; science, logistical support, tourism as well as commercial fishing and bioprospecting. No type of human activity in the Antarctic should be exempt from proper scrutiny.

Sweden looks forward to fruitful discussions at this ATCM on these and other issues on our agenda under the able leadership of our Chairman.

4. Reports by Depositaries and Observers

Report of the Depositary Government of the Antarctic Treaty and its Protocol in accordance with Recommendation XIII-2

This report covers events with respect to the Antarctic Treaty and the Protocol on Environmental Protection.

In the past year, there has been one accession to the Protocol on Environmental Protection. Belarus acceded to the Protocol on July 16, 2008. There are forty-seven (47) Parties to the Treaty and thirty-three (33) 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
Finland	Amb. Holger Bertil Rotkirch	14 June 2006
India	Prof. Upendra Baxi	6 October 2004
	Mr. Ajai Saxena	6 October 2004
	Dr. N. Khare	6 October 2004
Japan	Judge Shunji Yanai	18 July 2008
Rep. of Korea	Prof. Park Ki Gab	21 October 2008
United States	Prof. Daniel Bodansky	1 May 2008
	Mr. David Colson	1 May 2008

Lists of Parties to the Treaty, to the Protocol, and of Recommendations/Measures and their approvals are attached.

Date of most recent action: May 31, 2008

The Antarctic Treaty

Done: Washington; December 1, 1959

Entry into force: June 23, 1961
In accordance with Article XIII, the Treaty was subject to ratification by the signatory States and is open for accession by any State which is a Member of the United Nations, or by any other State which may be invited to accede to the Treaty with the consent of all the Contracting Parties whose representatives are entitled to participate in the meetings provided for under Article IX of the Treaty; instruments of ratification and instruments of accession shall be deposited with the Government of the United States of America. Upon the deposit of instruments of ratification by all the signatory States, the Treaty entered into force for those States and for States which had deposited instruments of accession to the Treaty. Thereafter, the Treaty enters into force for any acceding State upon deposit of its instrument of accession.

Legend: (no mark) = ratification; **a** = accession; **d** = succession; **w** = withdrawal or equivalent action

Participant	Signature	Consent to be bound		Other Action	Notes
Argentina	December 1, 1959	June 23, 1961			
Australia	December 1, 1959	June 23, 1961			
Austria		August 25, 1987	**a**		
Belarus		December 27, 2006	**a**		
Belgium	December 1, 1959	July 26, 1960			
Brazil		May 16, 1975	**a**		
Bulgaria		September 11, 1978	**a**		
Canada		May 4, 1988	**a**		
Chile	December 1, 1959	June 23, 1961			
China		June 8, 1983	**a**		
Colombia		January 31, 1989	**a**		
Cuba		August 16, 1984	**a**		
Czech Republic		January 1, 1993	**d**		[1]
Denmark		May 20, 1965	**a**		
Ecuador		September 15, 1987	**a**		
Estonia		May 17, 2001	**a**		
Finland		May 15, 1984	**a**		
France	December 1, 1959	September 16, 1960			
Germany		February 5, 1979	**a**		[2]
Greece		January 8, 1987	**a**		
Guatemala		July 31, 1991	**a**		
Hungary		January 27, 1984	**a**		
India		August 19, 1983	**a**		
Italy		March 18, 1981	**a**		
Japan	December 1, 1959	August 4, 1960			
Korea (DPRK)		January 21, 1987	**a**		
Korea (ROK)		November 28, 1986	**a**		
Monaco		May 31, 2008	**a**		

Netherlands		March 30, 1967	**a**		[3]
New Zealand	December 1, 1959	November 1, 1960			
Norway	December 1, 1959	August 24, 1960			
Papua New Guinea		March 16, 1981	**d**		[4]
Peru		April 10, 1981	**a**		
Poland		June 8, 1961	**a**		
Romania		September 15, 1971	**a**		[5]
Russian Federation	December 1, 1959	November 2, 1960			[6]
Slovak Republic		January 1, 1993	**d**		[7]
South Africa	December 1, 1959	June 21, 1960			
Spain		March 31, 1982	**a**		
Sweden		April 24, 1984	**a**		
Switzerland		November 15, 1990	**a**		
Turkey		January 24, 1996	**a**		
Ukraine		October 28, 1992	**a**		
United Kingdom	December 1, 1959	May 31, 1960			
United States	December 1, 1959	August 18, 1960			
Uruguay		January 11, 1980	**a**		[8]
Venezuela		March 24, 1999	**a**		

[1] Effective date of succession by the Czech Republic. 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.

[2] The Embassy of the Federal Republic of Germany in Washington transmitted to the Department of State a diplomatic note, dated October 2, 1990, which reads as follows:

"The Embassy of the Federal Republic of Germany presents its compliments to the Department of State and has the honor to inform the Government of the United States of America as the depositary Government of the Antarctic Treaty that, t[h]rough 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 [A]ntarctic system.
"The Embassy would be grateful if the Government of the United States of America could inform all contracting parties to the Antarctic Treaty of the contents of this note.
"The Embassy of the Federal Republic of Germany avails itself of this opportunity to renew to the Department of State the assurances of its highest consideration."

Prior to unification, the German Democratic Republic deposited an instrument of accession to the Treaty, accompanied by a declaration, on November 19, 1974, and the Federal Republic of Germany deposited an instrument of accession to the Treaty, accompanied by a statement, on February 5, 1979.

[3] The instrument of accession to the Treaty by the Netherlands states that the accession is for the Kingdom in Europe, Suriname and the Netherlands Antilles; as of January 1, 1986, Aruba as a separate entity.

[4] Date of deposit of notification of succession by Papua New Guinea; effective September 16, 1975, the date of its independence.

[5] The instrument of accession to the Treaty by Romania was accompanied by a note of the Ambassador of the Socialist Republic of Romania to the United States of America, dated September 15, 1971, which reads as

follows:
"Dear Mr. Secretary:
"Submitting the instrument of adhesion of the Socialist Republic of Romania to the Antarctic Treaty, signed at Washington on December 1, 1959, I have the honor to inform you of the following:
'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.'
"I am kindly requesting you, Mr. Secretary, to forward to all parties concerned the text of the Romanian instrument of adhesion to the Antarctic Treaty, as well as the text of this letter containing the above mentioned statement of the Romanian Government.
"I avail myself of this opportunity to renew to you, Mr. Secretary, the assurances of my highest consideration."

Copies of the Ambassador's letter and the Romanian instrument of accession to the Treaty were transmitted to the Antarctic Treaty parties by the Secretary of State's circular note dated October 1, 1971.

[6] The Treaty was signed and ratified by the former Union of Soviet Socialist Republics. By a note dated January 13, 1992, the Russian Federation informed the United States Government that it "continues to perform the rights and fulfil the obligations following from the international agreements signed by the Union of Soviet Socialist Republics."

[7] Effective date of succession by the Slovak Republic. 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.

[8] The instrument of accession to the Treaty by Uruguay was accompanied by a declaration, a Department of State English translation of which reads as follows:
"The Government of the Oriental Republic of Uruguay considers that, through its accession to the Antarctic Treaty signed at Washington (United States of America) on December 1, 1959, it helps to affirm the principles of using Antarctica exclusively for peaceful purposes, of prohibiting any nuclear explosion or radioactive waste disposal in this area, of freedom of scientific research in Antarctica in the service of mankind, and of international cooperation to achieve these objectives, which are established in said Treaty.
"Within the context of these principles Uruguay proposes, through a procedure based on the principle of legal equality, the establishment of a general and definitive statute on Antarctica in which, respecting the rights of States as recognized in international law, the interests of all States involved and of the international community as a whole would be considered equitably.
"The decision of the Uruguayan Government to accede to the Antarctic Treaty is based not only on the interest which, like all members of the international community, Uruguay has in Antarctica, but also on a special, direct, and substantial interest which arises from its geographic location, from the fact that its Atlantic coastline faces the continent of Antarctica, from the resultant influence upon its climate, ecology, and marine biology, from the historic bonds which date back to the first expeditions which ventured to explore that continent and its waters, and also from the obligations assumed in conformity with the Inter-American Treaty of Reciprocal Assistance which includes a portion of Antarctic territory in the zone described in Article 4, by virtue of which Uruguay shares the responsibility of defending the region.

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)	May 24, 2002	
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

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** The following denotes date relating either to acceptance of Annex V or approval of Recommendation XVI-10Recommendation 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**	Dateof entry into force of Annex V
NON-CONSULTATIVE PARTIES						
Austria	Oct. 4, 1991					
Belarus			July 16, 2008	Aug. 15, 2008		
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, March 4, 2009.

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) Approved	10 Recommendations adopted at Fourteenth Meeting (Rio de Janeiro 1987) Approved	22 Recommendations adopted at Fifteenth Meeting (Paris 1989) Approved	13 Recommendations adopted at Sixteenth Meeting (Bonn 1991) Approved	4 Recommendations adopted at Seventeenth Meeting (Venice 1992) Approved	1 Recommendation adopted at Eighteenth Meeting (Kyoto 1994) 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,	ALL (except 12)	ALL (except 1)	ALL
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,	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) Approved	2 Measures adopted at Twentieth Meeting (Utrecht 1996) Approved	5 Measures adopted at Twenty-First Meeting (Christchurch 1997) Approved	2 Measures adopted at Twenty-Second Meeting (Tromso 1998) Approved	1 Measure adopted at Twenty-Third Meeting (Lima 1999) Approved
Argentina	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	ALL	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	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL	ALL	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL	ALL
Italy (1987)+	ALL	ALL			
Japan					
Korea, Rep. (1989)	ALL	ALL	ALL	ALL	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

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) Approved	3 Measures adopted at Twenty-Fourth Meeting (St. Petersburg 2001) Approved	1 Measure adopted at Twenty-Fifth Meeting (Warsaw 2002) Approved	3 Measures adopted at Twenty-Sixth Meeting (Madrid 2003) Approved	4 Measures adopted at Twenty-Seventh Meeting (Cape Town 2004) Approved
Argentina			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Australia	ALL	ALL	ALL	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Belgium	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	XXVI-2, XXVI-3	XXVII-1, XXVII-2, XXVII-3
Bulgaria (1998)+			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Chile	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
Ecuador (1990)+			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Finland (1989)+	ALL	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
France	ALL (except SATCM XII-2)	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1, XXVII-2 *, XXVII-3,
Germany (1981)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
India (1983)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
Italy (1987)+			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Japan			*	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
Korea, Rep. (1989)+	ALL	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Netherlands (1990)+	ALL	ALL	ALL	ALL	ALL
New Zealand	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **,
Norway		ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Peru (1989)+	ALL	ALL	ALL	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Poland (1977)+		ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	XXVI-1, XXVI-2, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
South Africa	ALL	ALL	ALL	ALL	ALL
Spain (1988)+			*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Sweden (1988)+	ALL	ALL	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
Ukraine (2004)+					XXVII-1 *, XXVII-2 *, XXVII-3 **
U.K.	ALL (except SATCM XII-2)	ALL (except XXIV-3)	ALL	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **,
Uruguay (1985)+	ALL	ALL (except XXIV-1 and XXIV-	*	XXVI-1, XXVI-2 *, XXVI-3	XXVII-1 *, XXVII-2 *, XXVII-3 **
U.S.A.	ALL	ALL	*	XXVI-1, XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **

"+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.

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 Twenty-Eighth Meeting (Stockholm 2005) Approved	**4 Measures adopted at Twenty-Ninth Meeting (Edinburgh 2006) Approved**	**3 Measures adopted at Thirtieth Meeting (New Delhi 2007) Approved**	**14 Measures adopted at Thirty-first Meeting (Kyiv 2008) Approved**
Argentina	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Australia	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Belgium	ALL except Measure 1	ALL	ALL	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Brazil (1983)+	ALL except Measure 1	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Bulgaria (1998)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Chile	ALL except Measure 1	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
China (1985)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Ecuador (1990)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Finland (1989)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
France	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Germany (1981)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
India (1983)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Italy (1987)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Japan	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Korea, Rep. (1989)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Netherlands (1990)+	ALL except Measure 1	ALL	ALL	ALL
New Zealand	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Norway	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Peru (1989)+	XXVIII-1, XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Poland (1977)+	ALL	ALL	ALL	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Russia	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
South Africa	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	ALL	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Spain (1988)+	XXVIII-1, XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Sweden (1988)+	XXVIII-1, XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Ukraine (2004)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
U.K.	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
Uruguay (1985)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *
U.S.A.	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **	XXXI-1*, XXXI-2*, . . . XXXI-14 *

"+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 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 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.
*** Modification of Appendix A to Annex II to the Protocol on Environmental Protection to the Antarctic Treaty deemed to have been approved in accordance with Article 9(1) of Annex II 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, March 11, 2009.

Report Submitted to Antarctic Treaty Consultative Meeting XXXII 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 2007 to 29 February 2008.

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 2008 – 2009 year will be submitted to ATCM XXXIII, once the June 2009 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. The UK would like to thank all Contracting Parties to CCAS for providing this information in time to enable the UK to submit a complete report to ATCM XXXII. The UK would, however, continue to encourage all Contracting Parties to CCAS to submit returns on time to ensure that all relevant information has been provided.

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).

April 2009

ANNEX A

CONVENTION FOR THE CONSERVATION OF ANTARCTIC SEALS (CCAS)

Synopsis of reporting in accordance with Article 5 and the Annex of the Convention: Capturing and killing of seals during the period 1 March 2007 to 29 February 2008.

Contracting Party	Antarctic Seals Captured	Antarctic Seals Killed
Argentina	218[a]	Nil
Australia	23[b]	3[c]
Belgium	Nil	Nil
Brazil	245[d]	Nil
Canada	Nil	Nil
Chile	1046[e]	Nil
France	141[f]	Nil
Germany	Nil	Nil
Italy	Nil	Nil
Japan	Nil	Nil
Norway	Nil	Nil
Poland	Nil	Nil
Russia	Nil	Nil
South Africa	Nil	Nil
United Kingdom	1398[g]	Nil
United States of America	960[h]	2[i]

[a] 198 Elephant Seals, 20 Leopard Seals
[b] 23 Leopard Seals
[c] 3 Leopard Seals
[d] 200 Southern Elephant Seals, 30 Antarctic Fur Seals, 5 Crabeater Seals, 5 Weddell Seals, 5 Leopard Seals
[e] 1037 Antarctic Fur Seals, 9 Leopard Seals
[f] 141 Weddell Seals
[g] 1376 Antarctic Fur Seals, 22 Leopard Seals
[h] 530 Antarctic Fur Seals, 20 Leopard Seals, 50 Southern Elephant Seals, 360 Weddell Seals
[i] 2 Weddell Seal pups

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

Report of the Depositary Government for the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)

Summary

A report is provided by Australia as depositary of the Convention on the Conservation of Antarctic Marine Living Resources 1980 on the status of the Convention.

Depositary report

Australia, as depositary of the Convention on the Conservation of Antarctic Marine Living Resources 1980 (the Convention) is pleased to report to the Thirty-second Antarctic Treaty Consultative Meeting on the status of the Convention.

Australia advises the Antarctic Treaty Parties that, since the Thirty-first Antarctic Treaty Consultative Meeting, no States have acceded to the Convention.

A copy of the status list for the Convention is available upon request to the Treaties Secretariat of the Australian Government Department of Foreign Affairs and Trade. Requests could be conveyed through Australian diplomatic missions, or via the internet on the Australian Treaties Database at the following internet address: < http://www.austlii.edu.au/au/other/dfat/treaty_list/depository/CCAMLR.html >.

Report of the Depositary Government for the Agreement on the Conservation of Albatrosses and Petrels (ACAP)

Summary

A report is provided by Australia as depositary of the Agreement on the Conservation of Albatrosses and Petrels 2001 on the status of the Agreement.

Depositary report

Australia, as depositary of the Agreement on the Conservation of Albatrosses and Petrels 2001 (the Agreement) is pleased to report to the Thirty-second Antarctic Treaty Consultative Meeting on the status of the Agreement.

Australia advises the Antarctic Treaty Parties that, since the Thirty-first Antarctic Treaty Consultative Meeting, two states have become Parties to the Agreement. Brazil ratified the Agreement on 3 September 2008 and Uruguay acceded on 9 October 2008.

A copy of the status list for the Agreement is available upon request to the Treaties Secretariat of the Australian Department of Foreign Affairs and Trade. Requests could be conveyed through Australian diplomatic missions, or via the internet on the Australian Treaties Database at the following internet address: http://www.austlii.edu.au/au/other/dfat/treaty_list/depository/consalbnpet.html.

Report by the CCAMLR Observer to the Thirty-Second Antarctic Treaty Consultative Meeting

Introduction

1. The Twenty-Seventh Meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)[1] was held in Hobart from 27 October to 5 November 2008. A number of routine matters were addressed along with notable specific issues, including:

- CCAMLR fisheries in 2007/08;
- Illegal, unreported and unregulated (IUU) fishing;
- Ecosystem monitoring and management ;
- Deep-sea bottom fishing;
- By-catch in longline and trawl fisheries;
- Marine Protected Areas;
- Co-operation with international organizations, particularly the ATCM, and
- Performance review of the organisation.

2. CCAMLR's deliberations on the issues identified in paragraph (1), and others, are summarised below. Emphasis is given to items that are particularly relevant to the ATCM XXXII and CEP XII agendas. An overall summary of important discussions and decisions from CCAMLR XXVII is provided in Appendix I along with references to the meeting's report paragraphs.

CCAMLR Fisheries in 2007/08

3. Fisheries in the CAMLR Convention Area during 2007/08 (1 December 2007 to 30 November 2008) targeted Patagonian and Antarctic toothfish (*Dissostichus eleginoides* and *D. mawsoni*), mackerel icefish (*Champsocephalus gunnari*) and krill (*Euphausia superba*). The 2007/08 catches reported to CCAMLR-XXVII were interim catches, and the revised amounts will be published in Volume 21 of the *CCAMLR Statistical Bulletin* (http://www.ccamlr.org/pu/e/e_pubs/intro.htm).

4. Based on the data available at the time of writing, the reported catch of *Dissostichus* spp. in 2007/08 (to 30 November 2008) was 12573 tonnes, taken predominantly by longlining, compared to 16329 tonnes in the previous season (1 December 2006 to 30 November 2007). It is estimated that, in addition to reported catches, some 1169 tonnes of *Dissostichus* spp. were taken as a result of IUU fishing in the Convention Area during 2007/08, compared with 3615 tonnes in 2006/07. The total global catch for *Dissostichus* spp. in 2007/08 was estimated at 24 033 tonnes at 1 October 2008, compared with 26 722 tonnes for the corresponding interval the previous season. For further discussion on IUU fishing, please refer to CCAMLR-XXVII, paragraphs 10.1 to 10.4 (paragraphs 11 to 13 below).

5. The reported krill catch in 2007/08 (to 30 November 2008) was 125 992 tonnes compared with 104 586 tonnes in the previous season. The reported catch in 2007/08 was well below the notified catch (i.e. the catch predicted on the basis of mandatory notifications of the intention to fish for krill in the forthcoming season) of 684 000 tonnes (CCAMLR-XXVI, paragraph

[1] The Convention on the Conservation of Antarctic Marine Living Resources is usually referred to as the "CAMLR-Convention"

4.34). Annual catches of krill have generally remained in a relatively stable range (80 000 to 120 000 tonnes) since 1992/93

6. As in previous years, the discrepancy in reported and notified krill catches for 2007/08 remains a cause for concern (see paragraph 5 above).

7. The notified krill catches for 2008/09 were 629 000 tonnes - in excess of five times the current catch level. The catches notified for 2007/08 and 2008/09 are also higher than the catch trigger level above which there is a mandatory requirement to spatially subdivide the precautionary catch limits for krill in Area 48 CCAMLR Conservation Measure 51-01).

8. Once again, CCAMLR has noted that the krill fishery's pattern of operation is changing and this emphasizes the need to obtain sufficient information from the current fishery to meet future management needs. This is vital should the fishery increase and/or become concentrated in any particular region or subarea, including small-scale management units (SSMUs). To this effect the Commission is focusing on orderly development of the krill fishery, improvement of the krill fishery notification system, systematic scientific observer coverage and ensuring that the catch trigger level in Area 48 is not exceeded until a method to sub-divide allowable catches is developed and implemented.

9. The Commission adopted conservation measures (CMs) for all fisheries to be conducted in the 2008/09 season, as well as general measures for regulating fishing activities and reporting fisheries information from the Convention Area. The most notable new CMs provide for notification of transhipments (CM 10-09) and improving management of bottom fishing to protect benthic communities in the CAMLR Convention Area, along with elaboration of procedures to identify VMEs (Vulnerable Marine Ecosystems) (CM 22-07) and close areas to fishing where these are detected. All measures are published in the *Schedule of Conservation Measures in Force 2008/09* available from the CCAMLR Secretariat or the website: http://www.ccamlr.org/pu/e/e_pubs/cm/08-09/toc.htm.

10. In addition to the Catch Documentation Scheme (CDS) for *Dissostichus* spp. and CMs to manage specific fisheries directly (e.g. the setting of catch limits and other conditions affecting fishing), other CCAMLR measures include:

- The CCAMLR System of Inspection;
- Interim prohibition on deep-sea gillnetting and restrictions on use of bottom trawling gear;
- Prohibition of longline fishing in waters shallower than 550m;
- General environmental protection during fishing;
- 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;
- Promoting compliance with CCAMLR CMs by Contracting Party nationals
- 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", (j) a "Non-Contracting Party Co-Operation Programme", (k)

"International actions to reduce the incidental mortality of seabirds arising from fishing", (l) "Tariff Classification for Krill", and (m) "Ballast Water Exchange in the Convention Area".

Illegal, Unregulated and Unreported (IUU) Fishing

11. IUU fishing for *Dissostichus* spp. in the Convention Area has been a major issue for the Commission since 1997. CCAMLR affords high priority to eliminating such fishing and implements an integrated suite of administrative, political and enforcement-related measures to address the problem consistent with international best practice.

12. CCAMLR's efforts to combat IUU fishing continue to take place against a background of ongoing and vigorous action by individual CCAMLR Contracting Parties in areas under their national jurisdiction.

13. CCAMLR has requested its Members to increase surveillance in the Convention Area, particularly in Indian Ocean Statistical Divisions 58.4.1, 58.4.2 and 58.4.3b.

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" which can be found at http://www.ccamlr.org/pu/e/sc/fish-monit/iuu-vess.htm along with a list of vessels licensed by CCAMLR Members to fish in CCAMLR waters (http://www.ccamlr.org/pu/e/sc/fish-monit/vess-licensed.htm). CCAMLR uses a centralized, satellite-based vessel monitoring system (c-VMS) to monitor the movements of fishing vessels in the Convention Area. This system greatly facilitates surveillance of licensed vessels.

15. CCAMLR continues to interact with other international and regional fisheries organisations, especially those with responsibility for waters adjacent to the Convention Area. Such interaction includes the exchange of information on issues such as IUU fishing, seabird incidental mortality and other matters relevant to CCAMLR. In this regard, CCAMLR has entered into a co-operation arrangement with the Western Central Pacific Fisheries Commission (WCPFC).

Ecosystem Monitoring and Management

16. The *CCAMLR Ecosystem Monitoring Programme* (CEMP) collects long-term data on various Antarctic marine ecosystem components as well as the environment. These data are used to provide annual assessments of ecosystem status.

17. The Commission follows scientific advice in estimating krill precautionary catch levels and on other ecosystem-related factors to be used in applying the conservation principles set out in Article II of the Convention.

18. The CCAMLR scientific community is exploring ways in which ecosystem advice can be formally incorporated into management decisions. In this respect, the Commission has afforded high priority to:

- On-going development of management procedures to allocate the precautionary krill catch limit in the Southwest Atlantic (Area 48) to SSMUs;
- Implementation of a systematic scientific approach to avoiding and mitigating significant adverse impacts on VMEs arising from fishing activities (paragraph 9 above);
- Further development of ecosystem models to take into account the complex interactions between predators, target species and fisheries other than the krill fishery (following a workshop in June 2008 to provide abundance estimates of land-based predators and a joint workshop with the International Whaling Commission (IWC) in August 2008 to consider Antarctic ecosystem model inputs), and
- The Scientific Committee considering how to address the issue of climate change in relation to conservation of Antarctic marine living resources within its agenda.

It should be stressed that progress on the VME issue forthcoming from CCAMLR-XXVII is both unprecedented and sets CCAMLR apart from, and in advance of, such progress elsewhere in respect to the 31 December 2008 deadline imposed by UNGA Resolution 61/105.

19. CCAMLR continues to monitor marine debris washed up on beaches, the entanglement of marine mammals and marine debris associated with seabird colonies in the Convention Area.

By-Catch in Longline and Trawl Fisheries

20. CCAMLR continues to 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), 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). A number of CCAMLR Members have developed and implemented national plans of action to address seabird by-catch issues. Such initiatives have thus resulted in the development of close ties between CCAMLR and ACAP (*Agreement on the Conservation of Albatrosses and Petrels*).

21. Compliance with CCAMLR seabird by-catch mitigation measures has improved to the extent that incidental catch levels in regulated fisheries in the Convention Area are extremely low or near zero in areas where best practice has been applied. However, the levels attributable to IUU fishing remain a cause for concern. In addition, many bird species breeding in the Convention Area (particularly albatrosses and petrels) remain affected by high levels of mortality associated with longline fishing in waters outside the Convention Area.

22. CCAMLR Resolution 22/XXIII remains as an important initiative in efforts to reduce incidental mortality of Convention Area seabirds in adjacent areas.

23. CCAMLR continues to exchange information with other international fisheries and conservation organizations (most notably ACAP) on the prevention of fisheries-induced seabird by-catch and the state of Antarctic seabird populations. This includes exchanging information on CCAMLR's 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, CCSBT and WCPFC) in an effort to secure 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.

24. 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. Various CCAMLR CMs have been agreed, and were updated, to address incidental mortality mitigation and other fisheries by-catch issues. These are contained in the *Schedule of CCAMLR Conservation Measures 2008/09* at http://www.ccamlr.org/pu/e/e_pubs/cm/08-09/toc.htm).

Protected Areas (Including Marine Protected [MPAS])

25. CCAMLR implements streamlined administrative procedures introduced by the CCAMLR Secretariat in 2007 to ensure that ATCM proposals for protected areas with marine components are speedily reviewed by CCAMLR following ATCM Decision 9 (2005).

26. The CCAMLR Scientific Committee is progressing implementation of spatial management measures to facilitate marine biodiversity conservation (SC-CAMLR-XXVII, Annex 4, paragraphs 3.1 to 3.78). It also continues to discuss MPAs as a key item of business (SC-CAMLR-XXVII, paragraph 3.55) in the development of a clear process for developing such areas concurrent with an ongoing scientific process to identify where they should be located.

27. In the above respect, it is worth noting that previous discussions by CCAMLR and the CEP have concluded that a system of marine areas for biodiversity conservation in the Southern

Ocean should be addressed as a matter of priority (CCAMLR XXIII, paragraph 4.13; CEP-IX, paragraph 94 to 101). CCAMLR has noted that benthic and pelagic bioregionalisations developed by the 2007 *CCAMLR Bioregionalisation Workshop* is adequate for this work and used the *Workshop* outcomes to identify suitable areas for consideration as candidate MPAs.

CCAMLR Performance Review

28. Since 1996, CCAMLR has formally addressed implementation of the Convention's objectives on its agenda. A symposium, co-sponsored by Australia and Chile, in 2005 to discuss CCAMLR's future was a major development in this regard. A number of general and specific initiatives were proposed with a view to improving CCAMLR's effectiveness and operational efficiency.

29. In 2008, following developments at COFI-27 and in UNGA Resolution 61/105, CCAMLR-XXVI agreed to undertake a review of the institution's performance. The terms of reference, work plan, performance criteria for the review and its report are accessible at: http://www.ccamlr.org/pu/E/00-Prfrm-Review-for-public-webpage.pdf . The Commission's deliberations on the *CCAMLR Performance Review* may be found in CCAMLR-XXVII, paragraphs 17.1 to 17.18.

30. The following items are likely to be of particular interest to the ATCM:

- The Commission appreciated that the Scientific Committee has requested its incoming Chair to form a Steering Committee to develop a 'roadmap' (plan of action) to tackle the Review Panel's recommendations during the 2008/09 intersessional period;
- CCAMLR is the first organisation of its type to undertake and respond to such a Performance Review in the context of the Convention's objectives relating to both the conservation and rational utilisation of marine living resources, and
- The Commission generally endorsed the Performance Review Panel's view (CCAMLR-XXVII/8, Chapter 2.1) on the relationship between CCAMLR and the Antarctic Treaty. It noted in particular the need to reinforce the obligations set out in Articles III, V (and IV.1) of the Convention. The Commission also noted that implementing these recommendations into Commission decisions would require formal presentation of detailed proposals by Members.

In respect to the third point above, Australia as the CAMLR Convention Depository will develop text to address the *CCAMLR Review Panel* recommendation (paragraph 2.1.1a) on 'the need to bring to the attention of an Acceding State, or a State seeking accession, to the CCAMLR Convention the particular Convention articles linking the Convention with the Antarctic Treaty'(CCAMLR-XXVII, paragraph 17.15). The CCAMLR Secretariat will also prepare an information pack on CCAMLR and its links to the Antarctic Treaty to be made available to Acceding States, and other States indicating an interest in CCAMLR.

Co-Operation with Non-Contracting Parties

31. To implement its CDS, CCAMLR has worked closely with various Non-Contracting Parties (NCPs) considered to have an interest in CCAMLR's work, or in the resources that the latter manages. This has included inviting NCPs to attend and participate in CCAMLR meetings. CCAMLR is also actively engaged in improving dialogue with NCPs to address their potential involvement in IUU fishing undermining CCAMLR CMs. This is achieved through *CCAMLR's Policy to Enhance Cooperation between CCAMLR and Non-Contracting Parties* aimed at improving the effectiveness of CCAMLR-NCP cooperation. The *Policy* includes a cooperation enhancement program.

Co-Operation with Other International Organizations

32. CCAMLR continues to urge its Members to accept and ratify a number of relevant international agreements, such as ACAP. 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 (particularly in relation to combating both IUU fishing and seabird by-catch during longlining). CCAMLR encourages its Members to cooperate in a comprehensive and integrated international approach to such problems.

33. FAO is a key international organization explicitly referred to in CAMLR Convention Article XXIII as being one with which CCAMLR should cooperate. Both the Commission and Scientific Committee 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 Secretariat Network* and the *Fisheries Resources Monitoring System* (FIRMS) in particular.

34. CCAMLR stands as the leading example of global best practice in addressing marine fisheries conservation issues.

Co-Operation with the ATCM

35. CCAMLR-XXVII again expressed satisfaction with the growing co-operation between CCAMLR and the ATCM/CEP, noting that the Chair of the CEP had served as a member of the *CCAMLR Performance Review Panel*.

36. While there were no decisions or resolutions of direct relevance to CCAMLR-XXVII arising from CEP-XI or ATCM-XXXI, CCAMLR noted that:

- Considerable interest was expressed by the CEP in the outcomes of the *CCAMLR Performance Review*;
- A presentation on the work of CCAMLR given to CEP-XI had been well received;
- Scientific Committee deliberations on a Joint CEP-SC-CAMLR Workshop had provided draft Terms of Reference (SC-CAMLR-XXVII, paragraphs 9.9 to 9.17) and a work plan for a Workshop Steering Committee. The Commission agreed that the Workshop will be held in early April 2009, immediately prior to CEP XII in Baltimore, USA (SC-CAMLR-XXVI, paragraph 6.18);
- CCAMLR Resolution 28/XXVII (see paragraph 10 above) will extend application of IMO Resolution MEPC.163(56) to the entire CAMLR Convention Area (CCAMLR-XXVII, paragraphs 13.65 to 13.66 and 15.14), and
- The CCAMLR Science Officer will accompany the new Chair of the CCAMLR Scientific Committee to the CEP in order to improve institutional continuity between the CEP and CCAMLR.

Appendix 1

CCAMLR-XXVII References for Topics & Decisions

The CCAMLR-XXVII report is downloadable from:

(http://www.ccamlr.org/pu/e/e_pubs/cr/08/toc.htm).

Topics & Decisions	CCAMLR-XXVII Paragraphs
1. General Fishery Matters	
1.1 Fisheries Catches in 2007/08	4.30, 4.34-4.35
1.2 Fishery Regulation Measures 2008/09	13.3-13.5, 13.7-13.10, 13.18, 13.19, 13.30, 13.35, 13.37, 13.39, 13.48, 13.53-13.54, 13.56, 13.59, 13.6013.63, 13.64
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1.7 Tariff Classification for Krill	13.65
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4.1 Krill Ecosystem-Based Management	4.8-4.12
4.2 Incidental Mortality Seabird/Mammals	6.5-6.26
4.3 Marine Debris	6.1-6.4
4.4 Joint CCAMLR-IWC Workshop	4.7
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COMNAP Report to ATCM XXXII

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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* on behalf of their respective governments, all Parties to the Antarctic Treaty.

It has now grown into an international organisation bringing together the National Antarctic Programs from 29 Antarctic Treaty Parties from Africa (1), the Americas (8), Asia (4), Australasia (2) and Europe (14).

COMNAP has just adopted for its 20th anniversary a new constitution and a new way of working.

The new constitution clarifies and reasserts COMNAP's purpose, t*o develop and promote best practice in managing the support of scientific research in the Antarctic,* and reasserts its close connection with the Antarctic Treaty.

The new constitution and way of working provide renewed focus and guidance and are designed to put COMNAP in a better position to address new, upcoming challenges.

Supporting Science

What National Antarctic Program managers have in common is their national responsibility to manage the support of scientific research in the Antarctic Treaty Area on behalf of their government and in the spirit of the Antarctic Treaty. This is what brings them together in COMNAP and, hence, what they want to help each other with.

Increased ambitions – in particular in relation to climate change research, different and more sophisticated science and more demanding environmental measures contribute to added pressure on National Antarctic Programs, and to an even greater need for international collaboration.

COMNAP has recognised a greater need for collaborative support, and is addressing it.

Supporting the Antarctic Treaty System

COMNAP was in 1991 given the status of Observer at Antarctic Treaty Consultative Meetings, alongside CCAMLR and SCAR.

COMNAP has since remained committed to serve its role in the Antarctic Treaty System and in the protection of the Antarctic environment by providing objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.

COMNAP has also progressively assumed a number of practical tasks and functions that previously were, or would have been, undertaken by the Treaty Parties directly or by other organisations. Some of these tasks and functions remain formally assigned to those through various ATCM measures that are still current.

In particular, COMNAP maintains a range of information of practical use to many in the Antarctic Treaty System, and which include and go beyond a range of information that Parties are required to exchange under the Treaty. Every effort is made to ensure this information can easily be used by the Parties to fulfil their information exchange requirements.

This COMNAP Annual Report to the ATCM provides an overview of COMNAP's current activities, with an added focus on their relevance to the Antarctic Treaty System. Particular topics may also be complemented by a formal, standalone paper.

2. Focus

COMNAP's current focus is on:

- Safety
- Efficiency
- Collaborative support to science
- Environmental management and protection

3. COMNAP activities relevant to Antarctic Treaty System work and concerns

3.1 New COMNAP constitution

For its 20th anniversary, COMNAP adopted at COMNAP XX (St Petersburg, Russia, 29 June to 04 July 2008) a new, simple and clear constitution.

It clarifies and reasserts COMNAP's purpose as:

To develop and promote best practice in managing the support of scientific research in Antarctica, by

- *Serving as a forum to develop practices that improve effectiveness of activities in an environmentally responsible manner;*
- *Facilitating and promoting international partnerships;*
- *Providing opportunities and systems for information exchange; and*
- *Providing the Antarctic Treaty System with objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.*

It also confirms COMNAP's close connection with the Antarctic Treaty by reasserting the long-standing principles that:

- COMNAP membership is only open to those with national responsibility for managing the support of scientific research in the Antarctic Treaty Area on behalf of their respective governments, which must have signed the Antarctic Treaty and ratified its Protocol on Environmental Protection; and
- COMNAP like the ATCM generally follows the principle of consensus, as the way to reach an opinion or position developed by a group as a whole.

The new COMNAP constitution provides renewed guidance and will assist in developing a number of strategic objectives.

For further information, see: ATCM XXXII-IP078 *COMNAP's 20 years: a New Constitution and a New Way of Working to Continue Supporting Science and the Antarctic Treaty System* (Baltimore, 2009)

3.2 New COMNAP way of working

In conjunction with the new Constitution, COMNAP adopted in St Petersburg a new way of working so that it will be better placed to address new, upcoming challenges.

COMNAP will now be a more strategic, project-oriented organisation, defining a small number of strategic projects and each time finding the best people to deliver a result within a defined, limited timeframe.

We no longer operate through a range of formal Working Groups, Committees and Networks with their large membership of national representatives. The valuable communication channels with, and between, experts in each field are maintained through simple topic-based mailing lists and new information sharing systems.

COMNAP Annual General Meetings will become shorter and more focused, with the plenary given targeted presentations on strategic projects and topics, followed by discussions and consideration of relevant proposals put forward by the project teams.

Development and implementation of this new way of working is in progress. New rules of procedure have been developed and will be reviewed and confirmed at the next COMNAP Annual General Meeting in August 2009 in Punta Arenas, Chile.

For further information, see: ATCM XXXII-IP078 *COMNAP's 20 years: a New Constitution and a New Way of Working to Continue Supporting Science and the Antarctic Treaty System* (Baltimore, 2009)

3.3 Towards better Search and Rescue (SAR) coordination and response in the Antarctic

Under international maritime and aeronautical agreements, Rescue Coordination Centres (RCCs) of five countries (Argentina, Australia, Chile, New Zealand and South Africa) share responsibility for the coordination of Search and Rescue (SAR) over the Antarctic region.

A description of SAR arrangements and systems in place was provided by COMNAP in 2008 in ATCMXXXI-IP099 *Search and Rescue in the Antarctic*. This paper and other SAR-related resources are available on the COMNAP web site's SAR section at www.comnap.aq/sar.

Antarctic RCCs and operators have worked together for a long time, though links have often remained informal and on a mostly national level. The situation continues to evolve positively with stronger links being forged.

The current increase in maritime and air traffic can be of concern in relation both to the capability to respond and to the possible impact on National Antarctic Programs. Of particular concern are very large passenger vessels – their rescue would require considerable assets and resources and could cause major disruptions to nearby stations and vessels and the research programmes they support.

In response to these concerns, COMNAP and RCC authorities decided to convene a workshop to:

- Improve understanding of the nature and activities of RCCs and National Antarctic Programs, and how they can work together;
- Review the nature of maritime, aeronautical and land traffic in the Antarctic region and the challenges it poses for Search and Rescue; and
- Explore options for improved Search and Rescue coordination and response in the Antarctic.

The workshop, *Towards Improved Search and Rescue Coordination and Response in the Antarctic*, was held in Valparaiso / Viña del Mar, Chile, 12-14 August 2008. It was hosted by the Chilean Directorate General of the Maritime Territory and Merchant Marine (DIRECTEMAR) in collaboration with COMNAP.

The workshop focused on practical issues in an open and collaborative spirit and was very productive. The full report of the workshop outlining key discussions and outcomes is provided at Annex B of ATCM XXXII-WP047 *Towards Improved Search and Rescue Coordination and Response in the Antarctic* (Baltimore, 2009).

Discussions centred on the following key topics: Links between RCCS; Links between RCCs and National Antarctic Programs; Links between RCCs and their national Antarctic agencies; Contact list and communication protocols; Information on potential rescue assets; Ship position reporting; Advance schedules; Library of information; Land SAR; Long Range Identification and Tracking (LRIT); Automatic Identification Systems (AIS); and Prevention.

Discussions were assisted by the development and review of three hypothetical SAR scenarios (refer Appendix 2 of the workshop report): Large passenger vessel evacuation off Antarctic Peninsula; Commercial airliner crash landing in Mary Bird Land; Dronning Maud Land Air Network (DROMLAN) – hard landing of big cargo aircraft at snow compacted runway.

Workshop participants adopted a number of Recommendations and decided on a range of Actions to be progressed over the following year (Refer Appendix 1 of the workshop report). An outline progress/status report on Actions is provided at Annex A of WP047.

Workshop participants adopted a number of Recommendations directed to Antarctic Treaty Consultative Parties. WP047 invites the ATCM to consider the adoption of a Resolution incorporating these Recommendations, which relate to:

- recognising the importance for Search and Rescue of
  - maintaining up to date information on ground facilities, ships and aircraft;
  - providing advance information on ship and aircraft schedules; and
  - communicating ship positions to the relevant RCC
- resolving that all Antarctic ships should, as far as possible, report their position to at least one of the 5 relevant Maritime RCCs
- encouraging ships to liaise with vessels they encounter in the Antarctic Treaty area to promote the use of position reporting systems.

A follow up workshop will be reconvened in July/August 2009, in particular to expand on land SAR.

For further information, see: ATCMXXXI-IP099 *Search and Rescue in the Antarctic* (Kyiv, 2008) and ATCM XXXII-WP047 *Towards Improved Search and Rescue Coordination and Response in the Antarctic* (Baltimore, 2009)

3.4 COMNAP Ship Position Reporting System (SPRS)

The COMNAP Ship Position Reporting System (SPRS – www.comnap.aq/sprs) has been operational since 2001. It is an optional, voluntary system for exchange of information about National Program ship operations and capabilities. Its primary purpose is to facilitate collaboration between National Programs.

The SPRS cannot, and does not, constitute an operational alert and rescue system on which vessels should count in case of emergency. However it can make a very useful contribution to safety with all SPRS information made available to the Rescue Coordination Centres (RCCs) which cover the Antarctic region, as an additional source of information complementing all other national and international systems in place.

The SPRS has been the subject of a recent, significant overhaul that has extended its capabilities and improved ease of use and access to information. Latest positions and other practical information of all participating vessels are broadcast to each of these vessels and their National Program every time they send a position report, and is broadcast every 24h to relevant Antarctic Search and Rescue authorities. All information is also available at any time to National Antarctic Programs and Search and Rescue authorities through the password protected section of the COMNAP web site.

3.5 Review of the Antarctic Flight Information Manual (AFIM)

The Antarctic Flight Information Manual (AFIM) is a handbook of aeronautical information published by COMNAP as a tool towards safe air operations in Antarctica as recommended by the ATCM in Recommendation XV-20 *Air safety in Antarctica* (Paris, 1989).

An in-depth review of the AFIM is under way as one of COMNAP's 2008-2009 strategic projects, following presentation of a comprehensive discussion paper at COMNAP XX (St Petersburg, 2008). Aspects covered by the review include:

- the structure of the information and its relation to International Civil Aviation Organisation (ICAO) formats and standards;
- the management of the updating and publishing process;
- suitability to the needs and requirements of its various users – including pilots, station personnel, managers and Search and Rescue authorities;
- implementation of a parallel electronic version of the AFIM.

The results of the review, and proposals for improving the AFIM, will be presented to COMNAP at its next Annual General Meeting in August 2009 in Punta Arenas, Chile.

It must be noted that the information contained in the AFIM includes and go beyond information that Parties are required to exchange under a number of Treaty provisions, in particular under Resolution 6 (2001). Management of the AFIM through its electronic version will when appropriate allow simple and reliable exchange of relevant AFIM information with the Antarctic Treaty's Electronic Information Exchange System (EIES). This will significantly reduce duplication of efforts and prevent mismatch of data between systems.

3.6 Antarctic Telecommunications Operators Manual (ATOM)

The Antarctic Telecommunications Operators Manual (ATOM) is an evolution of the *handbook of telecommunications practices* that ATCM Recommendation X-3 (Washington, 1979) invited SCAR to prepare. Recommendation X-3 became effective 08-Apr-1987 and remains effective.

Antarctic telecommunications have shifted from HF radiocommunications to satellite communications integrated in the worldwide public switched telephone system and the internet network. The essential, useful part of the ATOM has become an 'Antarctic communications directory' of direct telephone, fax and email contacts.

The ATOM is being rejuvenated and expanded as part of its migration to the new COMNAP "InfoX" electronic information exchange system. It is more consistent in its format and notations. As far as possible it uses and complies with standard, international notations and conventions – in particular Recommendations from the International Telecommunication Union (ITU – www.itu.int) such as ITU-T Rec. E.123 Notation for national and international phone numbers, e-mail addresses and web addresses. This ITU Recommendation and other resources for interoperability are available on the COMNAP web site at www.comnap.aq/interoperability.

Importantly, it is no longer limited to stations and ships. It now also includes contact details for National Antarctic Programs, Search and Rescue authorities and a number of other stakeholders.

The first version of this 'New ATOM' directory was released in December 2008. COMNAP members and Search and Rescue authorities have access to the latest version at www.comnap.aq/atom (login required). It will also soon be available on the password protected section of the Antarctic Treaty Secretariat's web site.

3.7 Accident, Incident and Near-Miss Reporting (AINMR)

Information on problems encountered in Antarctica has always been exchanged. The very first ATCM recommended in Recommendation I-VII (Canberra, 1961) *that Parties undertake exchange of information on logistics problems*; This Recommendation became effective 30-Apr-1962 and remains effective.

A new, comprehensive Accident, Incident and Near-Miss Reporting (AINMR) system is being designed as part of one of COMNAP's 2008-2009 strategic projects.

The AINMR's primary objective is:

- to capture outline information about events that
  - had, or could have had, serious consequences; and/or
  - reveal lessons to be learned; and/or
  - are novel, very unusual events;
- so that National Antarctic Programs can learn from each other to reduce the risk of serious consequences occurring in the course of their activities.

This is developed as a tool to learn and is NOT meant to be a register of all serious events that have occurred. “events” here include accidents, incidents and near-misses. These can be real (events that happened) or simulated (exercises).

The AINMR will need to incorporate and/or replace two existing COMNAP reporting systems:

- The Environmental Incident Reporting System – EIRS.

- The Oil Spill reporting format and mechanism introduced through the Guidelines for the Reporting of Oil Spill Incidents Which Occur in Antarctica (CGN 04/1993) approved by COMNAP June 1993 and later endorsed by the ATCM through Resolution 6 (1998). This is now incorporated into the COMNAP Fuel Manual first presented to ATCM in ATCMXXI-IP091 *The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica*. (Kyiv 2008)

The AINMR will also, as much as possible, be compatible with relevant Antarctic Treaty reporting requirements so as to reduce work load and maximise the chances of reports being submitted. This includes some of the annual reporting requirements under Article 17 of the Environment Protocol, such as:

- Flora and fauna "taking", "harmful interference" and "introduction of species". This is required by Article 6 of Annex II of the Protocol.
- Notice of activities undertaken in cases of emergency (Annex IV, Article 7.2)
- Information on change or damage to an Antarctic Protected Area - ASPA, ASMA or HSM (Annex V – Article 10.1.b)

The design and implementation plan for the new AINMR will be presented to COMNAP at its next Annual General Meeting in August 2009 in Punta Arenas, Chile.

3.8 Hydrographic surveying using ships of opportunity

Hydrographic surveying and charting have been the subject of four ATCM recommendations adopted between 1989 and 2008: Recommendation XV-19 (1989), Resolution 1 (1995), Resolution 3 (2003) and Resolution 5 (2008).

The waters of the Southern Ocean around Antarctica represent one of the most challenging marine regions on the globe, and also one of the most fragile. The International Hydrographic Organisation (IHO) estimates that less than 1% of these waters within the 200m contour has been adequately surveyed to meet the needs of contemporary shipping entering Antarctic waters. The channels and approaches to bases around the Antarctic Peninsula have seen the most intensive effort, yet even here some 60% of the area within the 200m contour has never been systematically surveyed, whilst the remainder needs re-survey.

Hydrographic activity is expensive and assets are scarce. Coordination of international effort is of the utmost importance.

The IHO's Hydrographic Committee on Antarctica (HCA) brings together the national hydrographic offices of 22 Antarctic Treaty Parties. It promotes technical co-operation and exchange of information, and stimulates its members to widen hydrographic activity in the region.

A need was identified for more information on how hydrographic surveys could be conducted using ships of opportunity – without this, it was very difficult to understand if and how National Programs could assist.

As one of its 2008-2009 strategic projects, COMNAP is working with the HCA to develop guidelines for collection of hydrographic data by ships of opportunity operating in the Antarctic.

These guidelines will be presented to COMNAP at its next Annual General Meeting in August 2009 in Punta Arenas, Chile. This will include a keynote presentation by the HCA.

For further information, see: ATCMXXX-IP050 *International coordination of hydrography in Antarctica: significance to safety of Antarctic ship operations* (Delhi, 2007).

3.9 Information Exchange

The re-developed COMNAP 'infoX' electronic information exchange system manages a range of dynamic information on National Program capabilities and activities including stations, airfields, ships, medical facilities, monitoring activities, operational contact details or ship position reports. This

includes and goes beyond information that Parties are required to exchange under a number of Treaty provisions, in particular under Resolution 6 (2001).

The primary objective of the system is to facilitate exchange of relevant information between National Programs with a view to facilitating partnerships, increasing efficiencies and, very importantly, increasing our capability to support new or smaller Programs.

The system provides a framework to collect, manage, manipulate and explore this information, but also to exchange it with the Antarctic Treaty Secretariat's Electronic Information Exchange System (EIES) and other systems.

Close cooperation over the last few years between the Antarctic Treaty and COMNAP secretariats has resulted in a coordinated development of both sides' information systems with a view to avoiding duplication. It will be possible for Parties, with just a few clicks, to export relevant information maintained on the COMNAP systems to the Antarctic Treaty Secretariat systems for the purpose of meeting their exchange of information obligations under the Antarctic Treaty.

3.10 Mapping Products

Paper maps

COMNAP produced in 2006 a large format 'wall map' of Antarctica showing the main facilities operated by National Antarctic Programs, together with a range of reference information. A smaller, 'folding map' version was also produced with several thousand copies distributed.

A simplified, semi-automated process can now be used to update the wall map and the folding map at regular interval – for example annually.

The wall map can now be made available to National Programs in electronic form in a way that makes it easy for them to customise the map as needed. This is supported by the release of the map under a Creative Commons 'Attribution - Share Alike' license that promotes the distribution and re-use of the work while protecting the rights of contributors. For more details, see http://creativecommons.org/licenses/by-sa/3.0/.

The folding map is made available in the form of the original PDF used for production of the map, and suitable for professional reprints.

Simple topical maps are also produced from time to time as needed.

Updates of the wall map and the folding map have been issued in March 2009. These include new information about Search and Rescue Regions and Rescue Coordination Centres. Copies of the folding map will be distributed at ATCM XXXII (Baltimore, 2009). Electronic copies of the maps are available through www.comnap.aq/maps.

GoogleEarth / GoogleMap layers

Information on Antarctic facilities maintained on the COMNAP electronic information exchange system ('infoX') can be exported as a 'KML' layer which can be viewed over maps or satellite imagery using GoogleEarth or GoogleMap. This should be available in the near future for any adequately geo-referenced information held in the infoX.

3.11 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, manuals and workshop reports.

COMNAP publishes and regularly updates the hardcopy Antarctic Flight Information Manual (AFIM) as a tool towards safe air operations in Antarctica as per ATCM Recommendation XV-20. It contains exhaustive information on Antarctic airfields and on procedures to contact and access these airfields. It is primarily intended for use by National Antarctic Programs but is also made available for purchase

by anyone that needs a copy. More information on the AFIM is available at www.comnap.aq/afim . A comprehensive review of the AFIM is under way (see Section 3.5 for more details).

COMNAP also maintains the Antarctic Telecommunications Operators Manual (ATOM), an evolution of the *handbook of telecommunications practices* prepared as per Recommendation X-3 (1979). A new version has been introduced in December 2008. It is no longer limited to stations and ships and now also includes contact details for National Antarctic Programs, Search and Rescue authorities and a number of other stakeholders (see Section 3.6 for more details).

3.12 Support of the International Polar Year (IPY) 2007-2008

COMNAP member National Antarctic Programs have provided a significant contribution to the support of National and International IPY projects in the Antarctic, in particular through their national IPY committees. The normal processes in place whereby scientists dealt with their respective National Program, and National Programs worked with each other as appropriate, continued to work well, including for multinational IPY projects.

COMNAP contributed clearly to that success through the provision of a forum in which National Program managers can coordinate their support of international projects as required.

3.13 Review of Inspection Checklist A (Stations)

COMNAP made an active contribution to the work of the open-ended web-based Intersessional Contact Group (ICG) setup by ATCM XXXI (Kyiv, 2008) to review the Inspection Checklist A "Permanent Antarctic Stations and Associated Installations" contained in Resolution 5 (1995), as the first step towards reviewing all the checklists contained in this Resolution.

COMNAP continues to support and welcome the conduction of detailed, exhaustive inspections of stations and other National Antarctic Program facilities and activities, which can act as valuable, beneficial audits. COMNAP welcomed the opportunity, in participating in this review of the checklist, to help improve the checklist in a way that makes it easier for inspection teams to conduct detailed and exhaustive, audit-like inspections.

COMNAP agreed at ATCM XXV (Warsaw 2002) to compile information on Antarctic stations in the format of the inspection checklists (Refer ATCM XXV final report, Paras 123-124). The development of the new COMNAP 'infoX' electronic information exchange system does take this into account as much as practicable and will work towards incorporating the revised checklist as early as possible. Ultimately, the COMNAP infoX should include information relevant to every question in the checklist, and be identified and accessible as such.

COMNAP therefore also welcomed the opportunity, in participating in the review, to contribute to the clarification of questions and the use of a clear, consistent terminology – which will facilitate the work of inspectors but also make possible the development of a sound and consistent repository of relevant information in the COMNAP infoX.

The terminology for facilities used in the development of the COMNAP infoX was provided to the ICG and is included in its report to ATCM XXXII (Baltimore, 2009), submitted as WP037.

COMNAP's contribution to the ICG included a modified version of the checklist complying with that terminology, to try illustrate how the checklist could be adjusted and (hopefully) clarified and improved by the use of an agreed terminology.

For further information, see: ATCM XXXII-WP037 *Report of the Intersessional Contact Group on the revision of List A "Permanent Antarctic stations and associated installations" appended to Resolution 5 (1995)* (Baltimore, 2009)

3.14 Mechanisms for logistics collaboration and sharing of facilities

As one of its 2008-2009 strategic projects, COMNAP is reviewing the mechanisms used for logistics collaboration and the sharing of facilities and exploring possible new options.

The results of this work are due to be presented and discussed at the next COMNAP Annual General Meeting in August 2009 in Punta Arenas, Chile.

3.15 Mechanisms for collaborative support to science

What National Antarctic Program managers have in common is their national responsibility to manage the support of scientific research in the Antarctic Treaty Area on behalf of their government and in the spirit of the Antarctic Treaty.

Increased ambitions – in particular in relation to climate change research, different and more sophisticated science and more demanding environmental measures contribute to added pressure on National Antarctic Programs, and to an even greater need for international collaboration.

COMNAP has recognised a greater need for collaborative support to science. As one of its 2008-2009 strategic projects, COMNAP is reviewing the mechanisms used for collaborative support to science and exploring possible new options. This work is done in close cooperation with the Executive Committee of the the Scientific Committee on Antarctic Research (SCAR).

The results of this work are due to be presented and discussed at the next COMNAP Annual General Meeting in August 2009 in Punta Arenas, Chile.

3.16 Long Term Monitoring Activities (LTMA)

A system has been developed to collect simple yet useful information on all types of Long Term Monitoring Activities (LTMA) maintained in the Antarctic region. These are often handled directly by National Programs and in many cases sit outside the standard process of calls for proposals.

A record of these activities will be very useful in improving coordination, reducing duplication and increasing the potential use of long term records.

It is possible to indicate for each activity which SCAR Research Program(s) it is part of, if applicable. The indication of which parameters are recorded is done via a list of parameters that is a subset of the list of science keywords already used for cataloguing Antarctic data sets on the Antarctic Master Directory (AMD). This will make it easier to cross-reference or group monitoring activities and data sets.

This is a component of possible new mechanisms for collaborative support to science considered in liaison with the SCAR Executive (see Section 3.15).

The LTMA system corresponds to a slightly modified version of the system designed last year for Environmental Activities, which was and remains compatible with the information collected by COMNAP for a number of years on National Programs' environmental monitoring.

For environmental monitoring activities, the LTMA includes the latest categorising and priorities agreed by the CEP. It will allow easy aggregation and categorisation of information, for example by region, by type of monitoring (Operational or State of the Environment) or by parameter measured.

The system is running in test mode with past information on environmental monitoring already imported into it. This will be reviewed with SCAR then presented and discussed at the next COMNAP Annual General Meeting in August 2009 in Punta Arenas, Chile.

3.17 Review of ATCM operational recommendations

COMNAP has actively contributed to the initial review of ATCM operational recommendations undertaken in 2008-2009 by the Antarctic Treaty Secretariat and presented in ATCM XXXII-SP007 *Measures on operational matters* (Baltimore, 2009).

Many recommendations that are still effective, and therefore have to be complied with by National Antarctic Programs, are no longer relevant or appropriate. This is in particular the case in the domains of telecommunications and meteorology. Some recommendations may need updating while some may need to be withdrawn. In some cases, the operative part of the recommendation explicitly incorporates

the content of external documents that are not readily available, and it can be difficult to understand the full nature and extent of the recommendation.

It must be noted that COMNAP has progressively assumed a number of practical tasks and functions that previously were, or would have been, undertaken by Treaty Parties directly or by other organisations. In some cases, these are still formally assigned to others through ATCM recommendations that are still effective.

The initial review has also revealed the absence of a consistent and persistent terminology. A number of terms used regularly in recommendations over the last 50 years have never been clearly defined and do not seem to be always used with the same meaning.

This initial review has highlighted the value of undertaking a complete review of these recommendations that would lead to clarifications, updates or withdrawals of recommendations, as appropriate.

COMNAP looks forward to contributing to future work on this matter.

3.18 Terminology for facilities

The development of a structured and meaningful repository of information, such as in the new ATS and COMNAP electronic information exchange systems, requires the use of a clear, consistent and persistent terminology. This is even more important when the system has to be used by a variety of persons of different native languages.

The recent reviews of operational recommendations in general and of Inspection Checklist A (stations) in particular have shown significant variations, and sometimes confusion, in the terminology used throughout recommendations and other documents when referring to facilities/installations, their type and status.

There is an opportunity, with the current developments of information systems and various reviews of Antarctic Treaty instruments, to develop a clear, consistent terminology that could be used throughout.

As already indicated in section 3.13, the draft terminology for facilities used in the development of the COMNAP infoX was provided to the ICG on the review of Inspection Checklist A and is included in its report to ATCM XXXII (Baltimore, 2009), submitted as WP037.

3.19 Collaboration with the Antarctic Treaty Secretariat

The COMNAP and Antarctic Treaty secretariats have developed and maintained a close and constructive work relationship, and work closely on a number of practical matters as and when appropriate.

The secretariats do in particular collaborate closely on the design and coordination of the two organisations' Information Exchange Systems, which is instrumental in developing an efficient and productive exchange of information within the Antarctic Treaty System.

3.20 Facilitating and promoting wide distribution and use of information and publications

COMNAP continues, as reported in previous years, to try facilitating and promoting the wide distribution and use of its information and publications.

This includes:

- developing web services that can deliver to third parties a range of reference information, for example up-to-date lists of facilities and information on these facilities; and
- releasing products such as maps under Creative Commons licenses under which you keep your copyright but allow people to copy and distribute your work provided they give you credit — and only on the conditions you specify. This promotes the distribution and re-use of

work while protecting the rights of all contributors. For more details, see http://creativecommons.org/licenses/by-sa/3.0/.

4. 2008-2009 officers, topic-based information sharing and strategic projects

Officers

Six elected officers, the COMNAP Chair and 5 Vice-Chairs, plus the Executive Secretary, compose the COMNAP Executive Committee as follows:

Position	Officer	Term expires
Chair	José Retamales (Chile) jretamales@inach.cl	mid-2010
Vice-Chair	Christo Pimpirev (Bulgaria) polar@gea.uni-sofia.bg	mid-2009
	Kazuyuki Shiraishi (Japan) kshiraishi@nipr.ac.jp	mid-2011
	Lou Sanson (New Zealand) l.sanson@antarcticanz.govt.nz	mid-2010
	Rasik Ravindra (India) rasik@ncaor.org	mid-2010
	Virginia Mudie (Australia) virginia.mudie@aad.gov.au	mid-2009
Executive Secretary	Antoine Guichard antoine.guichard@comnap.aq	30 Sept 2009

An up-to-date version of this list is maintained at www.comnap.aq/officers The Chair and each Vice-Chair oversees and supports a small number of topic-based information sharing channels and strategic projects.

Topic-based information sharing

An important and valuable aspect of COMNAP is to allow exchange of information between National Antarctic Program staff on a range of relevant Topics.

Exchange of information on each Topic is coordinated and supported by a nominated “Principal Contact” and done through a dedicated mailing list and Workspace on the COMNAP web site. Each Principal Contact is overseen and supported by a designated EXCOM member.

Topic-based Information Sharing 2008-2009		
Topic	Principal Contact	Oversight EXCOM member
Air	Giuseppe De Rossi giuseppe.derossi@consorzio.pnra.it	Kazuyuki Shiraishi kshiraishi@nipr.ac.jp
Energy	David Blake dmbl@bas.ac.uk	Virginia Mudie virginia.mudie@aad.gov.au
Environment	Rodolfo Sánchez rsanchez@dna.gov.ar	Rasik Ravindra rasik@ncaor.org
Health and Safety	Robert Culshaw rocu@bas.ac.uk	José Retamales jretamales@inach.cl
Medical	Iain Grant iain.grant@phnt.swest.nhs.uk	Lou Sanson l.sanson@antarcticanz.govt.nz
Outreach	Linda Capper lmca@bas.ac.uk	Lou Sanson l.sanson@antarcticanz.govt.nz
Shipping	Juan-José Dañobeitia jjdanobeitia@cmima.csic.es	Rasik Ravindra rasik@ncaor.org

Training	Albert Lluberas alexllub@iau.gub.uy	Christo Pimpirev polar@gea.uni-sofia.bg

An up-to-date version of this list is maintained at www.comnap.aq/topics

Strategic projects

COMNAP Activity focuses on a small number of Strategic Projects, each managed by a Project Manager and overseen by a designated member of EXCOM, the COMNAP Executive Committee.

A Strategic Project is normally restricted to one year, and its outcomes are presented at the COMNAP Annual General Meeting.

Strategic Projects 2008-2009		
Project	Project Manager	Oversight EXCOM member
Mechanisms for collaborative support to science	Heinrich (Heinz) Miller heinrich.miller@awi.de	Christo Pimpirev polar@gea.uni-sofia.bg
Mechanisms for logistic collaboration and sharing facilities	Juan-José Dañobeitia jjdanobeitia@cmima.csic.es	José Retamales jretamales@inach.cl
Online accident, incident and near-miss reporting system	Robert Culshaw rocu@bas.ac.uk	Kazuyuki Shiraishi kshiraishi@nipr.ac.jp
Develop specifications and guidelines for conducting hydrographic surveying using ships of opportunity	Albert Lluberas alexllub@iau.gub.uy	Rasik Ravindra rasik@ncaor.org
Search and Rescue coordination	John Hall jhal@bas.ac.uk	José Retamales jretamales@inach.cl
Review issue of introduction of non-native species into Antarctica and determine practical remedial actions	Yves Frenot yves.frenot@ipev.fr	Lou Sanson l.sanson@antarcticanz.govt.nz
Explore options for syndicate purchasing	Brian Stone bstone@nsf.gov	Virginia Mudie virginia.mudie@aad.gov.au
Review current status of medical support issues	Iain Grant iain.grant@phnt.swest.nhs.uk	Lou Sanson l.sanson@antarcticanz.govt.nz
Revise and update Antarctic Flight Information Manual (AFIM)	Giuseppe De Rossi giuseppe.derossi@consorzio.pnra.it	Kazuyuki Shiraishi kshiraishi@nipr.ac.jp
Upgrade COMNAP Fuel Manual	Richard Mulligan richard.mulligan@aad.gov.au	Virginia Mudie virginia.mudie@aad.gov.au
Implement COMNAP new way of working	Antoine Guichard antoine.guichard@comnap.aq	Virginia Mudie virginia.mudie@aad.gov.au

An up-to-date version of this list is maintained at www.comnap.aq/projects

5. Meetings

2008 COMNAP Annual General Meeting (COMNAP XX) St Petersburg, Russia

COMNAP XX, was held from Sunday 29 June to Friday 04 July 2008 in St Petersburg. The meeting was hosted by the COMNAP member for Russia, the Arctic and Antarctic Research Institute (AARI). It included a range of plenary sessions, meetings of working groups, topical sessions and workshops.

The key outcome of COMNAP XX was the development and adoption of the new COMNAP constitution and a new way of working. These are detailed in Sections 3.1 and 3.2 of this report, and in ATCM XXXII-IP078 *COMNAP's 20 years: a New Constitution and a New Way of Working to Continue Supporting Science and the Antarctic Treaty System* (Baltimore, 2009)

Oct 2008 COMNAP EXCOM, Bansko, Bulgaria

The COMNAP Executive Committee (EXCOM) met on 01-03 October in Bansko, Bulgaria and worked on implementing the changes adopted at COMNAP XX. This included outlining principles for new rules of procedure, confirming key topics for information sharing channels, formulating a number of strategic projects for 2008-2009, and allocating responsibilities.

Next: 2009 COMNAP Annual General Meeting (COMNAP XXI) Punta Arenas, Chile

COMNAP XXI will be hosted by the COMNAP member for Chile, the Instituto Antarctico Chileno, from Sunday 02 to Thursday 06 August 2009 in Punta Arenas, Chile. Following the changes adopted at COMNAP XX, the meeting will adopt a new format with 3 days of keynote presentations and discussions in plenary, followed by one day made available for ad-hoc meetings between National Programs working on bilateral of multilateral collaboration projects.

6. Secretariat

The COMNAP Secretariat operates from an office located in Hobart, Tasmania, Australia. It is 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. Another extremely valuable support provided is the employment of the COMNAP Executive Secretary by the State of Tasmania on a cost recovery basis. While the COMNAP Executive Secretary still reports directly and exclusively to the COMNAP Chair, he his technically an employee of the Tasmanian State Service, with all the additional protection and support it does entail.

COMNAP remains very thankful to the Tasmanian State Government for its continued support, which allows the secretariat to operate very efficiently and in a quality, supportive environment.

7. Conclusion

COMNAP remains committed to supporting the Antarctic Treaty System.

COMNAP and its members continue to work together and help each other to place all National Antarctic Programs in the best possible position to undertake and support scientific and other work in Antarctica on behalf of their respective national governments – safely, efficiently and in the most environmentally responsible manner.

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For more information, please visit COMNAP's web site at www.comnap.aq or email us at info@comnap.aq.

Appendix 1: Shortcut links to COMNAP Information

Updated 11-March-2009. An up-to-date version of this list is maintained at www.comnap.aq/links

Shortcut	Information	Address
accounts	COMNAP audited annual accounts	To be at /accounts. Currently at www.comnap.aq/membersonly/accounts
aeoi	Advance Exchange of Operational Information	www.comnap.aq/aeoi
afim	Antarctic Flight Information Manual	www.comnap.aq/afim
agm	Reports and Papers of past COMNAP Annual General Meetings	To be at /agm. Currently at www.comnap.aq/membersonly/agm
agr	COMNAP Annual General Reports	To be at /agr. Currently at www.comnap.aq/membersonly/agr
ainmr	Accident, Incident and Near Miss Reporting	to be implemented at /ainmr
amen	List of members of the AMEN	www.comnap.aq/amen
atcm	ATCM meetings – dates, links and schedule for preparations	www.comnap.aq/atcm
atom	Antarctic Telecommunications Officers Manual	www.comnap.aq/atom
budget	Current COMNAP Budget	To be at /budget. Currently at www.comnap.aq/membersonly/budget
calendar	Work calendar for the current year	to be implemented at /calendar
cep	CEP-relevant information	to be implemented at /cep
constitution	COMNAP Constitution	www.comnap.aq/constitution
contacts	Current COMNAP Contacts, including contacts for operational emergencies	To be at /contacts. Currently at www.comnap.aq/membersonly/contacts
countries	Countries involved in Antarctic affairs	www.comnap.aq/countries
decisions	Recent COMNAP Decisions	to be implemented at /decisions
eirs	Environmental Incident Reporting System	to be implemented at /eirs
events	List of upcoming events	www.comnap.aq/events
excom	EXCOM-relevant information and documents	to be implemented at /excom
facilities	List of Antarctic facilities	www.comnap.aq/facilities
fees	Copies of membership fee invoices	To be at /fees. Currently at www.comnap.aq/membersonly/fees
forms	Forms and templates	www.comnap.aq/forms
guidelines	Any documents classified as 'guidelines'	to be implemented at /guidelines
incidents	General reports on incidents in Antarctica	To be at /incidents. Currently at www.comnap.aq/membersonly/incidents
interoperability	Technical resources for interoperability	www.comnap.aq/interoperability
links	Links and shortcuts to essential information	www.comnap.aq/links
logos	COMNAP logos and other graphics	To be at /logos. Currently at www.comnap.aq/membersonly/logos
manuals	Any documents classified as 'manuals'	to be implemented at /manuals
maps	COMNAP and other Antarctic maps	www.comnap.aq/maps
meetings	List of meetings	www.comnap.aq/meetings
messages	Archive of “COMNAP Messages”	to be implemented at /messages
news	News items	www.comnap.aq/news
notices	Archive of “COMNAP Notices”	to be implemented at /notices
officers	List of COMNAP elected and appointed officers	www.comnap.aq/officers

Shortcut	Information	Address
people	Details of people with a Personal User Account on the COMNAP web site	to be implemented at /people
procedures	COMNAP's current Rules of Procedure	www.comnap.aq/procedures
proceedings	Any documents classified as 'proceedings'	to be implemented at /proceedings
projects	Current COMNAP Strategic Projects	www.comnap.aq/projects
protocol	Text of the Protocol on Environmental Protection to the Antarctic Treaty (Madrid Protocol)	www.comnap.aq/protocol
recent	Information recently posted or updated on the COMNAP web site	To be at /recent. Currently at www.comnap.aq/membersonly/recent
representatives	List and contact details of current National Representatives	www.comnap.aq/representatives
review	Documents for review	To be at /review. Currently at www.comnap.aq/membersonly/review
sar	Search and Rescue in the Antarctic	www.comnap.aq/sar
sprs	COMNAP Ship Position Reporting System	www.comnap.aq/sprs
stations	List of Antarctic Stations	www.comnap.aq/stations
symposium	COMNAP Symposium	www.comnap.aq/symposium
terminology	Terminology used in COMNAP exchanges of information, in particular on the COMNAP web site.	www.comnap.aq/terminology
topics	Current topics with a dedicated mailing list	www.comnap.aq/topics
treaty	Text of the Antarctic Treaty of 1959 (Treaty of Washington)	www.comnap.aq/treaty

Appendix 2: Main Antarctic facilities operated by the National Antarctic Programs in 2009 in the Antarctic Treaty Area (South of 60 degrees latitude South)

Updated 25 March 2009. Sorted by facility name. An up-to-date version of this list is maintained at www.comnap.aq/facilities . You can also find a map showing these facilities at www.comnap.aq/maps.

Important Information:

- The publication of details of these facilities does not imply any right of use. The facilities are established and maintained by National Antarctic Programs strictly for their own use – they are not designed or provided for use by others. Prior agreement must be obtained to use facilities maintained by another operator. In particular, requests for access to airfields must comply with the procedures for coordination, approval and information described in the Antarctic Flight Information Manual (AFIM) published by COMNAP - see www.comnap.aq/afim

Furthermore, the relevant legal instruments and authorisation procedures adopted by the states party to the Antarctic Treaty regulating access to the Antarctic Treaty Area, that is to all areas between 60 and 90 degrees of latitude South, have to be complied with. For more information, see www.ats.aq

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Chile	11 de septiembre		63°36.318' W	57°35.528' W			2002	Refuge	Seasonal				5	n/a		
Finland	Aboa	AQ-ABA	73°03'S	013°25'W	400 m		1989	Station	Seasonal				20	n/a		
Chile	Abrazo de Maipú		63°23.278' S	57°34.96' W	400 m		2003	Refuge	Seasonal				8	n/a		
USA	Amundsen-Scott	AQ-AMS	89°59.85'S	139°16.37'E	2 830 m	ski	1956	Station	Year-round				250	75		
Chile	Antonio Huneeus		80°08' S	81°16' W	880 m		1997	Camp	Seasonal				4	n/a		
Poland	Arctowski	AQ-ARC	62°09.57'S	058°28.25'W	2 m		1977	Station	Year-round				40	12		
Uruguay	Artigas	AQ-ART	62°11.07'S	058°54.15'W	17 m		1984	Station	Year-round				60	9		
Chile	Arturo Parodi		80°19.10'S	081°18.48'W	880 m	wheel & ski	1999	Station	Seasonal				25	n/a		
Chile	Arturo Prat	AQ-APT	62°28.75'S	059°39.833'W	5 m		1947	Station	Year-round				15	9		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Japan	Asuka		71°31.57'S	024°08.28'E	930 m		1984	Station	Seasonal					n/a		
Chile	Bahía Yankee		62°32’ S	59°47’ W	5 m		1952	Refuge	Seasonal					n/a		
Argentina	Belgrano II (1)	AQ-BEL	77°52.48'S	034°37.62'W	250 m		1955	Station	Year-round				12	12		
Russia	Bellingshausen	AQ-BHN	62°11.78'S	058°57.65'W	16 m		1968	Station	Year-round				38	25		
Chile	Bernardo O'Higgins	AQ-OHG	63°19.25'S	057°54.02'W	12 m	ski	1948	Station	Year-round				44	16		
Argentina	Brown		64°53'S	62°53'W	10 m		1951	Station	Seasonal				18	n/a		
Italy	Browning Pass		74°37.37'S	163°54.82'E	170 m	ski	1997	Refuge	Seasonal	15 December	2 February	6	2	n/a		
Argentina	Cámara		62°36'S	59°56'W	22 m		1953	Station	Seasonal				36	n/a		
Australia	Casey	AQ-CAS	66°17.00'S	110°31.18'E	30 m	ski	1969	Station	Year-round				70	20		
Chile	Collins		62°09.667’ S	58°50.967’ W	5 m		2006	Refuge	Seasonal				3	n/a		
Brazil	Comandante Ferraz	AQ-CFZ	62°05.00'S	058°23.47'W	8 m		1984	Station	Year-round				40	12		
France & Italy	Concordia (2)	AQ-CON	75°06.12'S	123°23.72'E	3220 m	ski	1997	Station	Year-round	01-Nov	01-Feb	65	60	13		
France	D10 skiway		66°40.08'S	139°49.18'E	~ 100 m	ski		Camp	Seasonal	01-Nov	01-Mar			n/a		
France	D85 skiway		70°25.50'S	134°08.75'E	2850 m	ski		Camp	Seasonal					n/a		
India	Dakshin Gangotri		70°05'S	12°00'E			1983	Station	Seasonal					n/a		
Germany	Dallman		62°14'S	58°40'W			1994	Station	Seasonal				12	n/a		
Australia	Davis	AQ-DAV	68°34.63'S	077°58.35'E	15 m	ski	1957	Station	Year-round				70	22		
Argentina	Decepcíon		62°59'S	60°42'W	7 m		1948	Station	Seasonal				65	n/a		
Japan	Dome Fuji	AQ-DMF	77°19.00'S	039°42.20'E	3810 m	ski	1995	Station	Seasonal				15	n/a		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Russia	Druzhnaya 4	AQ-DRZ	69°44'S	073°42'E	20 m		1987	Station	Seasonal				50	n/a		
France	Dumont d'Urville	AQ-DDU	66°39.77'S	140°00.08'E	42 m		1956	Station	Year-round	01-Nov	01-Mar	100	100	26		
Australia	Edgeworth-David		66°15'S	100°36'E	15 m			Camp	Seasonal					n/a		
Italy	Edmonson Point		74°20’S	165°07’E		ski	1994	Camp	Seasonal	01-November	31 January					
Chile	Eduardo Frei		62°12.00'S	058°57.75'W	10 m		1969	Station	Year-round				120	70		
Italy	Enigma Lake		74°42.81'S	164°02.49'E	170 m	ski	2005	Depot	Seasonal	15 December	2 February			n/a		
Argentina	Esperanza	AQ-ESP	63°23.70'S	056°59.77'W	25 m		1952	Station	Year-round				90	55		
Chile	Estación marítima Antártica		62º 12.4’ S	58º57.45’ W	5 m		1987	Station	Year-round				15	9		
Chile	Federico Guesalaga		67°46.50’ S	68°54’ W	50 m		1962	Refuge	Seasonal					n/a		
Chile	Federico Puga (ex Punta Spring or G. Mann)		64°17.80’ S	61°04’ W	30 m		1972	Refuge	Seasonal				4	n/a		
United Kingdom	Fossil Bluff		71°19.76'S	068°16.02'W	92 m	ski	1961	Refuge	Seasonal	October	February		6	n/a		
Spain	Gabriel de Castilla	AQ-GDC	62°59'S	060°41'W	15 m		1990	Station	Seasonal				25	n/a		
Chile	Gabriel González Videla		64°49.42'S	62°51.50'W	5 m		1951	Station	Seasonal				9	n/a		
Germany	Gondwana		74°38'S	164°13'E			1983	Station	Seasonal					n/a		
China	Great Wall	AQ-GWL	62°12.98'S	058°57.73'W	10 m		1985	Station	Year-round				40	14		
Czech Republic	Gregor Mendel		63°48.04'S	057°52.95'W	~ 10 m		2006	Station	Seasonal				20	n/a		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Chile	Guillermo Mann (ex-Shirreff)		62°28.1' S	60°46.1' W	10 m		1991	Station	Seasonal				6	n/a		
United Kingdom	Halley	AQ-HLY	75°34.90'S	026°32.47'W	37 m	ski	1956	Station	Year-round	November	March		65	15		
Spain	Juan Carlos I	AQ-JCP	62°39'S	060°23'W	12 m		1989	Station	Seasonal				25	n/a		
Argentina	Jubany	AQ-JUB	62°14.27'S	058°39.87'W	10 m		1982	Station	Year-round				100	20		
Chile	Julio Escudero	AQ-ESC	62°12.08'S	058°57.77'W	10 m		1994	Station	Year-round				26	2		
Chile	Julio Ripamonti		62°12.07'S	58°53.13'W	50 m		1986	Station	Seasonal				4	n/a		
Korea	King Sejong	AQ-KSG	62°13.40'S	058°47.35'W	10 m		1988	Station	Year-round				70	18		
Germany	Kohnen	AQ-KHN	75°00'S	000°04'E	2900 m	ski	2001	Station	Seasonal				28	n/a		
China	Kunlun		80°25.02'S	077°06.97'E	4087 m		2009	Station	Seasonal	10 January	10 February	15	20	n/a		
Australia & România	Law – Racovita	AQ-LAW	69°23'S	076°23'E	65 m		1987	Station	Seasonal				13	n/a		
Russia	Lenindgradskaya		69°30'S	159°23'E			1971	Station	Temporarily Closed					n/a		
Chile	Luis Carvajal		67°45'S	68°54'W	10 m	ski	1985	Station	Seasonal				30	n/a		
Chile	Luis Risopatron		62°22.92'S	59°39.833'W	10 m		1957	Station	Temporarily Closed				8	n/a		
Peru	Macchu Picchu		62°05.49'S	058°28.27'W	10 m		1989	Station	Seasonal				28	n/a		
India	Maitri	AQ-MTR	70°45.95'S	011°44.15'E	130 m		1989	Station	Year-round				65	25		
Ecuador	Maldonado		62°26.96'S	059°44.54'W	~ 10 m		1990	Station	Seasonal				22	n/a		
Argentina	Marambio	AQ-MRB	64°14.70'S	056°39.42'W	200 m	wheel	1969	Station	Year-round				150	55		
USA	Marble Point Heliport		77°24.82'S	163°40.75'E				Camp	Seasonal					n/a		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Italy	Mario Zucchelli	AQ-MZU	74°41'S	164°07'E	15 m	wheel & ski	1986	Station	Seasonal	20 October	2 February	80	90	n/a		
Argentina	Matienzo		64°58'S	60°03'W	32 m		1961	Station	Seasonal				15	n/a		
Australia	Mawson	AQ-MAW	67°36.28'S	062°52.25'E	5 m	ski	1954	Station	Year-round				60	20		
USA	McMurdo	AQ-MCM	77°50.88'S	166°40.10'E	~ 10 m	wheel & ski	1955	Station	Year-round				1000	250		
Argentina	Melchior		64°20'S	62°59'W			1947	Station	Seasonal				36	n/a		
Italy	Mid Point		75°32.44'S	145°49.12'E	2520 m	ski	1998	Depot	Seasonal	20 October	2 February			n/a		
Russia	Mirny	AQ-MIR	66°33.12'S	093°00.88'E	40 m		1956	Station	Year-round				169	60		
Japan	Mizuho		70°41.88'S	44°19.90'E	2230 m		1970	Station	Seasonal					n/a		
Russia	Molodezhnaya		67°40.30'S	045°23.00'E	42 m		1962	Station	Temporarily Closed					n/a		
Russia	Molodezhnaya Airfield		67°40.97'S	046°08.08'E	225 m	wheel & ski		Camp	Seasonal					n/a		
Germany	Neumayer	AQ-NEU	70°38.00'S	008°15.80'W	40 m	ski	1981	Station	Year-round				50	9		
Russia	Novolazarevskaya	AQ-NOV	70°46.43'S	011°51.90'E	102 m		1961	Station	Year-round				70	30		
Russia	Novolazarevskaya Airfield		70°49.52'S	11°37.68'E	550 m	wheel & ski		Camp	Seasonal					n/a		
USA	Odell Glacier		76°39'S	159°58'E	1600 m	wheel		Camp	Seasonal					n/a		
Bulgaria	Ohridiski		62°38.48'S	060°21.88'W	~ 13 m		1988	Station	Seasonal	01 November	01 March	12	18	n/a		
Argentina	Orcadas	AQ-ORC	60°44.33'S	044°44.28'W	4 m		1904	Station	Year-round				45	14		
USA	Palmer	AQ-PLM	64°46.50'S	064°03.07'W	~ 10 m		1965	Station	Year-round				43	12		
Argentina	Petrel		63°28'S	56°13'W	18 m		1967	Station	Seasonal				55	n/a		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Argentina	Primavera		64°09'S	60°57'W	50 m		1977	Station	Seasonal				18	n/a		
Belgium	Princess Elisabeth		71°57'S	23°20'E	1397 m		2009	Station	Seasonal	01 November	01 March	20		n/a		
Russia	Progress 2	AQ-PRO	69°23'S	076°23'E	15 m		1989	Station	Year-round				77	20		
France	Prud'homme		66°41.22'S	139°54.42'E	~ 10 m			Camp	Seasonal	01-Nov	01-Mar	20	25	n/a		
Chile	Ramón Cañas (or Jorge Boonen)		63°32.263' S	57°24.257' W	10 m		1997	Refuge	Seasonal				10	n/a		
Ecuador	Refugio Ecuador (6)		62°08'S	058°22'W	~ 10 m		1990	Refuge	Seasonal				4	n/a		
Chile	Rodolfo Marsh	AQ-TNM	62°11.37'S	058°58.87'W	45 m	wheel	1969	Camp	Year-round				15	8		
United Kingdom	Rothera	AQ-ROT	67°34.17'S	068°07.20'W	16 m	wheel	1975	Station	Year-round	October	March		130	22		
United Kingdom	Rothera Skiway		67°32'S	68°11'W	250 m	ski	1975	Camp	Seasonal	October	March			n/a		
Russia	Russkaya		74°45'S	136°40'W			1980	Station	Temporarily Closed					n/a		
Japan	S17		69°01.58'S	040°04.37'E	620 m	ski	2005	Camp	Seasonal					n/a		
Argentina	San Martín	AQ-SMT	68°07.78'S	067°06.20'W	5 m		1951	Station	Year-round				20	20		
South Africa	SANAE IV (3)	AQ-SNA	71°40.42'S	002°49.73'W	850 m	ski	1962	Station	Year-round				80	10		
New Zealand	Scott Base	AQ-SBA	77°51.00'S	166°45.77'E	10 m		1957	Station	Year-round				85	10		
United Kingdom	Signy	AQ-SGN	60°43'S	045°36'W	5 m		1947	Station	Seasonal	September	March		10	n/a		
USA	Siple Dome		81°39'S	149°04'W		ski		Camp	Seasonal					n/a		
Italy	Sitry Point		71°39.32'S	148°39.15'E	1600 m	ski	2000	Depot	Seasonal	20 October	2 February					
United Kingdom	Sky Blu		74°51.38'S	071°34.16'W	1372 m	wheel		Camp	Seasonal	November	February		6	n/a		
Argentina	Sobral		81°05'S	40°39'W	1000 m		1965	Station	Seasonal				7	n/a		

										Typical Summer Dates (10)		Population (9)				
Operator(s)	Facility Name	UN Locode	Latitude	Longitude	Elevation	Airfield Suitability if any (5)	First opened	Facility Type (7)	2009 Current Status (8)	Summer Start Date	Summer End Date	Nominal Capacity	Peak	Winter Average	Annual Average	Annual Turnover
Russia	Soyuz		70°35'S	68°47'E	336 m		1982	Station	Temporarily Closed					n/a		
Japan	Syowa	AQ-SYW	69°00.37'S	039°35.40'E	29 m	ski	1957	Station	Year-round				110	28		
Uruguay	T/N Ruperto Elichiribehety		63°24.13'S	056°58.38'W	~ 50m		1997	Station	Seasonal	December	March	10				
Italy	Talos Dome		72°46’	159°02’E	2300 m	ski	2004	Camp	Seasonal	07 November	20 January	8	10			
Norway	Tor	AQ-TOR	71°53'S	005°09'E	1625 m		1985	Station	Seasonal				4	n/a		
Norway	Troll (4)	AQ-TRL	72°00.12'S	002°32.03'E	1300 m	wheel	1990	Station	Year-round				40	7		
Ukraine	Vernadsky	AQ-VKY	65°14.72'S	064°15.40'W	7 m		1996	Station	Year-round				24	12		
Russia	Vostok	AQ-VOS	78°28.00'S	106°48.00'E	3500 m	ski	1957	Station	Year-round				25	13		
Sweden	Wasa	AQ-WSA	73°03'S	013°25'W	~ 400m		1989	Station	Seasonal				20	n/a		
Australia	Wilkins Runway		66°41.45'S	111°31.73'E	740 m	ski & wheel		Camp	Seasonal					n/a		
Chile	Yelcho		64°62'S	63°35'W	5 m		1962	Station	Temporarily Closed				8	n/a		
China	Zhongshan	AQ-ZGN	69°22.27'S	076°22.23'E	~ 10 m		1989	Station	Year-round				30	15		

Notes:

Note 1: Belgrano

Original Belgrano Station opened 1955. Replaced by Belgrano II 1979.

Note 2: Concordia

Concordia Station opened Dec 1997 for summer-only operation. Opened for year-round operation Feb 2005.

Note 3: SANAE

Original SANAE Station opened 1962. SANAE IV opened 1997 at a new location, 200km South of SANAE I to III

Note 4: Troll

Troll Station opened Feb 1990 for summer-only operation. Opened for year-round operation Feb 2005.

Note 5: Airfields

Airfield information is extracted from the AFIM (except for Troll airfield that is not yet included in AFIM) published and maintained by COMNAP. See http://www.comnap.aq/afim .
The 'suitability' indicated (wheel; ski; or wheel and ski) corresponds to suitability of the airfield when all its runways are operational. Skiways are generally not maintained all year-round. In many cases they are prepared only when and as required by National Programs.

Note 6: Refugio Ecuador

Refugio Ecuador (full name “Refugio Republic del Ecuador”) was previously known as “Vicente”

Note 7: Options for Facility Type

- Station: an established facility/installation with fixed, permanent buildings and mechanical services – reticulated power, water and sewage, etc...;

Camp: a more basic and less permanent facility/installation, such as a group of tents/ shelters, often used only for a small number of seasons;
Refuge: usually a small and very basic facility/installation, sometimes only one small hut, but usually of a permanent nature;
Depot: a depot of food, fuel or other supply.

Note 8: Options for facility Current Status

- Year-round: opened all year round – winter and summer;

Seasonal: opened Seasonally only – typically opened every summer or most summers;
Temporarily Closed: closed temporarily and ready to be re-opened as and when required;
Closed: closed indefinitely – but at least part of the facility still exists and could be renovated and/or re-used;
No Longer Exists: the facility no longer exists;
Under Construction: under construction – on-site construction work has commenced;
Under Consideration: construction of the facility nis under consideration – on-site construction work has not commenced.

Note 9: Population parameter definitions

- Nominal Capacity: the maximum number of persons the facility is designed for, and can accommodate 'comfortably'. As consistent with the number of beds and the size/capacity of catering, ablution and waste processing facilities, etc...

Peak: the maximum number of persons present at the facility at any one time.
This will typically be the number of persons present on site at the busiest time of the summer. This can be higher than the Nominal Capacity of the facility.

Summer average: the average number of persons living in the facility over the summer period.
Winter average: the average number of persons living in the facility over the winter period.
Annual average: the average number of persons living in the facility over the entire year.
This corresponds to the number of persons-day on station over the year, divided by 365 (or 366).
Annual turnover: the total number of person movements into the facility over a 12 months period.
Do not add in and out. One person coming in and going out once counts for 1 only, but the same person coming in and out twice during the year is counted twice. For simplicity, just calculate the number of movements 'in' by adding up the number of passengers on each ship or flight arrived at the station.

Note 10: Typical Summer Dates

- Summer Start Date: Typical start date (day-month) of the summer season for the facility

For year-round facilities, this is the time of the first ship or aircraft arriving with passengers after the winter.
Summer End Date: Typical end date (day-month) of the summer season for the facility
For year-round facilities, this is the time of the last ship or aircraft departing with passengers before the winter.

COMNAP's 20 years: A New Constitution and a New Way of Working to Continue Supporting Science and the Antarctic Treaty System

Abstract

Created in 1988, COMNAP has adopted for its 20th anniversary a new constitution and a new way of working.

The new constitution clarifies and reasserts COMNAP's purpose, *to develop and promote best practice in managing the support of scientific research in the Antarctic*, and reasserts its close connection with the Antarctic Treaty.

The new way of working should put COMNAP in a better position to address new, upcoming challenges. In particular, COMNAP has recognised a greater need for collaborative support to science, and is addressing it.

COMNAP has progressively assumed a number of practical tasks and functions previously handled by the Treaty Parties directly or by other organisations, and sometimes still formally assigned to those through ATCM measures still in force. In particular, COMNAP maintains a range of information of practical use to many in the Antarctic Treaty System, and which include and go beyond the range of information that Parties are required to exchange.

COMNAP Origins

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* on behalf of their respective governments, all Parties to the Antarctic Treaty.

Until then, Managers of National Antarctic Programs (MNAPs) only met within the structure of the Scientific Committee on Antarctic Research (SCAR – a non-governmental organisation), and also on the margins of Antarctic Treaty Consultative Meetings (ATCMs).

The National Antarctic Programs (NAPs) have their foundation in the early expeditions sent to explore, map and study Antarctica in the 19th and early 20th centuries and, more importantly, in the national scientific expeditions of the International Geophysical Year (IGY) of 1957-58.

The early expedition already fostered and relied on international collaboration, 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 of which remain active in the Antarctic. Three National Antarctic Program stations in operation today are named after 3 of these 29 men: Norwegian explorer *Roald Amundsen* (station Amundsen-Scott), Polish geologist, oceanographer and meteorologist *Henryk Arctowski* (station Arctowski) and Romanian biologist, zoologist and biospeleologist *Emil Racoviţă* (station Law-Racovita).

The International Geophysical Year (IGY) of 1957-58 saw international collaboration reach new heights with 12 nations coordinating a range of large research programmes across many scientific disciplines, supported by 57 stations (including 6 in the sub-Antarctic), new technologies and significant use of air transport and logistics.

COMNAP has its roots in this long-standing tradition of multilingual, international collaboration in the planning and conduct of Antarctic scientific expeditions.

COMNAP's 20 years

COMNAP just celebrated its 20th anniversary.

It has now grown into an international organisation bringing together the National Antarctic Programs from 29 Antarctic Treaty Parties from Africa (1), the Americas (8), Asia (4), Australasia (2) and Europe (14). New Antarctic Programs from Belarus, the Czech Republic, Estonia, Romania and Venezuela have established contact with COMNAP and could join in the near future, bringing the total to 34 members.

COMNAP has become an active, recognised member of the Antarctic Treaty System. It has the status of Observer at both Antarctic Treaty Consultative Meetings (ATCMs) and meetings of the Antarctic Treaty's Committee for Environmental Protection (CEP) where it provides practical, technical advice drawn from the National Antarctic Programs' pool of expertise.

It has produced and maintains a range of practical information and products, including the Antarctic Flight Information Manual (AFIM) and the Antarctic Telecommunications Operators Manual (ATOM). It has developed practices that improve the effectiveness of Antarctic activities in an environmentally responsible manner, and has produced a range of best practice advice and guidelines.

It has promoted and facilitated international partnerships at various levels and in different ways, in particular through providing a forum in which national managers could meet and develop bilateral and multilateral collaborations as needed.

It has maintained a close relationship with the Scientific Committee on Antarctica (SCAR), in particular through close liaison and regular meetings between both organisations' executive committees.

A New Constitution

For its 20th anniversary, COMNAP adopted at COMNAP XX (St Petersburg, Russia, 29 June to 04 July 2008) a new, simple and clear constitution.

It clarifies and reasserts COMNAP's purpose as:

To develop and promote best practice in managing the support of scientific research in Antarctica, by

- *Serving as a forum to develop practices that improve effectiveness of activities in an environmentally responsible manner;*
- *Facilitating and promoting international partnerships;*
- *Providing opportunities and systems for information exchange; and*
- *Providing the Antarctic Treaty System with objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.*

It also confirms COMNAP's close connection with the Antarctic Treaty by reasserting the long-standing principles that:

- COMNAP membership is only open to those with national responsibility for managing the support of scientific research in the Antarctic Treaty Area on behalf of their respective governments, which must have signed the Antarctic Treaty and ratified its Protocol on Environmental Protection; and
- COMNAP like the ATCM generally follows the principle of consensus, as the way to reach an opinion or position developed by a group as a whole.

The new COMNAP constitution (Annex A) provides renewed guidance and will assist in developing a number of strategic objectives.

A New Way of Working

In conjunction with the new Constitution, COMNAP adopted in St Petersburg a new way of working so that it will be better placed to address new, upcoming challenges.

COMNAP will now be a more strategic, project-oriented organisation, defining a small number of strategic projects and each time finding the best people to deliver a result within a defined, limited timeframe.

We no longer operate through a range of formal Working Groups, Committees and Networks with their large membership of national representatives. The valuable communication channels with, and between, experts in each field are maintained through simple topic-based mailing lists and new information sharing systems.

COMNAP Annual General Meetings will become shorter and more focused, with the plenary given targeted presentations on strategic projects and topics, followed by discussions and consideration of relevant proposals put forward by the project teams.

Development and implementation of this new way of working is in progress.

Supporting Science

What National Antarctic Program managers have in common is their national responsibility to manage the support of scientific research in the Antarctic Treaty Area on behalf of their government and in the spirit of the Antarctic Treaty. This is what brings them together in COMNAP and, hence, what they want to help each other with.

These managers organise and, for most of them, fund the support to research projects that have been evaluated and selected at national level. Selection is based on the quality and relevance of the science, but also on the extent and availability of the resources required for the project, and on national strategic priorities. Most of these managers have a key role in the decision process about the science that can and will actually be supported.

Two key aspects of COMNAP's purpose are of particular relevance to this:

- *Improving the effectiveness of [National Antarctic Program's] activities*: being more efficient within a country means more science with the same budget;
- *Facilitating and promoting international partnerships*: more international collaboration means less duplication and more science with the same global budget.

Increased ambitions – in particular in relation to climate change research, different and more sophisticated science and more demanding environmental measures contribute to added pressure on National Antarctic Programs, and to an even greater need for international collaboration. This may not have been noticed so much yet with the considerable extra funding that National Programs had managed to secure for the International Polar Year (IPY). But IPY is now coming to an end, and now comes the challenge of how to deal with its legacy.

Undoubtedly, all good quality science projects deserve to be supported but neither the money nor the infrastructure will always be available to support them.

The national managers' decision process will become more and more critical. And it will need to take into account more and more what resources are needed for a project, and what resources can be pooled and shared with others if the project can be modified or associated with projects in other countries.

COMNAP has recognised a greater need for collaborative support, and is addressing it. The new way of working is an important component of this. Related strategic work is under way. It includes a review and assessment of options and possible mechanisms for bilateral and multilateral partnerships between National Antarctic Programs, and a similar review and assessment with SCAR of possible new mechanisms for collaboration between the two organisations.

Supporting the Antarctic Treaty System

Just three years before the creation of COMNAP, the XIIIth Antarctic Treaty Consultative Meeting (ATCM XIII, Brussels, Belgium, 08-18 Oct 1985) in Recommendation XIII-2 *Operation of the Antarctic Treaty System: Overview* had recommended that *an item "Operation of the Antarctic Treaty*

System: Reports" be included on the Agenda of each subsequent Consultative Meeting under which reports [would] be received from the components of the system. The recommendation provided a list of these components of the system and introduced the category of *observers* for two organisations: the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) and the Scientific Committee on Antarctic Research (SCAR).

Following its creation in 1988, COMNAP started contributing positively to the Antarctic Treaty System and in 1991 was given the status of Observer alongside CCAMLR and SCAR.

At the Preparatory Meeting held in Bonn in April 1991 to prepare ATCM XVI, the Antarctic Treaty Consultative Parties invited the Chairman of COMNAP to present a report on the activities of COMNAP under agenda item 5 (a) of the provisional agenda of ATCM XVI, to be held in Bonn, Germany, 07-18 Oct 1991 (refer ATCM XVI final report, paragraph 4). This agenda item 5 (a) was explicitly to deal with reports to be provided under Recommendation XIII-2.

ATCM XVI *recognised the important role of COMNAP in examining and solving practical problems relating to the implementation of scientific activities and their associated logistics* and *agreed that COMNAP should be invited in future to participate on the same basis as SCAR under Recommendation XIII-2* (refer ATCM XVI final report, paragraphs 23-24). This added COMNAP as one of the *components of the [Antarctic Treaty] system* called under Recommendation XIII-2 to provide reports to the ATCM. This is reflected in the ATCM Rules of Procedure (refer ATCM Revised Rules of Procedure (2008), paragraphs 2 and 31-35).

COMNAP has since 1991 remained committed to serve its role in the Antarctic Treaty System and in the protection of the Antarctic environment by providing objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.

COMNAP has also progressively assumed a number of practical tasks and functions that previously were, or would have been, undertaken by Treaty Parties directly or by other organisations. A case in point is its role as repository for some of the information which the Treaty Parties are required to exchange under Article VII of the Treaty and related provisions. Information in such fields such as air safety and telecommunications, which is still formally included in current ATCM measures, is no longer exchanged between the Parties directly, but is actually collected and maintained – with updated specifications – through the COMNAP mechanisms.

COMNAP developed and maintains the Antarctic Flight Information Manual (AFIM – as per 1989's ATCM Recommendation XV-20 A*ir Safety in Antarctica*) and the Antarctic Telecommunications Operators Manual (ATOM), both of which include and go beyond the range of information that Parties are required to exchange under a number of Treaty provisions, in particular under Resolution 6 (2001).

COMNAP maintains a range of practical information about National Antarctic Program stations, camps, refuges and ships which again include and go beyond the information that Parties are required to exchange under the Treaty. Close cooperation over the last few years between the Antarctic Treaty and COMNAP secretariats has resulted in a coordinated development of both sides' information systems with a view to avoiding duplication. It will be possible for Parties, with just a few clicks, to export relevant information maintained on the COMNAP systems to the Antarctic Treaty Secretariat systems for the purpose of meeting their exchange of information obligations under the Antarctic Treaty.

Following discussions at ATCM XXV (Warsaw 2002), *COMNAP agreed to compile [...] information on Antarctic bases [in the format of the inspection checklists]* (refer ATCM XXV final report, paragraphs 123-124). COMNAP is contributing actively to the current review by the ATCM of this checklist, including with a view to finalising the format in which it will compile this information. This is so that it can be consistent with information that is already collected, or that needs to be exchanged under the Treaty.

Conclusion

Created in 1988, COMNAP has adopted for its 20th anniversary a new constitution and a new way of working.

The new constitution clarifies and reasserts COMNAP's purpose, t*o develop and promote best practice in managing the support of scientific research in the Antarctic,* and reasserts its close connection with the Antarctic Treaty. It provides renewed guidance and will assist in developing a number of strategic objectives.

The new way of working should put COMNAP in a better position to address new, upcoming challenges. In particular, COMNAP has recognised a greater need for collaborative support to science, and is addressing it.

COMNAP formally became a component of the Antarctic Treaty System in 1991 and has ever since remained committed to serve its role in the Treaty System by providing objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.

COMNAP has also progressively assumed a number of practical tasks and functions that previously were, or would have been, undertaken by the Treaty Parties directly or by other organisations. Some of these tasks and functions remain formally assigned to those through various ATCM measures that are still current.

In particular, COMNAP maintains a range of information of practical use to many in the Antarctic Treaty System, and which include and go beyond a range of information that Parties are required to exchange under the Treaty. Every effort is made to ensure this information can easily be used by the Parties to fulfil their information exchange requirements.

Annex A: COMNAP Constitution (as adopted 04 July 2008)

Preamble

Supporting Science

What member National Antarctic Programs have in common is their national responsibility to manage the support of scientific research in the Antarctic Treaty Area.

Consistent with this, COMNAP's primary mission is to develop and promote best practice in managing the support of scientific research in the Antarctic.

Supporting the Antarctic Treaty System

COMNAP is committed to serve its role in the Antarctic Treaty System and in the protection of the Antarctic environment by providing objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.

COMNAP Origins

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*, the officials responsible for carrying out national activity in the Antarctic on behalf of their governments - all Parties to the Antarctic Treaty.

Until then, Managers of National Antarctic Programs only met informally on the margins of other meetings that they attended: meetings of the Scientific Committee on Antarctic Research (SCAR – a non-governmental organisation), and Antarctic Treaty Consultative Meetings (ATCMs).

Some of their staff members were members of the SCAR Working Group on Logistics, which was then transformed into the Standing Committee on Antarctic Logistics and Operations (SCALOP) - a group that had a special status as it was under the authority of both COMNAP and SCAR.

COMNAP maintains a special, complementary relationship with SCAR. The Executives of both organisations meet annually and both organisations attempt to coordinate their bi-annual meetings so as to facilitate cross-participation in both meetings.

COMNAP immediately started contributing positively to the Antarctic Treaty System and was very quickly formally recognised as a valuable member of the Treaty System. It was invited to provide a report to the ATCM as early as 1991 (XVI ATCM, Bonn, Germany, 07-18 Oct 1991). XVI ATCM *recognised the important role of COMNAP in examining and solving practical problems relating to the implementation of scientific activities and their associated logistics* (refer XVI ATCM final report, paragraph 23). Since then, COMNAP has had the status of observer at ATCMs.

Constitution

1 General

1.1 Each signatory to the Antarctic Treaty normally establishes a “National Antarctic Program”. The National Antarctic Program is defined as the entity with national responsibility for managing the support of scientific research in the Antarctic Treaty Area on behalf of its government and in the spirit of the Antarctic Treaty.

1.2 Those National Antarctic Programs can choose to become a member of the Council of Managers of National Antarctic Programs, hereafter referred to as COMNAP.

1.3 Ultimate decision power on COMNAP matters rests with the assembly of the “Managers of National Antarctic Programs” (MNAPs) which meets in an Annual General Meeting (AGM) at a

location agreed at a previous AGM. Each member National Antarctic Program has one vote at the AGM.

1.4 Decision making at COMNAP generally follows the principle of consensus, in its meaning of an opinion or position reached by a group as a whole. It is not intended as a de-facto right of veto given to every member.

1.5 MNAPs elect one COMNAP Chair and one or more COMNAP Vice-Chairs as specified in the Rules of Procedure.

1.6 A COMNAP Executive Committee (EXCOM) is constituted by the Chair and Vice-Chair(s), and any other persons as specified in the COMNAP Rules of Procedure. EXCOM members shall all be representatives from different member National Antarctic Programs, reflecting COMNAP's diversity and range of expertise.

1.7 The COMNAP Chair, with the support and advice of EXCOM, chairs the AGM and takes responsibility for COMNAP matters between AGMs .

1.8 COMNAP functions under the general principles of a not-for profit organisation and, for all intents and purposes, subjects itself to normal international principles and standards for organisations like COMNAP.

1.9 COMNAP is domiciled at its Secretariat.

2 Purpose

2.1 The purpose of COMNAP is to develop and promote best practice in managing the support of scientific research in Antarctica, by

- Serving as a forum to develop practices that improve effectiveness of activities in an environmentally responsible manner;
- Facilitating and promoting international partnerships;
- Providing opportunities and systems for information exchange; and
- Providing the Antarctic Treaty System with objective and practical, technical and non-political advice drawn from the National Antarctic Programs' pool of expertise.

3 Membership

3.1 Membership of COMNAP is open to National Antarctic Programs, as defined in paragraph 1.1, not to individuals.

3.2 Membership of COMNAP is open to National Antarctic Programs from nations whose governments are signatories to the Antarctic Treaty and have ratified its Protocol on Environmental Protection. There can be only one member National Antarctic Program per nation.

3.3 Members must comply with this constitution and the Rules of Procedure.

3.4 While structures can differ widely from country to country, what characterises and unifies member National Antarctic Programs is their national responsibility to manage the support of scientific research in the Antarctic Treaty Area.

3.5 Each member National Antarctic Program is represented on COMNAP by a lead national agency.

3.6 Whenever this lead agency has a broader mission, only those parts of the organisation that have this national responsibility are considered part of the “National Antarctic Program” member of COMNAP.

3.7 Whenever this national responsibility is divided between several national organisations, the lead agency will, as appropriate, organise for relevant parts of the other national organisations to participate in the work of COMNAP under its authority and responsibility.

4 Secretariat

4.1 A COMNAP Secretariat serves and supports the functional needs of COMNAP and is accountable to the COMNAP Chair

4.2 The COMNAP Secretariat is subject to the laws and regulations of the country it is domiciled in.

5 COMNAP Finances

5.1 The income of COMNAP is obtained from the following:

- an equal annual contribution ("membership fee") from each of its member National Antarctic Programs, as determined by the MNAPs at an AGM;
- any additional, voluntary contributions from member National Antarctic Programs;
- any grants from external bodies, as and if agreed by the MNAPs at an AGM.

5.2 COMNAP funds are intended to support the internal work of COMNAP to support its activities and purpose. The level of the annual contribution should be kept under regular review to ensure it best meets the needs of COMNAP and provides best value to members.

5.3 The COMNAP budget is approved by the MNAPs at each AGM.

6 Representation of COMNAP

6.1 The COMNAP Chair is the official representative of COMNAP. If unavailable one of the Vice-Chairs or another representative agreed by EXCOM will represent COMNAP.

7 Preamble and Rules of Procedure

7.1 A Preamble and Rules of Procedure complement this constitution but are not part of it. Both are subject to the rules, principles and intent of this constitution, and can be separately amended by the MNAPS at an AGM as and when required. Any new version takes effect at the time it is approved and supersedes any previous version.

8 Modification of this COMNAP Constitution

8.1 This COMNAP Constitution may be modified by agreement of the MNAPs at an AGM.

SCAR's Annual Report

Executive Summary

The Scientific Committee on Antarctic Research (SCAR) is the foremost, non-governmental organisation for initiating, developing, and coordinating high quality international scientific research in the Antarctic region including the study of Antarctica's role in the Earth System.

During 2008, SCAR's research continued focusing on five themes: (i) the modern ocean-atmosphere-ice system; (ii) the evolution of climate over the past 34 million years since glaciation began; (iii) the response of life to change; (iv) preparations to study subglacial lakes and their environs; and (v) the response of the Earth's outer atmosphere to the changing impact of the solar wind at both poles. Highlights of recent scientific discoveries include:

1) Decadal warming and freshening of intermediate-depth water masses across large regions of the Southern Ocean since the 1960s has likely been driven by decadal-scale changes in the major modes of Southern Hemisphere climate variability (such as the Southern Annular Mode, El Niño - Southern Oscillation and the Inter-decadal Pacific Oscillation). The same water masses show reduced oxygen content, suggesting a decline in the rate of ventilation of the Southern Ocean's intermediate layers in that period.
2) Direct sampling of Antarctic subglacial lakes is now close to becoming a reality. The subglacial lake community has proposed three programs (one each led by Russia, the UK, and the USA) to directly sample a lake beneath the Antarctic ice sheet. The Russian and UK proposals are funded and plan to enter Subglacial Lakes Vostok and Ellsworth within the next 2-4 years. The US plan to examine an entire watershed beneath the Mercer and Whillans Ice Streams beneath the West Antarctic Ice Sheet is now in review.
3) Application of traditional and molecular biological techniques to marine organisms and terrestrial microbes supports long-term persistence of biota across the Antarctic continent and continental shelf. In combination with programmes such as the Census of Antarctic Marine Life (CAML), and the increasing use of SCAR biodiversity databases, data are now available to provide a benchmark assessment of the status of Antarctic biodiversity, and objective advice on the status and threats of non-indigenous organisms.
4) The NASA THEMIS mission has shown that sudden auroral brightenings (at so called substorm onsets) are associated with a global disruption in the electric currents flowing across the near-Earth magnetotail. Tests of the extent to which auroral events in both hemispheres are joined together (inter-hemispheric conjugacy) have long shown that some auroral structures are synchronous and may even pulsate in tune (i.e. are conjugate). Recent observations with ground-based all-sky TV-cameras confirm this conjugacy, but also show some non-conjugate auroras: (i) pulsating auroras in both hemispheres with different spatial appearance and period, and (ii) pulsating auroras in one hemisphere only.

SCAR organized with the International Arctic Science Committee (IASC) the first International Polar Year science conference, which took place in St Petersburg, Russia, in July, and attracted 1150 attendees. SCAR's legal status changed during the year; it is now a Company Limited by Guarantee, and a UK Charity, while still an Interdisciplinary Body of the International Council for Science (ICSU). Three SCAR Medals and Four SCAR Fellowships were awarded. SCAR continues to provide high quality independent scientific advice to the Antarctic Treaty Parties.

1. What is SCAR (for further details, see www.scar.org)?

The Scientific Committee on Antarctic Research (SCAR) is the main non-governmental organization responsible for the international coordination of scientific research in the Antarctic region. SCAR is an Interdisciplinary Body of the International Council for Science (ICSU). ICSU formed SCAR in 1958 to continue coordinating the scientific research in Antarctica that began during the International Geophysical Year of 1957-58. The need for such coordination has grown as the role of Antarctica in the global system has become apparent, and continued unabated in the International Polar Year (IPY) 2007-2008, in which SCAR played a leading role. SCAR's Members currently include 35 nations and 9 of ICSU's Scientific Unions, which link SCAR to a wide range of scientific activities.

SCAR aims to improve understanding of the nature and evolution of Antarctica, the role of Antarctica in the Earth System, and the effects of global change on Antarctica. It initiates, develops, and co-ordinates high quality international scientific research in the Antarctic region and on the role of Antarctica in the Earth system. SCAR carries out a comprehensive programme of coordinated scientific research that adds value to national research in the Antarctic by enabling national researchers to work together on large-scale scientific questions. Collectively, SCAR programmes can often accomplish research objectives that are not easily obtainable by any single country, research group, or researcher.

Through its biennial Open Science Conference (co-sponsored in 2008 with the International Arctic Science Committee (IASC) in St Petersburg, Russia), SCAR provides a forum for the community of polar scientists, researchers, and students to report on the latest science, exchange ideas and explore new opportunities. SCAR and IASC are together cosponsoring the 2nd IPY Open Science Conference planned for Oslo in June 2010. SCAR also supports research Fellows and young scientists and provides a broad range of data management and information products and services.

SCAR helps to coordinate polar scientific research by leading a network of the four main bodies of the International Council for Science (ICSU) concerned with polar and/or cryosphere research: SCAR, the World Climate Research Programme (WCRP), IASC, and the International Association for Cryospheric Sciences (IACS). SCAR leverages limited resources by partnering with selected global science programmes, providing them with an Antarctic perspective. These are the World Climate Research Programme (WCRP), parts of the International Geosphere-Biosphere Programme (IGBP), the International Permafrost Association (IPA), the Global Ocean Observing System (GOOS), the Partnership for Observations of the Global Ocean (POGO), the Census of Marine Life (COML), the Global Biodiversity Information Facility (GBIF), the Scientific Committee on Oceanic Research (SCOR), and the Scientific Committee on Solar Terrestrial Physics (SCOSTEP).

SCAR also provides independent scientific advice on the knowledge and principles needed for wise management of the Antarctic environment by the Antarctic Treaty Parties (through Consultative Meetings); the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); the Commission for the Conservation of Antarctic Seals (CCAS); the Advisory Committee of the Agreement on Conservation of Albatrosses and Petrels (ACAP); and the Council of Managers of National Antarctic Programmes (COMNAP).

2. SCAR Science

Everything SCAR does, and how SCAR is perceived as an organization, is rooted in the quality and timeliness of SCAR's scientific portfolio. Even SCAR's advice to the Antarctic treaty System can only be effective if SCAR is scientifically strong. The proof of a concept and its execution is best measured by outcomes. As one measure of quality, external reviews in 2008 of SCAR's five major scientific research programmes were highly satisfactory, reflecting the excellence of the science conducted, how that science has been communicated to the wider world, the international partnerships generated, and the diligence that has been exercised in assuring that SCAR supports the highest quality science. Annual assessment of SCAR's scientific portfolio is assured by procedures for

programme planning, proposing, implementation, reporting and review, which help to ensure continuous improvement.

Renewal is essential to the continuing health of SCAR, and mechanisms are in place to ensure the generation of exiting new projects as old ones come to their end. In July 2008, the SCAR national delegates approved the phasing out of one major programme and its replacement by another at the end of 2009, along with development of a further major programme for approval in 2010. A regular Cross-Linkages workshop provides an incubator for the generation of new programme proposals.

All SCAR's scientific planning, reporting and review is carried out by volunteers. The willingness of the community to participate in assuring success is another metric of the health of SCAR, especially when people have competing demands on their time.

2.1 Major Scientific Research Programmes

SCAR's current research continues to focus on five major Scientific Research Programmes (SRPs), each addressing key issues at the frontiers of science:

- 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 Environments (SALE), a study of lakes 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.

Project Implementation Plans are available at the SCAR web site. Advances in each programme in 2007-8 are summarized below. SCAR welcomes the involvement of scientists in these programmes (enquiries to info@scar.org).

All components of the Earth System are connected. To ensure cross disciplinary interactions address pressing and socially relevant scientific questions in Earth System Science, SCAR fosters strong links among its scientific programmes and with global partners.

2.1.1 Antarctica in the Global Climate System (AGCS)

Antarctica in the Global Climate System (AGCS) focuses on: (i) how does the modern climate system work in Antarctica and the Southern Ocean?; (ii) how has it developed over roughly the last 10,000 years?; and (iii) how may it evolve over the next century. The results will be useful to the Intergovernmental Panel on Climate Change (IPCC) and others. For details see: http://www.antarctica.ac.uk/met/SCAR_ssg_ps/AGCS.htm. AGCS incorporates SCAR's International Trans-Antarctic Scientific Expedition (ITASE) and Antarctic Sea Ice Processes and Climate (ASPeCt) projects. AGCS and its sub-programmes are co-sponsored by SCAR and the World Climate Research programme (WCRP). Several IPY projects contribute to AGCS goals and vice versa. Members of AGCS have given public lectures, visited schools, prepared popular articles and made broadcasts on radio and television.

2.1.1.1 Progress

AGCS is preparing a review on Antarctic Climate Change and the Environment (ACCE), synthesizing knowledge on past present and possible future changes in Antarctica and the Southern Ocean and their impact on the biota. It will be published in 2009. A review of the State of the Antarctic and Southern Ocean Climate System (SASOCS) was published by Reviews of Geophysics early in 2009. A paper in press in the Journal of Climate shows that the interdecadal warming and freshening of mode and intermediate water masses in the Southern Ocean since the 1960s has likely been driven by changes in the major modes of Southern Hemisphere climate variability (Southern Annular Mode, El Niño-Southern Oscillation and Interdecadal Pacific Oscillation). The work is based on oceanographic

observations in the Drake Passage region. Analysis of air temperatures over Antarctica from 1960-2007, using data from SCAR's READER database, shows that near-surface warming on the Antarctic Peninsula has spread into West Antarctica, reaching as far east as the Pine Island Bay-Thwaites Glacier region. It is most marked in recent years, with 2007 being the warmest. While the western Antarctic Peninsula warming is maximal in winter, and the eastern Peninsula warming is maximal in summer, the West Antarctic warming is maximal in spring. Weak near-surface warming is found over East Antarctica. Warming of the Antarctic winter troposphere, previously identified in radiosonde data, is thought due to an increase in the amount of polar stratospheric clouds. The stratosphere has been cooling as a result of greenhouse gas increases. Gap layers (partially melted, honeycomb-like ice matrices filled with seawater) form below a surface layer of snow and ice. They are common within Antarctic summer sea ice, and should be considered when analyzing melting scenarios. A paper in Geophysical Research Letters showed how "gap layers" form during melting.

AGCS has been involved in several field campaigns contributing to IPY, including:

- Multi-national traverses across Antarctica as part of ITASE to measure ice layers, bedrock, snow accumulation rates and ice flow;
- Brazilian-Chilean-USA ice core drilling on the Detroit Plateau, Antarctic Peninsula, for the Climate of the Antarctic and South America (CASA) programme;
- Oceanographic transects across the Southern Ocean and the Antarctic margins as part of the Climate in Antarctica and the Southern Ocean (CASO); and Synoptic Antarctic Shelf-Slope Interactions Study (SASSI) programmes.

AGCS recovers and archives Antarctic data, and has updated the Met-, Ice- and Southern Ocean-READER databases. The Australian Antarctic Data Centre contributes by archiving data on Antarctic sea ice and snow thicknesses collected over the past 30 years from ship expeditions. 80% of the known data is now archived. In future information on physical, chemical and biological properties of Antarctic sea ice cores will be archived.

AGCS organized the ITASE Synthesis Workshop (Castine, USA; 2-5 September), to identify climate changes that impacted the Antarctic over the past 200-1000+ years, as a basis for assessing likely future change. Workshop results will assist collaboration between ice core researchers, meteorologists, oceanographers, and climate modelers.

2.1.1.2 Plans for 2009

Plans include:

- Complete and publish the ACCE report.
- Investigate Tropical-Polar Interactions, with a section of ice cores from the Antarctic Peninsula and along southern South America.
- Quantify Southern Ocean circulation, heat and freshwater fluxes, and investigate the processes controlling the circulation.
- Study variability in synoptic activity over Antarctica and the Southern Ocean.
- Extend proxy data for the Southern Annular Mode.
- Hold the Antarctic Sea Ice Workshop (Lucca, Italy; 22-24 March 2009).
- Hold a workshop on 'Antarctic Climate Change and its impact on terrestrial and marine biodiversity' (Kuala Lumpur, Malaysia; 1-3 April 2009).
- Extend the Met-READER database, making meteorological observations available.

2.1.2 Antarctic Climate Evolution (ACE)

The Antarctic ice sheet began forming 34 million years ago (Ma). Its fluctuations drive changes in global sea level and climate. ACE collects and analyses geological data from selected time periods and integrates them with model results to determine the origin of the present ice sheet configuration and to assess how it grows and decays over time, as the basis for improving forecasts of future ice sheet behaviour and sea level change. ACE links to the ice core community via the International Partnership in Ice Core Sciences (IPICS); to the palaeoclimate community via the past climate change

(PAGES) programme of the International Geosphere Biosphere Programme (IGBP) and the IPY programme on Bipolar Climate Machinery (BIPOMAC); to the IASC programme on Arctic Palaeoclimate and its Extremes (APEX); and to the Antarctic Geological Drilling programme (ANDRILL). The ACE website (www.ace.scar.org) moved to Montclair State University and is being updated and merged with the ACE Blog (www.antarcticclimate.blogspot.com).

2.1.2.1 Progress:

In 2008, ACE produced five key publications:

- A Special Issue on "Antarctic cryosphere and Southern Ocean climate evolution (Cenozoic–Holocene)" published in Palaeogeography, Palaeoclimatology, Palaeoecology, Volume 260. It includes 16 papers on palaeoenvironments and palaeoclimates around Antarctica, based on seismic research, drilling and coring.
- The book "Antarctic Climate Evolution" included in Elsevier's *Developments in Earth and Environmental Science* series (8) (November 2008). 13 chapters explore the state of knowledge concerning the ice and climate history of the Antarctic continent and its surrounding seas throughout the Cenozoic.
- A peer-reviewed review article: Siegert, M.J., Barrett, P., DeConto, R., Dunbar, R., Ó Cofaigh, C., Passchier, S. and Naish, T.: Recent advances in understanding Antarctic climate evolution. *Antarctic Science*, doi 10.1017/S0954102008000941 (2008).
- A special issue, dedicated to Professor Bruce William Sellwood, entitled "The Pliocene: a vision of Earth in the late 21st Century?", published by the Philosophical Transactions of the Royal Society of London A, volume 367. 10 papers explore what we know of the Pliocene Earth, and use of Pliocene analogues in considering future climate change.
- Publication of "Cenozoic East Antarctic Ice Sheet Evolution from Wilkes Land Margin Sediments", as Integrated Ocean Drilling Program Expedition 318 Scientific Prospectus.

ACE has organized special sessions, business meetings and Town Meetings in four major scientific meetings, and co-funded travel for scientists and students to attend these meetings: (i) European Geophysical Union, Vienna; (ii) SCAR Open Science Conference, St. Petersburg; (iii) International Geological Congress, Oslo; and (iv) AGU Fall Meeting, San Francisco. ACE funded a workshop (1-4 July, Granada) of the Circum-Antarctic Stratigraphy and Palaeobathymetry (CASP) Project to make palaeobathymetric maps of the East Antarctic continental margin from 40 Ma to the present, using digital seismic reflection data and rock samples. Such maps set boundary conditions for ocean circulation models and coupled atmosphere-ocean Global Climate Models (GCMs). ACE helped scientists and students participate in the "Pliocene Climate Model Intercomparison Project" (4-6 June, New York).

ACE continues to stimulate and be involved in geological drilling, supporting a planning workshop (29-30 June, Granada) for the scientific planning of the drilling by IODP of the Wilkes Land margin, Expedition 318, scheduled for January-March 2010. During the past two years, the ACE-supported ANDRILL Programme (IPY Project #256), advanced ACE objectives by recovering >2400 metres of sediment from McMurdo Sound. The cores span more than 20 million years (Ma) of climate and ice sheet history and provide numerical models with new constraints on ice sheet behaviour and Ross Sea conditions. In the 07/08 field season, a 1138 m core was re covered from southern McMurdo Sound with an expanded section of the Early-Middle Miocene including the middle Miocene climatic optima (20-14 Ma). A core workshop was held at Florida State University in April; the initial drilling report is in press; and a synthesis of the scientific results was published in the ISAES-X volume (US National Academy Press). New results are under review in a special issue of Global and Planetary Change, and the first set of linked data-model manuscripts are in review with *Nature*. Papers from both projects have been submitted to GSA Bulletin and to Geology. Site surveys for future potential drilling continued in Granite Harbour in the 07/08 and 08/09 field seasons. A new proposal was submitted to NSF for drilling on Coulman High beneath the Ross Ice Shelf. A drilling strategy and technical development report was prepared to define the needs for drilling through thicker, faster moving ice and in shallower water depths. The EuroANDRILL consortium proposal has advanced to the full proposal stage with the European Polar Board.

Plans to undertake deep-field airborne radar surveying of the structure of the East Antarctic ice sheet progressed, with a new ACE-focused programme emerging between the USA, UK, Australia and New Zealand to survey the ice sheet base between Dome C and the coast in 2008/09. Plans were also made for the 08/09 USA-UK-Germany-China airborne survey for the IPY Antarctica's Gamburtsev Province Project (AGAP) on Dome A.

To reach scientists beyond the Antarctic community and convey the significance of Antarctic data to palaeo-oceanographers and palaeo-climatologists worldwide, ACE and PAGES co-hosted a special session at the International Geological Congress, focusing on bi-polar records and linkages. In the January 2009 PAGES Newsletter, ACE and PAGES highlight new paleoclimatic research being conducted at both poles. ACE funded young scientists to attend the 2008 Urbino Summer School in Paleoclimatology, and is aligned with the education and outreach activities of ANDRILL (http://www.andrill.org/iceberg/), which includes developing K-12 teaching resources on Antarctic Climate Evolution.

2.1.2.2 Plans

Plans include:

- First Antarctic Climate Evolution Symposium, Granada, 7-11 September 2009, followed by publication of 1st ACE Symposium Proceedings;
- First ANTscape workshop, April 15-17 2009, Leeds;
- Special sessions and Town Meetings at international meetings (AGU, EGU);
- Annual steering committee meetings at AGU, EGU, SCAR meetings;
- Support for Urbino graduate summer school in paleoclimatology;
- Contribute to the Pliocene Paleoclimate Model Intercomparison Project (PMIP);
- Support development of a European ANDRILL consortium (EuroANDRILL);
- Apply for a Chapman or Gordon conference on bi-polar paleoclimate records.
- Reconfigure and update the ACE website.

2.1.3 Evolution and Biodiversity in the Antarctic (EBA)

EBA aims to understand the evolution and diversity of life in the Antarctic, to determine how these have influenced the properties and dynamics of present Antarctic and Southern Ocean ecosystems, and to predict how organisms and communities will respond to environmental change. EBA integrates work on marine, terrestrial and lake ecosystems. By comparing the outcome of parallel evolutionary processes over the range of Antarctic environments, fundamental insights can be obtained into evolution and the ways in which life responds to change, from the molecular to the whole organism to the biome level. EBA is both a SCAR and an IPY programme. Some 40 national, multinational and/or IPY endorsed projects contribute to EBA, including CAML (Census of Antarctic Marine Life), MarBIN (Marine Biodiversity Information Network), Aliens, TARANTELLA, MERGE (Microbiological and Ecological Responses to Global Environmental Changes in Polar Regions), the Latitudinal Gradient Project, and ICED (Integrating Climate and Ecosystem Dynamics in the Southern Ocean). CAML, MarBIN and ICED are either SCAR activities or sponsored by SCAR.

2.1.3.1 Progress:

More than 150 EBA-related publications will have been published in scientific journals in 2008. EBA Newsletters were distributed in March and October.

EBA facilitates collaboration through workshops and conferences that maximize international and multidisciplinary involvement. In 2008 these included:

- A MERGE workshop, held within the Polar and Alpine Microbiology Conference (Banff, Canada). A publication from NIPR Japan (*Polar Science*) is planned as an outcome of the meeting; EBA funded 3 keynote speakers from Korea, India and the USA.

- An multidisciplinary ICED modelling workshop (April 2008), held to characterise Southern Ocean food webs across trophic levels and geographical areas, and aiming to develop an interdisciplinary approach to Southern Ocean ecosystem modelling.
- an EBA sponsored workshop on "The polar and alpine environments: molecular and evolutionary adaptations in prokaryotic and eukaryotic organisms" (Naples, Italy – 29-30 May 2009), featuring sessions on (i) the structure, function and evolution of cold-adapted protein; (ii) evolutionary biology of polar organisms; (iii) physiological and genomic adaptations to cold environments; and (iv) microbial ecology and biodiversity. The papers will be published in a special issue of *Marine Genomics*.
- EBA assistance for the inaugural meeting of the European Union's "Coordination Action for Research Activities in Life in Extreme Environments" (CAREX) project (18 March), and participation in the 2nd CAREX workshop (December, in Spain). CAREX aims to support research interests across microbes, plants and animals evolving in diverse marine, polar, and terrestrial extreme environments as well as in outer space.
- an EBA sponsored workshop on 'Antarctic Gradients' (May 2008) to examine how the Latitudinal Gradient Project approach in Victoria Land could be used in other parts of Antarctica. One outcome is a review for submission to Ecological Monographs in 2009. A follow-up workshop was held in July in St Petersburg.

EBA is organised into 5 different Work Packages. Highlights include the following:

WP 1: Evolutionary history of Antarctic organisms*:* EBA participants have increasingly worked with SCAR glaciologists and geologists to assess interactions between organisms and their environment trough time. They are contributing to the 'Antarctic Climate Change and the Environment' (ACCE) report. Key papers have appeared in e.g. *J. Biogeog*., and a cross-disciplinary review was submitted to *Quaternary Science Reviews*.

WP2: Evolutionary adaptation to the Antarctic environment*:* Microorganisms in terrestrial habitats including lakes and ponds are studied to understand their evolutionary adaptation to Antarctic conditions. The IPY-MERGE project is making a key contribution. Organisms studied include fungi, methanogens, cyanobacteria, bacteria and microalgal protests (particularly diatoms and green algae). MERGE is bipolar and includes Arctic projects. Genes and proteins in polar fish, invertebrates and bacteria enable studies of thermal adaptation at molecular level. Papers have been published in e.g. *Meth. Enzymol., J. Am. Chem. Soc., IUBMB Life, Current Protein & Peptide Sci*. Several cross-disciplinary reviews have been submitted to *Biol. Rev., Marine Genomics and J. Fish Biol*. The discovery of the neuroglobin gene in icefish brains opens the question "what is the role of Ngb in fishes lacking hemoglobin as an oxygen carrier, as well as in many cases myoglobin"?

WP 3: Patterns of gene flow and consequences for population dynamics: isolation as a driving force*:* Work continues in the Ross Sea Sector. Among terrestrial organisms the work targets rotifers, tardigrades, nematodes, terrestrial arthropods (springtails and mites), lichens and mosses. In the marine realm, New Zealand's RV *Tangaroa* collected fish and invertebrate samples as part on an IPY- CAML voyage. Studies are planned on patterns of gene flow in populations of amphipod crustaceans.

WP 4: Patterns and diversity of organisms, ecosystems and habitats in the Antarctic, and controlling processes*:* Much work is being done through the Census of Antarctic Marine Life (CAML) programme. Antarctic benthic systems are not as stable as once thought. They are exposed to dynamic conditions and respond to environmental changes. In shallow water west of the Antarctic Peninsula, studies focus on the response of assemblages or key species to disturbance by sea-ice and geographical shift. Deeper offshore communities are shaped by iceberg scouring, which can alter biodiversity. Other studies work to correlate biological and physical processes in the water column and sea-ice with higher trophic levels (fish and benthos). Some assemblages show significant pelago-benthic coupling. Studies show that algae, krill and salps, which play a key ecological role as food for predators, are sensitive to atmospheric and oceanic changes. Efforts continue to clarify the tolerance of assemblages to changes in food supply. Gradients are being investigated (e.g. from shallow to deep

waters, or along latitudes) to detect ecological controls and changes over time. The aim is to predict the evolution of marine ecosystems. See recent papers in e.g. *Nature*; *J. Biogeog*., *MEPS*.

WP 5: Impact of past, current and predicted future environmental change on biodiversity and ecosystem function. Dispersal of invasive species is being investigated, their spatial dynamics are being monitored and rates of dispersal modeled. The vulnerability of endemic biota to biological invasions is being assessed, as is the effect of climate change on invasive species. Terrestrial biological diversity is being assessed for a working paper for the ATCM and a review for the scientific literature. EBA has helped evaluate human impacts on the environment, in the context of examining the effectiveness of the Environmental Protocol (Tin et al. 2009, *Antarctic Science*). EBA also contributes to the new SCAR Action Group on Prediction of Changes in the Physical and Biological Environments of the Antarctic.

In part EBA's success rests on the extent to which biological data can be maintained, archived and exchanged, much of which is done through the Australian Antarctic Data Centre, which hosts and maintains a Biodiversity Database on Antarctic and sub-Antarctic flora and fauna (http://data.aad.gov.au/aadc/biodiversity/). EBA also relies on other databases such as SCAR-MarBIN (below), MERGE, and the Southern Ocean Continuous Plankton Recorder Programme (SO-CPR). EBA has a portal within the Antarctic Master Directory allowing access to metadata that contribute to EBA's aims. To view the portal – go to: http://gcmd.nasa.gov/KeywordSearch/Home.do?Portal=eba&MetadataType=0.

The SCAR-Marine Biodiversity Information Network (SCAR-MarBIN) supports and develops a network of databases, institutes and people and gives open access to information on marine biodiversity for science, conservation and management. SCAR-MarBIN has set up the first authoritative Register of Antarctic Marine Species (RAMS), which feeds larger taxonomic systems such as the World Register of Marine Species, the Catalogue of Life, or the Encyclopaedia of Life. RAMS includes information on 13,000+ taxa and is updated and checked by a board of specialists. MarBIN also gives access to occurrence and abundance data from 115 interoperable databases, reaching over 913,000+ records, which are also published through the Ocean Biodiversity Information System (OBIS) and the Global Biodiversity Information System (GBIF). Main ongoing developments include a new data portal to give access to new features, including access to genetic data, expeditions and experts databases, interactive identification keys, field guides and a new intuitive interface including a powerful search engine. MarBIN is funded by the Belgian Science Policy until September 2009, and seeks support to sustain its future, including: (i) forming a consortium of contributing countries under SCAR and CCAMLR and (ii) approaching private foundations for specific projects (http://www.scarmarbin.be).Failure of national operators to secure the future of SCAR MarBIN will have a considerable negative impact on the Antarctic marine biological research community.

Census of Antarctic Marine Life (CAML)

CAML is part of EBA and of the global Census of Marine Life. It is one of the major achievements of the IPY, having coordinated 18 major research voyages in the Southern Ocean. CAML has pioneered new understandings of the evolution and diversity of life, and provided comprehensive baseline information on Antarctic marine biodiversity that will be a benchmark against which future change in marine communities around Antarctica can be assessed. Scientific results are available via SCAR-MarBIN (above). As one example of the CAMNL approach, in early 2008, CAML scientists participated in the Collaborative East Antarctic Marine Census aboard Japan's *Umitaka Maru*, France's *L'Astrolabe* and Australia's *Aurora Australis*. They studied sea-bed communities and the deep pelagic (open ocean) zone of the region adjacent to Terre Adélie and George V Land. CAML has shown that the Southern Ocean is unexpectedly rich in marine life, contrary to expectation. The seafloor around Antarctica is now seen to be a single benthic bioregion. Molecular techniques show Antarctica to be the birthplace of many species, driven by glacial cycles over millions of years. For example, eight genera of octopus were present in Antarctica 30 million years ago. Since then, different octopus types have repeatedly colonised the deep sea, radiating northwards when the ice retreated. Similar patterns are observed with other species, including asellote isopods (crustaceans) and pycnogonids (sea spiders). Melting ice shelves have exposed seafloor communities to light for the

first time; during the first CAML expedition, on *Polarstern*, the disintegrating Larsen A and B ice shelves revealed areas of the continental shelf attracting life from deeper waters on the slope, including sponges that rapidly colonise the seafloor disturbed by ice scour. In partnership with Canada's Guelph University, CAML is 'barcoding' (analysing DNA sequences) for some 2,000 Antarctic species, with SCAR-MarBIN creating related data storage, analysis and visualization tools. Analysis of genetic variation in Antarctic and subAntarctic seas will then be possible; it will help identify new species and 'cryptic' species (species difficult to distinguish from each other). The data will contribute to the Barcode of Life data system.

During CAML voyages, a team coordinated by the Equipe Cousteau (www.cousteau.org), sent words and pictures around the world via blogs, and online and print articles (see websites of EducaPoles (www.educapoles.org/index.php?/home/), CAML (www.caml.aq), SciencePoles (www.sciencepoles.org/index.php?/home/), and the International Polar Foundation (www.polarfoundation.org).

CAML is made possible by support from a broad range of private sources and government agencies in many nations. It will end with the end of the Census of Marine Life programme in 2010. Related initiatives including barcoding and the Encyclopaedia of Life www.eol.org are expected to continue beyond 2010 if funding is available. CAML's international network of researchers in marine biodiversity will continue under the auspices of SCAR, addressing the central EBA themes of biodiversity and evolution in Antarctica.

2.1.3.2 EBA Plans for 2009

Plans include:

- Complete and publish the ACCE report;
- Support the investigation of environmental gradients;
- Support the collation of terrestrial biogeographical data, and its analysis in terms of Antarctic regionalisation;
- Provide advice to CEP on biodiversity and conservation within Antarctica;
- Support studies of the risks of transfer of non-native species into Antarctica;
- Support continuation of SCAR MarBIN database development;
- Support completion of relevant IPY programmes (including EBA-IPY, MERGE, CAML, Tarantella, Aliens in Antarctica)
- Contribute to a workshop on 'Antarctic Climate Change and its impact on terrestrial and marine biodiversity' (Kuala Lumpur, Malaysia; April 2009).
- Sponsor a workshop on "Genomics, Proteomics and High Technologies in Polar Biology", Rome, Italy (Spring 2009).
- Contribute to the SCAR Biology Symposium, Sapporo, Japan (July 2009).

2.1.4 Subglacial Antarctic Lake Environments (SALE)

The SALE programme promotes, facilitates and champions international cooperation to better understand subglacial aquatic environments in Antarctica. It also promotes and advances environmental stewardship in the exploration of these unique settings. SALE contributes to the IPY under the auspices of the SALE-UNified International Team for Exploration and Discovery (SALE-UNITED) programme. SALE's members are funded through their national programmes to conduct SALE science; additional funding from SCAR allows for the convening of a yearly meeting. The SALE website contains details on the programme (http://scarsale.tamu.edu/). SALE produces a weekly email highlighting subglacial lake research and related topics to more than 150 scientists worldwide.

2.1.4.1 Progress

Knowledge of subglacial aquatic environments has reached a level where major proposals are now being submitted for funding by individual national programmes to directly sample the subglacial

environment. These projects, if funded, will sample subglacial systems in compliance with current environmental protocols. The data obtained will provide the basis for future research and discovery. Three highlights follow:

- Subglacial Lake Ellsworth: In December 2008, the UK's Natural Environmental Research Council (NERC) awarded funding for sampling Subglacial Lake Ellsworth in 2012/2013. This £6.7 million programme involves ten UK universities and research institutes, and three US institutions. The team will use hot water drilling to penetrate the lake's ice roof without contaminating the water body below. A probe will then enter the lake and collect measurements and samples. A gravity core will be collecting a 2-3 m sediment core from the lake bed. Instrument development and testing will be completed in the next three years.
- West Antarctic Ice Streams: Proposals to the National Science Foundation include:
    - "Lake and Ice Stream Subglacial Access Research Drilling" (LISSARD) – to study lakes beneath Mercer and Whillans ice streams;
    - "Robotic Access to Grounding-zones for Exploration and Science" (RAGES) - to study nearby hydraulically-linked ice stream grounding zones.
    - "GeomicroBiology of Antarctic Subglacial Environments" (GBASE) - to study biodiversity and biogeochemical transformations within these systems.

  Sampling in 2010/2011 will yield data on the glaciological, geological and microbial dynamics of these environments and test the idea that the hydrology in these environments exerts a major control on ice sheet dynamics, geochemistry, metabolic and phylogenetic diversity, and the biogeochemical transformations of major elements.

- Subglacial Lake Vostok: In 2007/08 the Russian Antarctic drilling programme at Lake Vostok included drilling in borehole 5G-1, radio-echo sounding, and seismic studies. From radio-echo sounding completed in January 2008 maps were made of the coastline of the lake and of the water layer thickness. Seismic studies of the water layer and of sediment rock thickness were also completed then. During 2008-09, radio-echo sounding was conducted beyond the lake limits and preparations were underway to conduct seismic measurements of the geological structure of the Earth's crust. The plan is to extract the stuck drill in January 2009 so that drilling operations can continue with a modified drill.

The US National Aeronautics and Space Administration (NASA) has funded development of a sub-ice robot ("Endurance") to characterize the physical and chemical environment of subglacial lakes. Endurance was deployed in late 2008 in Lake Bonney (McMurdo Dry Valleys), collecting the first 3-dimensional data on a permanently ice-covered lake. The robot also mapped the intersection of the Taylor Glacier with the water of Lake Bonney.

Belgian modellers continue to synthesize and integrate data to better understand the deglaciation history of the Antarctic ice sheet and the mechanisms involved in grounding line migration. Current research focuses on ice rises (pinning points) along coastal Dronning Maud Land (DML). Modelling used radar data to define how long the ice flow remained local on the ice rise, which constrains the deglaciation history. Results of radar and ice analyses will show whether pinning points play a stabilizing role in the dynamics of grounding lines and the role of marine ice, to improve present-day ice sheet models that incorporate grounding line migration. Regional ice sheet model experiments focusing on the DML sector will quantify the contribution of this area to sea level rise over the last 20,000 years. The project started in late 2008 when >150km of radar data were collected and several tens of meters of ice cores were collected close to the grounding line.

During 2008 SALE has:

- built a community via workshops, meetings, and sessions at scientific meetings;
- identified major scientific and technological goals for SALE research and exploration through active engagement of the community;
- held regular meetings that serve as forums for the discussion of science and technology amongst national programmes;

- educated the public through extensive coverage of SALE science in the press;
- provided a framework for developing a code of conduct for Antarctic subglacial exploration. SCAR has formed an action group to finalize this plan;

The number of SALE-related papers in peer-reviewed journals is increasing each year (see lists of publications by year at http://scarsale.tamu.edu/selected-publications. Two major review papers were published in 2008, summarizing much of what is known about subglacial ecosystems. Many papers have been published in Science and Nature on various aspects of SALE science during the last few years.

2.1.4.2 Plans for SALE

Plans include:

- SALE meeting in Brussels, Belgium in June 2009. The outcome will be summarized in a white paper and submitted for publication in a journal.
- SALE meetings will include students, on the advice of the local organizers and APECS representatives.
- Continue to propose and organize sessions at major earth and polar science meetings and venues (e.g. AGU, EGU).
- An AGU Chapman Conference on "Exploration And Study Of Antarctic Sub-glacial Aquatic Environments" has been funded for Washington, DC, in 2010.

2.1.5 Inter-Hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research (ICESTAR)

ICESTAR is creating an integrated, quantitative description of the upper atmosphere over Antarctica and of its coupling to the global atmosphere and the geospace environment.

2.1.5.1 Progress

ICESTAR continues to provide leadership in IPY Project # 63 - *Heliosphere Impact on Geospace*, which includes 29 international research groups and is jointly managed by the International Heliophysical Year (IHY) group. The ICESTAR/IHY team convened the 2008 Polar Gateways Arctic Circle Sunrise conference at Barrow, Alaska, during the first week of local polar sunrise, January 23-29, 2008, to address the earth, planetary, and heliophysical science and future exploration of polar and icy worlds in the solar system. The event held satellite sessions in NASA Centers, US universities, research institutes around the Arctic Circle (in Norway, Sweden and Russia) and Antarctica, communicating between sites through video- and teleconferences. Discussions included some on the advantages of polar icy regions for testing instrumentation for different planetary missions and outer solar system exploration. Presentations were web broadcast through the videoconferencing facilities of the University of Alaska, Fairbanks. Several educational sessions arranged in Barrow Point were also made available for the US participating schools through the NASA Digital Learning Network (see the Arctic Sunrise home site at http://polargateways2008.gsfc.nasa.gov/).

Riometers are emerging as an important tool in both space science and space weather. Riometers measure the ionospheric opacity for radiomagnetic noise that comes from distant stars and galaxies. The intensity of this noise depends on the ionization level in the ionosphere and thus riometers can be used to monitor solar activity effects in the upper atmosphere. Global networks of imaging and single beam riometers support studies of high energy central plasma sheet and radiation belt electron precipitation, dynamic magnetosopheric processes such as dispersionless injections, the effect of geospace processes on high latitude atmospheric composition and dynamics, and the effects of polar cap high energy proton precipitation on communications. The growing global network of riometers facilitates studies of processes involving the production, transport, and loss of high-energy magnetospheric particles at all spatial scales. Many of these cheap instruments could be deployed in dense continent-wide networks. Agreements between data providers, under the auspices of the IPY-ICESTAR and GLORIA (GLObal RIometer Array) initiatives, and facilitated by the GAIA Virtual Observatory, are on the verge of enabling ready access to these data. The Third International

Workshop on Riometry was held on June 22, 2008 at the Zermatt Resort in Midway Utah. See http://www.riometer.org for details.

The ICESTAR team helped to develop the Global Auroral Imaging Access (GAIA) data portal; see http://gaia-vxo.org. GAIA is a virtual observatory for dealing with data from geospace optical and riometer systems. While these two instruments differ in observational technique, they both remotely sense auroral precipitation. GAIA is a network-based set of tools for browsing summary data from All-Sky Imagers (ASIs), Meridian Scanning Photometers (MSPs), and riometers worldwide. It provides indexes for direct access to data. Over 10,000,000 summary images are registered in the GAIA database. They and the associated metadata provide a link to hundreds of "imager years" of data from observational programs in at least seven countries. Version 2 of GAIA was rolled out before summer 2008, with at least an order of magnitude more summary data, mirror sites at Lancaster, the Finnish Meteorological Institute, and Natural Resources Canada, tools for creating value added data products (e.g., movie making tools, and calibration information), ingestion of data in real-time, and direct access to some full-resolution data (NORSTAR, for example). This program is the virtual observatory component of the IPY Auroral Optical Network (AON) and GLORIA projects, and falls under the ICESTAR IPY umbrella.

ICESTAR held a dedicated session in the Open Science Conference in July. 13 articles on ICESTAR-related research from the Greenland Space Science Symposium (part of the ICESTAR-IHY IPY programme) were published in 2008 in a special issue (vol. 70, issue 18) of the Journal of Atmospheric and Solar Terrestrial Physics, on "Transport processes in the coupled solar wind–geospace system seen from a high-latitude vantage point".

In 2007, the community using the system of European incoherent scatter (EISCAT) radars and arranged a workshop in Åland (Finland), accompanied by a two-week summer school to teach students to use the radar facilities. 100 abstracts were submitted. A special issue with papers from the workshop was planned for 2008 in Annales Geophysicae.

2.1.5.2 Plans for 2009

The aim is to deliver a wide variety of products ranging from a better scientific understanding of the polar atmosphere to a data portal that will enable scientists to create a systems-view of the polar region, including:

- Continued development of the GAIA data portal;
- Quantifying the role of seasonal differences in polar ionospheric conductance and the effects on magnetospheric, ionospheric, and thermospheric dynamics;
- Constraining models based on conjugate remote sensing of inner magnetospheric dynamics;
- Characterizing the basic state of the polar middle atmosphere;
- Quantifying the AC and DC global atmospheric circuit;
- Holding a team meeting in Brazil.

2.2 Specific SCAR Research Areas

2.2.1 Life Sciences Group

The Standing Scientific Group for the Life Sciences (SSG-LS) is responsible for a number of activity areas aside from EBA and SALE (above).

(i) Higher Predators: The Expert Groups on Seals and Birds have been merged to become the Expert Group on Birds and Marine Mammals. The group will meet in 2009, where the provisional Terms of Reference will be examined. An evaluation of the group will be made after 2 years and be reported to the SSG-LS meeting at XXXI SCAR in 2010.

(ii) Human Biology and Medicine: A recent request to national committees has led to recruitment of 3 new members. Meetings have been held jointly with COMNAP's MEDINET group. The Expert

Group continues to promote its activities and its members undertake the majority of the medical research carried out in the Antarctic.

(iii) ICED (Integrating Climate and Ecosystem Dynamics in the Southern Ocean). The ICED Science Plan and Scientific Steering Committee have been formally approved by the Global Ecoystems Dynamics programme (GLOBEC) and the Integrated Marine Biogeochemistry and Ecosystem Research programme (IMBER) (see www.iced.ac.uk). A list of nominees for the ICED Scientific Steering Committee is being considered.

A number of meetings were held:

- ICED held its first modelling workshop in April 2008 at Old Dominion University in Norfolk, Virginia. The workshop aimed to begin developing circumpolar ecosystem models to predict responses to variability and change. Three newsletter articles were published (IMBER, EBA and CCPO Circulation); a report is being drafted and will be available on the ICED website; and a scientific paper is in preparation for submission to a high profile journal in 2009.
- A presentation on ICED was made at the ESSAS (Ecosystem Studies of Sub-Arctic Seas) Annual Science Meeting, Nova Scotia, Canada, September 2008, enabling discussion of potential areas for collaboration on polar ecosystem issues;
- An ICED/ESSAS session on Climate Influences and Biological Controls in High Latitude Marine Ecosystems was part of the IGBP Conference in Cape Town in May 2008, facilitating discussion and synthesis of current research on control mechanisms and feedbacks in the marine ecosystems of the Southern Ocean;
- Results from the ICED modelling workshop were given at the Advances in Marine Ecosystem Modelling Research (AMEMR) meeting, Plymouth, June 2008;
- A joint session on Polar Marine Ecosystems: Status and Change was convened by ICED and CAML for the Open Science Conference in St Petersburg, in July 2008.
- Several ICED-related presentations were made at the EUR-OCEANS final meeting in Rome, Italy, November 2008. A final report has been submitted highlighting ICED achievements in partnership with the EUR-OCEANS Southern Ocean System.

Two recent EUR-OCEANS funded projects (*EUR-OCEANS Southern Ocean System and ICED data rescue projects*) contributed to the data synthesis aims of ICED. Southern Ocean species distribution and abundance data were retrieved from historic cruises spanning 1925-85. Data have been submitted to EUR-OCEANS WP 2.2 and included in the PANGEA database. We are building on these projects to further ICED data activities.

For the ICED-IPY project a web-based system has been developed for collating information on relevant field activities. This information is fed to a live virtual globe layer (GoogleEarth). This is the first stage developing a useful tool for coordinating existing fieldwork and targeting potential future fieldwork. The map layer is linked to a database to ensure integration with other relevant IPY ocean projects. Developing a GoogleEarth layer to display long-term ecosystem monitoring sites in the Southern Ocean will contribute to the Southern Ocean Observing System (SOOS) (see below).

Future plans include:

- Publication and PR for the ICED Science Plan/Implementation Strategy;
- Establish the steering committee and convene the first meeting;
- Follow up the first modelling workshop in terms of developing outputs;
- Hold an ICED-IPY event in Portugal, probably 2010;
- Further develop the GoogleEarth approach.
- Contribute to the GLOBEC synthesis meeting in June 2009.

(iv) The Action Group on Continuous Plankton Recorder Research (CPR-AG): The Southern Ocean CPR Survey (SO-CPR) is progressing well. The 2007/08 season was the most successful to date, with 90 tows around Antarctica using eight vessels from seven countries. This included tows in the Amundsen Sea and Bellinghausen Sea, which have received little attention in the past. 25,000 nautical miles or 5000 sample records will be added to the CPR data set and to CAML (Census of

Antarctic Marine Life). New Zealand's Ministry of Fisheries has secured funding for the next five years to run CPRs on toothfish fish vessels operating between NZ and the Ross Sea. This will improve sampling in the western Pacific region. The South American LA-CAML consortium will join the SO-CPR Survey this season 2008/09, with tows across Drake Passage. CPR data are being used by a global study that has observed a general shift in dominance from large to smaller copepod species. The SO-CPR Survey observed a change from krill to small copepods in the sea ice zone around year 2000. In 2004/05, a massive increase in foraminiferan numbers occurred; this group increased from a long-term average of 2% to >50% numerical dominance. CCAMLR uses the data in its bioregionalisation research, a first step towards the possible development of Marine Protected Areas. At XXX SCAR (July 2008) the CPR Action Group was elevated to Expert Group status due to the expansion of this work, its long-term nature, and its linkages and successes. The SO-CPR Survey is now an official SCAR Product.

(v) Cross-SSG Action Group on Prediction of Changes in the Physical and Biological Environments of the Antarctic. This new Action Group was created at XXX SCAR in July 2008, and members are now being appointed. A report of the initial meeting in late 2008 is on the website.

(vi) Cross-SSG Action Group on Code of Conduct for the Exploration and Research of Subglacial Aquatic Environments (AG-CCER-SAE). This new Action Group was created at XXX SCAR in July 2008, and members have been appointed.

(vii) Cross-SSG Action Group on King George Island. The Terms of Reference and membership of this Action Group were revised at XXX SCAR in July 2008, and new members have been appointed. A paper has been developed for discussion with COMNAP in 2009.

(viii) Action Group on Biological Monitoring. The AG Biological Monitoring produced the report "Practical Biological Indicators of Human Impacts in Antarctica" in 2006, and was disbanded in 2008.

(ix) Environmental code of conduct for terrestrial scientific field research. The SSG-LS has produced a unified code of conduct for fieldwork anywhere in the Antarctic, including protected areas, to help scientists avoid introducing alien propagules into the Antarctic. This has involved extensive consultation within the SCAR community and with COMNAP. It will be submitted as an Information Paper to the ATCM and CEP in April 2009, and has been available on the SCAR web site since autumn 2008.

(x) Global Ocean Ecosystems Dynamics (GLOBEC). SCAR continued its co-sponsorship of the Southern Ocean GLOBEC project of the IGBP.

(xi) Global Biodiversity Information Facility (GBIF): In 2008 SCAR obtained Associate Participant status in GBIF. SCAR will be involved in the governing of GBIF and in implementing GBIF's goals and work plan.

(xii) Action Group on Antarctic Fuel Spills (AGAFS): In the wake of the sinking of the MV Explorer on 23 November 2007, SCAR created an Action Group on Antarctic Fuel Spills (AGAFS). AGAFS will address issues that might arise related to the fate and effects of fuel releases in Antarctica. The group will respond when specific advice is requested.

(xiii) SCAR Biology Symposium. Preparations are underway for the 10th SCAR Biology Symposium (26 – 31 July 2009), which will be held at Hokkaido University, Sapporo, Japan. See web site for details.

2.2.2 Geosciences Group

The Standing Scientific Group for the Geosciences (SSG-GS) contains several Expert and Action Groups aside from the Scientific Research Programmes ACE and SALE.

(i) The Expert Group on Geodetic Infrastructure of Antarctica (GIANT): provides a common geodetic reference system for all Antarctic scientists and operators. It also contributes to global geodesy for studying the physical processes of the earth and the maintenance of the precise terrestrial reference frame, and provides information for monitoring the horizontal and vertical motion of

Antarctica. The SCAR GIANT team is a leader in the bipolar IPY POLENET (Polar Earth Observing Network) project, to which GIANT contributes the Antarctic GPS component.

(ii) Solid Earth Response and influences on Cryospheric Evolution (SERCE) Scientific Programme Planning Group: This team is developing a scientific research programme that will capitalize on GIANT, on the former Antarctic Neoteconics (ANTEC) programme terminated in July 2008, and on developments made by the IPY POLENET programme in 2007-2009. Delegates at XXX SCAR approved the formation of SERCE as a planning group to develop a full proposal for consideration at SCAR in 2010. The drive for SERCE recognizes that neotectonic motion across Antarctica will occur due to displacements on active structures, deformation associated with active volcanism, and glacio-isostatic adjustment (GIA) of the Earth in response to changes in ice mass load. Predicted vertical motions due to GIA exceed 4 mm/year over large areas of the continent and range up to 20 mm/year - rates that can be measured with precision by GPS. Discovering modern structural displacements (for example across the West Antarctic rift system) and testing different GIA models requires a distributed array of GPS stations across the continental interior. GIA is the response of the Earth to past and present-day changes in ice sheets and glaciers. In most parts of Antarctica it is the main process causing neotectonic crustal motions. GIA models combine an ice sheet history with an assumed Earth rheology to predict past and present crustal motion, sea-level change, and changes to the Earth's gravitational field. To obtain more accurate earth models for GIA predictions, we need to know how the physical properties and thermal structure vary laterally and with depth in the East and West Antarctic crust and mantle. Many of the needed GPS measurements of crustal motion are being made by POLENET for the IPY period. Deployment of GPS stations in optimal positions with respect to historical and modern ice mass changes, and at sufficiently high spatial resolution, will provide robust constraints on ice models, improving our ability to predict sea-level change. SERCE will provide the internationally coordinated approach to data analysis and synthesis necessary to optimize the science outcomes of these new data sets. That will enable the GIA component to be removed from satellite signals that include a GIA component, so providing a more accurate picture of ice mass balance.

SERCE aims to improve understanding of the solid Earth response to cryospheric and tectonic forcing by:

- Integrating and synthesizing geodetic observations obtained from the multinational POLENET geophysical network during IPY to obtain a vertical and horizontal velocity field across the continent.
- Integrating and synthesizing seismological data obtained from the POLENET geophysical network during IPY to map Antarctic lithospheric and upper mantle structure and rheological properties.
- Synthesizing available observations and carrying out glaciological modelling to improve understanding of Antarctic Ice Sheet (AIS) evolution since the Last Glacial Maximum (LGM).
- Developing improved models of glacial isostatic adjustment (GIA) constrained by vertical crustal motion observations (objective 1), improved earth structure (objective 2), and improved ice sheet history (objective 3).
- Improving the estimates of present-day ice mass balance obtained from satellite observations. [Provision of improved constraints on the rates of gravitational change and crustal uplift due to GIA will remove one of the largest uncertainties in analysis of satellite data for present-day change].
- Documenting ice sheet boundary conditions and subglacial processes from seismological and glacial surface motion observations.
- Determining seismicity levels in Antarctica and linking them to cryospheric and tectonic processes.
- Improving understanding of neotectonic processes through analysis of improved earthquake catalogues and horizontal crustal motion observations.
- Improving understanding of ionospheric and tropospheric processes through analysis of new POLENET space-geodetic observations.

The SERCE programme planning group will convene a multidisciplinary workshop to establish priority research themes and groups for the SERCE programme probably in April, 2009, before or after EGU, to be held in Modena, Italy.

(iii) Joint SSG-GS/SSG-PS Action Group on GPS for weather and space weather forecast: The POLENET and ICESTAR communities working on the IPY project for Upper Atmosphere Monitoring are cooperating to achieve (i) ionospheric imaging over Antarctica; (ii) exchange of data and expertise for the application of tomography to other fields of interest (e.g. 3D water vapour reconstruction); (iii) exchange of technologies to install and manage remote GPS stations; and (iv) the possibility of hosting instruments in the polar stations. Initial work has been dedicated to first attempts to exchange data and expertise on ionospheric imaging and on the mitigation of ionospheric effects on Global Navigational Satellite System (GNSS) signals. A feasibility study is in process on the use of Antarctic measurements for estimating water vapour. Global tropospheric models for water vapour retrieval were implemented in the analysis of geodetic observations to improve the estimation process of zenith total delay with GPS data. Comparisons with old models are being carried out with alternative techniques such as radiosondes, for estimating water vapour content. Common data sets from different techniques and overlapping observations periods have been identified and adopted as benchmarks on which cross checking can be performed and integrated water vapour can be computed. Papers and posters have been presented at workshops and meetings during the year. Representatives of the group met during the AGU Fall Meeting in San Francisco in fall 2008. A workshop is planned for May 2009 (in Italy) to stimulate international collaboration on the use of GPS for neutral/ionized atmosphere investigations over Arctic and Antarctica, to coordinate the efforts on data management, and to optimize the use of existing facilities.

(iv) Expert Group on the International Bathymetric Chart of the Southern Ocean (IBCSO). Southern Ocean bathymetry defines ocean gateways and barriers, drives ocean currents and ocean mixing, controls thermohaline circulation with Antarctic bottom water formation, and so influences global climate. The IBCSO group aims to produce the first bathymetric map of the Southern Ocean to address those topics. The Intergovernmental Oceanographic Commission (IOC) of UNESCO and the International Hydrographic Organization (IHO) accept IBCSO as a regional ocean-mapping program and provide assistance through the Hydrographic Commission on Antarctica. The GIS-based IBCSO is also a contribution to the IOC/IHO General Bathymetric Chart of the Oceans (GEBCO). IBCSO and its new SCAR sister project Antarctic Bedrock Topography (BEDMAP2) aim to create a seamless bathymetric and topographic database. New single and multi-beam data were collected and processed by the Alfred Wegener Institute during *R/V Polarstern* cruises in the Weddell Sea/Drake Passage and the Lazarev Sea. Other contributions were made by Australia (South Indian Ocean), New Zealand (Ross Sea and adjacent Southern Ocean), Ukraine (Antarctic Peninsula), and the United States (Amundsen Sea). Additional bathymetric data or grids are provided by Russia (South Indian Ocean), Spain (Scotia Sea), the United Kingdom (South Atlantic) and international research programs (Bellinghausen and Amundsen Sea). A preliminary inventory of ship tracks with existing *NBPalmer*, *Polarstern*, and *JCRoss* multibeam data is now available from the Marine Geoscience Data System (MGDS) at Lamont-Doherty Earth Observatory. Presentations on IBCSO and its relevance to other projects were given to the GEBCO Guiding Committee (Tokyo, May 2008), the SCAR Standing Scientific Group on Geosciences (St Petersburg, July 2008) and the Hydrographic Commission on Antarctica (Rio de Janeiro, October 2008). During the year, SCAR distributed a Circular Letter to National Delegates regarding the importance of bathymetric data acquisition in Antarctic waters and asking for their nomination of national representatives to the IBCSO board. Only three nominations arrived, from Italy, Spain and Sweden in 2008. It is necessary to restart the nomination process for the IBCSO Board. For more details see www.ibcso.org.

(v) The Antarctic Digital Magnetic Anomaly Project (ADMAP) aims to map Antarctica's magnetic anomaly field to aid in understanding geological processes. It is managed jointly with IAGA (International Association of Geomagnetism and Aeronomy). ADMAP contributes data to the World Magnetic Anomaly Map (for details see: http://www.geology.ohio-state.edu/geophys/admap). During 2008, the release of a CD to the World Data Centers with the latest completed ADMAP compilation was approved, pending the inclusion of minor updates. This compilation is ADMAP-1999 to indicate

the latest year of survey data that the compilation holds. Plans were made to commemorate the CD release with a special issue of ADMAP papers in a peer-reviewed journal in 2009. Work on the next compilation is underway. More than 2 million line kilometers of new aeromagnetic and ship survey data since 2000 are becoming available for inclusion in the database. In addition, a number of new surveys will be completed as part of the IPY. Furthermore, CHAMP satellite magnetic observations are now being collected at altitudes of about 300-325 km. In view of these data developments, a new generation ADMAP compilation will be made available soon after the end of the IPY. The new compilation, tentatively entitled ADMAP-2010, will be a significant ADMAP contribution to the legacy of the IPY.

(vi) The Expert Group on Antarctic Permafrost and Periglacial Environments (EGAPPE) coordinates, communicates and exchanges data amongst Antarctic permafrost researchers within SCAR and the International Permafrost Association (IPA). It works closely with the IPA working group on Antarctic Permafrost and Soils. The activities of both are described under the acronym, ANTPAS, the Antarctic Permafrost and Soils group (see http://erth.waikato.ac.nz/antpas/). During 2008 the Group hosted a workshop at the Ninth International Conference on Permafrost (Fairbanks, Alaska, June 2008), and another at the SCAR Open Science Conference (July 2008). It continued developing legends for soil and permafrost map units, and prepared provisional soil and permafrost maps of (i) Transantarctic Mountains, and (ii) permafrost maps of the Andes and King George Island. It published more than 50 papers in refereed journals pertaining to soils and permafrost in Antarctica, in the period 2006-2009. It maintained the EGGAPE database at Waikato University (http://erth.waikato.ac.nz/antpas). Members monitored the active layer depth, permafrost temperatures in boreholes, and soil climate in the McMurdo Dry Valleys, North Victoria Land, and South Shetland Islands. In 2009 the Group will participate in the Vth International Conference on Cryopedology in Russia, 14-20 September. It will continue to develop a Cryosol session with an Antarctic focus for the International Union of Soil Scientists meeting (Brisbane, 2010), and prepare electronic versions of soil and permafrost maps and databases of the Transantarctic Mountains and Antarctic Peninsula.

(vii) The Sub-Ice Geological Exploration (SIeGE) Action Group: was transformed into an Expert Group by the Delegates at XXX SCAR in July 2008. SIeGE goals are to:

- Evaluate and synthesize potential geological targets for subglacial sampling;
- Determine areas of high scientific interest to define targets for future surveying for geological sampling;
- Provide a forum to exchange ideas on potential geological targets and communicate plans of national and multinational campaigns for surveying and sampling;
- Provide a forum for reviewing existing ice drilling and geological sampling technology and establishing plans for developing new technologies to achieve the desired surveying and sampling.

Recent and on-going programmes or activities are presented below with brief descriptions:

- **Workshop on Fast Access Drilling and Ice Sheet Bed Sampling**: US scientists held a workshop as a follow-on to the one held in 2002, termed FASTDRILL (www.es.ucsc.edu/~tulaczyk/fastdrill.htm). The follow-on meeting, “Workshop on Fast Access Drilling and Ice Sheet Bed Sampling”, focused on the technology required for recovering basal ice and sub-ice geological materials. The workshop discussions covered three specific topics: 1) the utilization and melding of conventional hot-water drilling with new technologies, e.g. coiled-tubing drilling, for accessing subglacial environments; 2) techniques for sampling sediment-ladened ice, sediment and rock at the grounded ice sheet bed, especially in the WAIS Divide deep borehole; and 3) technologies allowing “clean” access to the subglacial bed and the recovery of subglacial samples free of contamination. The discussion in topic (1) was guided by a concept for a new smart hot-water based soft coiled-tubing drill system; that in topic (3) will rest on the NAS/NRC report, "Exploration of Antarctic Subglacial Aquatic Environments: Environmental and Scientific Stewardship."
- **WAISDivide Basal Science and Implementation Plan**: The US ice-coring programme WAISDivide aims to recover basal debris-rich ice and subglacial material including water,

sediment and bedrock. On September 2, 2008, a sub-committee of the science steering committee produced the "WAISDivide Basal Science and Implementation Plan" laying out science and sampling objectives. The US ice core drilling office will be tasked to build the required sampling equipment if approved by NSF. The document is available at www.waisdivide.unh.edu/news/WAISBasalPlanFinal2Sept08.pdf.

- **Other Planned Subglacial Drilling Efforts Likely to Include Geological Sampling**: Various ice coring and drilling initiatives are being planned and are likely to include recovery of geological materials. These include Subglacial Lake Ellsworth (lake sediment core), Dome A (bedrock sample of the Gamburtsev Mountains), the International Partnerships in Ice Core Sciences (IPICS) (several planned sites), and US initiatives to access near-grounding-line lakes on Whillans Ice Stream (lake sediment and till recovery). Efforts also include programs designed to recover subglacial sediment from below ice shelves, including the international ANDRILL program. The Pine Island Glacier (PIG) program, and a US Siple Coast program also plan to recover short cores of sediment from below ice shelves.

(viii) Seeps and Vents ANTarctica (SAVANT) Action Group: The Seeps and Vents Action Group was created at XXX SCAR in July 2008 to investigate biological communities associated with seamounts, cold seeps and hydrothermal vents, cold water coral and sponge communities. These are of interest to CCAMLR, which is charged with developing management practices for Vulnerable Marine Ecosystems (VMEs) in Antarctic waters; VME's may include vent communities (Conservation Measure 22-06). Seamounts can be mapped using global data sets such as satellite gravity, and local compilations of ship-based bathymetry. These activities are underway under the auspices of the IBCSO Project (see above). Location of cold seep and hydrothermal vent communities is more difficult and will require a range of ship-based techniques. Existing geophysical data can be used to identify areas likely to contain such features. The Action Group will identify areas within the CCAMLR region likely to contain Vulnerable Marine Ecosystems around cold seeps and hydrothermal vents. It aims to:

- Compile a guide for the identification of fluid escape features to assist in detecting possible seep sites;
- Compile a guide for identifying cold seep and hydrothermal vent organisms;
- Review seismic reflection data to detect possible areas of shallow and leaking gas;
- Review echo sounder data for evidence of possible gas flares from active vents;
- Review multibeam and sidescan data for fluid escape structures on the sea floor;
- Review biological data for evidence of organisms associated with cold seeps or hydrothermal vents;
- Provide locations of areas of possible fluid seepage and biological communities to CCAMLR for incorporation in a GIS.

Activities so far include contacting potential participants, particularly those involved in research into seeps and hydrothermal vents. A pilot study reviewing echo sounder data for evidence of gas flares in the water column has begun.

2.2.3 Physical Sciences Group

The Standing Scientific Group for the Physical Sciences (SSG-PS) reported a number of highlights aside from those associated with its SRPs - AGCS and ICESTAR (above).

(i) International Partnership in Ice Coring Science (IPICS): A steering committee meeting was held in April 2008. Science plans for the three start-up projects are available; the fourth one the NEEm drilling in Greenland, is underway (but of less interest to SCAR). IPICS will hold a workshop to start implementation of the 3 projects in summer 2009.

(ii) Astronomy and Astrophysics from Antarctica (AAA) Scientific Research Programme Planning Group (SRPPG): With the declaration by the United Nations that 2009 will be the International Year of Astronomy, it is fitting that the international Astronomical Union (IAU) has been admitted to membership of SCAR as an ICSU scientific union member. A session on astronomy and astrophysics

was held at the Open Science Conference in July. The SCAR Delegates approved establishment of the AAA-SRPPG, (http://www.phys.unsw.edu.au/JACARA/AAA_SRP_webpage/). The Planning Group will work during 2009 to establish four working groups covering: (i) Site testing, validation and data archiving; (ii) Arctic site testing; (iii) Science goals; (iv) Major new facilities. The full SRP will start at the beginning of 2010. During 2008, China began constructing a permanent station at Dome A, which will join Dome C and the South Pole as one of the best sites on earth for astronomical observations.

(iii) Operational Meteorology: The Expert Group on Operational Meteorology in the Antarctic provides a point of contact between many groups undertaking meteorological work in the Antarctic. Through liaison with the World Meteorological Organisation (WMO) it has ensured that the amount of real-time data available from Antarctic sites has increased, with data from several new Automated Weather Stations (AWS) now available on the WMO Global Telecommunications System (GTS). It continues to extend the Met-READER database. The Group's web pages provide news and information about Antarctic meteorological activities. There is evidence that many ships operating in Antarctic waters do not make meteorological reports. SCAR and the International Maritime Organisation (IMO) should co-operate to improve the situation to the benefit of mariners, tourists and science.

(iv) Environmental Contamination in Antarctica (ECA) Action Group: The Group met in St Petersburg in July 2008 to discuss the following themes:

- Contamination in terrestrial water and soil environments;
- Heavy metal occurrence in snow and ice;
- Presence and distribution of Persistent Organic Pollutants (POPs) in environmental matrices;
- Trace elements in water and sediment of the Southern Ocean.

The workshop identified the following priorities:

- Integrate the ECA data base into JCADM (below) through a dedicated portal;
- Recognize and separate local sources (bases, aircrafts, ships, traverses) from global contaminant signatures by identifying proxies of the potential sources;
- Optimize the use of samples collected for environmental characterization purposes and warranty reliable data by defining the role of specimen banks (international collaboration) and organizing proficiency tests for trace contaminant determination in environmental matrices;
- Organize the third ECA workshop, in Venice (June 2009) to complete datasets for environmental contaminants and define topics for joint research projects.

(v) Polar Atmospheric Chemistry at the Tropopause (PACT): this new Action Group was formed at XXX SCAR in July 2008, to improve understanding of the distribution and variability of ozone in the polar upper troposphere – lower stratosphere (UTLS) region, and the feedbacks of ozone changes to polar climate. PACT will produce a database consisting of information derived from existing high latitude ozonesonde measurements, including:

- High resolution profiles of ozone mixing ratio and partial pressure in the vicinity of the tropopause;
- The height of the chemical tropopause;
- Ten-day forward and backward trajectory information at selected potential temperature surfaces intersected by the ozonesonde profiles.

The information will aid model studies of the UTLS region, particularly validating heating and cooling rates and trace gas transport fluxes. Data will be made available through the Australian Antarctic Data Centre and the Integrated Global Radiosonde Archive (IGRA). A web site to provide details and data is under construction.

(vi) The joint SCAR/SCOR Oceanography Expert Group: The Group's main focus has continued to be on developing a design plan for a Southern Ocean Observing System (SOOS). A SOOS meeting was held during XXX SCAR in July. The meeting aimed to present "strawman" plans for different aspects of the SOOS, and to agree on key recommendations and actions to move the process forward

(for full report see http://www.clivar.org/organization/southern/expertgroup/SOOS_report.pdf). The Expert Group recently revised its membership, and since the St Petersburg meeting has been working on a SOOS planning document, a first draft of which will shortly be available for comment by the community. SOOS is co-sponsored by SCAR, SCOR, the Census of Antarctic Marine Life (CAML), the Partnership for Observation of the Global Oceans (POGO), the Global Ocean Observing System (GOOS), and WCRP. The US National Oceanic and Atmospheric Administration (NOAA) provided significant funding.

(vii) CLIVAR/CliC/SCAR Southern Ocean Implementation Panel (SOIP): The Panel is concerned with the development and assessment of the Southern Ocean Observing System (SOOS) activities, and works alongside the WCRP/SCAR International Programme for Antarctic Buoys (IPAB), which deploys drifting buoys on the sea ice. These two panels provide the practical side of SOOS development, and so complement the work of the Oceans Expert Group. The Panel meets every 18 months to 2 years and did not meet in 2008, though its members did provide input to the plans or SOOS (above). For 2009, a key activity will be defining research needs for a SOOS and evaluating the SOOS plan for adequate sampling of the climate system. Outcomes will feed into the OceanObs09 meeting in Venice (21-25 September 2009). There will be an SOIP Panel meeting from 16-18 February 2009 in Sydney Australia to address: (i) SOOS evaluation; (ii) Carbon science within SOOS; (iii) Climate and Carbon process study development; (iv) A report on the state of the southern climate system variations and key modes; (v) Gaps in climate modeling; and (vi) Atmosphere and Ocean reanalysis and fluxes in the Southern Ocean/Ice system.

(viii) Pan Antarctic Observations Network (PAntOS): The group met during XXX SCAR to take forward development of PAntOS. Key components include SOOS and the Cryosphere Observing System (CryOS)(see SCAR web site for details).

(ix) The SCAR Expert Group on Ice Sheet Mass Balance and Sea Level (ISMASS): ISMASS, which is now a joint programme with IASC, aims to revitalize the approach towards assessing methods and uncertainties in estimating Antarctic Ice Sheet mass balance. Many recent events suggestive of rapid ice-sheet change cannot be reproduced by the current generation of whole ice-sheet models on which the predictions issued by the IPCC are primarily based. Recognising the importance of ice sheets in controlling global sea level, and the inadequacies in current efforts to model observed rapid changes in ice sheets (outlined in detail in SCAR Report 30, *"A need for more realistic ice-sheet models"* by C.J. van der Veen and ISMASS), a Workshop was held in July as part of XXX SCAR to develop a community strategy on how best to: (i) improve the physical understanding of ice sheet processes responsible for rapid change; (ii) incorporate improved physical understanding into numerical models; (iii) assimilate appropriate data into the models for calibration and validation; and (iv) develop prognostic whole ice-sheet models that better incorporate non-linear ice-sheet response to environmental forcings (such as change in surface mass balance, loss of buttressing from floating ice shelves and ice tongues, and rising sea level). The Workshop was co-sponsored by SCAR, CReSIS, WCRP/CliC, and IASC/WAG, and made possible with support from several agencies. Attendees participated in drafting a Science Plan outlining a community strategy for the next 5-10 years to address current inadequacies in prognostic ice-sheet models. A draft version of the Science Plan is being finalized. A Summer School, to be held in 2009, aims to improve ice-sheet models used to predict sea level change, and to train young researchers.

(x) International Symposium on Glaciology in the International Polar Year: This meeting, which is co-sponsored by SCAR, is due to be held 27-31 July, 2009 in Northumbria University, Newcastle, UK.

3. Data and Information Management

3.1 Antarctic Data Management

One of SCAR's goals is to facilitate free and unrestricted access to Antarctic scientific data and information in accordance with article III-1c of the Antarctic Treaty. This was the task of the Joint

SCAR-COMNAP Committee on Antarctic Data Management (JCADM) (http://www.jcadm.scar.org). On January 1 2009, the Joint Committee on Antarctic Data Management (JCADM) becomes a SCAR Standing Committee (SC-ADM, http://www.scadm.scar.org). SC-ADM will take on all of the objectives of the former joint committee. During 2008 a draft SCAR Data and Information Strategy was circulated by JCADM to SCAR delegates for review. Subsequently an ad-hoc Action Group was established to edit and finalise the document prior to its presentation to EXCOM in 2009. This Strategy will set the direction for SCAR data management activities over the next 5 years and emphasises the need to leverage established regional, global and thematic data-centric networks to improve data management capability within SCAR science programmes. To further enhance collaboration and integration with other data networks and facilities, SCAR has sought membership of the ICSU Strategic Coordinating Committee on Data and Information (SCCID) to be established in 2009 as a consequence of ICSU's review in 2007/2008 of global scientific data management and the ICSU World Data Centre System (WDCS). A JCADM representative participated as part of the ICSU review team to ensure that deliberations adequately addressed SCAR and IPY data issues. In July 2008, JCADM held its annual meeting as part of XXX SCAR and in conjunction with the IPY Data Committee. A 2008 independent review of JCADM was generally positive, and made a number of recommendations that have now been incorporated into the SC-ADM work plan. Two new initiatives were launched by JCADM in 2008 to improve communication between data management and science practitioners: (i) a periodic newsletter; (ii) a dedicated metadata/data portal for the SCAR Evolution and Biodiversity in the Antarctic (EBA) research program. This style of dedicated portal could be easily replicated for other key SCAR science research programs.

3.2 Antarctic Geographic Information

The SCAR Standing Committee on Antarctic Geographic Information (SC-AGI) met during the XXX SCAR meeting in July. The SCAR Composite Gazetteer for Antarctica (CGA) is now hosted on the Australian Antarctic Division web site. Italy continues to liase with SCAR members in compiling the composite gazetteer and uploading data to the database in Australia from Italy. The redevelopment of the SCAR CGA required considerable resources from both Australia and Italy and took about one year. The database was expanded allowing additional information such as photographs and coordinate information for named features to be shown. Users determine the accuracy of the coordinates or the confidence users have in the location of a name.

The King George Island, Web Map Server (WMS) while fully functional, is not being maintained and the challenge is to find a new home for it.

SC-AGI now has 23 confirmed national representatives with an additional eight national contacts for Antarctic names and five national contacts for Geographic Information. The challenge is to get members actively involved. A SC-AGI intersessional meeting may be held in Santiago, Chile in September 2009.

4. International Polar Year

SCAR continues to make a significant contribution to the International Polar Year (IPY)(2007 – 2009), which ends on March 1 2009. The immediate past SCAR President and current SCAR Executive Director are members of the Joint ICSU/WMO Committee for the IPY (the IPY-JC), which also contains several eminent scientists from SCAR science programmes. They contributed to writing 'The State of Polar Research', which summarises progress to date and will be published early in 2009. SCAR is either leading or involved in 70% of the Bipolar or Antarctic natural science projects approved by the IPY Joint Committee. SCAR's 5 scientific research programmes lead project clusters for the IPY, and the Chief Officer of JCADM is co-chair of the IPY Data and Information Management Subcommittee. IPY activities include three major scientific conferences, the first of which was the Joint SCAR/IASC Open Science Conference in St Petersburg (8-11 July 2008) on: "*Polar Research – Arctic and Antarctic Perspectives in the International Polar Year"*. There were 1150 attendees, and 1068 presentations (526 oral and 542 posters); this compares with the 624 presentations at SCAR's conference in Hobart (2006) and 540 in Bremen (2004). The IPY-JC met in

St. Petersburg immediately before the conference. Recognising that the IPY is about education and outreach as well as about science, SCAR hosted as part of the XXX SCAR Meeting an IPY Open Forum (July 7), a one-day workshop of the Association of Polar Early Career Scientists (APECS)(July 7), and a conference session on Education and Outreach in the context of the IPY. SCAR is also assisting in development of an archive documenting the development of the IPY, and the Executive Director published paper in Polar Record on the IPY. The Executive Director also participated in meetings of the Heads of national Arctic and Antarctic IPY Secretariats (HAIS), as a means of assisting international coordination of IPY activities. At their meeting in Moscow in July 2008, SCAR Delegates considered how SCAR might take on responsibility for managing aspects of the IPY legacy. Developing observing systems is one element (e.g. SOOS – see above). SCADM (see above) will take on responsibility for aspects of IPY data and information management. SCAR is now a co-sponsor with IASC of APECS (mentioned earlier), to facilitate the development of young polar researchers. SCAR and IASC formed a Bipolar Action Group (BipAG) to advise SCAR and IASC governing bodies on the roles SCAR and IASC might play in managing the IPY legacy. BipAG met during the XXX SCAR meeting in July, and provided a report to the SCAR Delegates. SCAR and IASC are assisting in the organisation of the 2nd IPY conference, which takes place in Oslo in June 2010.

5. Scientific Advice to ATCM, CEP, CCAMLR and ACAP

Through its status as Observer, 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). SCAR participated in the XXXIst ATCM in Kiev in June 2008. The SCAR Lecture, on 'Space Weather and its Effects" was delivered by Prof. Lou Lanzerotti (available from http://www.scar.org/communications/). SCAR presented 3 Working Papers and 5 Information Papers. SCAR's advice is provided through the Standing Committee on the Antarctic Treaty System (SC-ATS). In May 2008 SCAR conducted a review to increase the efficiency and effectiveness of its interactions with the CEP and ATCM. An Action Group under the leadership of Clive Howard-Williams (NZ) addressed these matters at a meeting in Cambridge. The Chairman of the CEP was part of the group. Also in May 2008 a SC-ATS workshop was held in Cambridge to study all available data on the Southern Giant Petrel so as to provide the XXXI ATCM in Kiev (June 2008) with the latest information on this species (Working Paper 10). The paper recommended delisting the species and the recommendation was accepted. The ATCM meeting papers from SCAR are at http://www.scar.org/treaty/atcmxxxi/index.html.

SCAR is also an Observer to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Graham Hosie (Australia) - represented SCAR at the 27th annual CCAMLR meeting in Hobart (October 2008). Several of SCAR's marine biology programmes provide strong links to CCAMLR's interests, especially SCAR's Census of Antarctic Marine Life (CAML) programme, the SCAR Continuous Plankton Recorder (CPR) programme, EBA, and SCAR's Marine Biodiversity Information Network (MarBIN). The work of SCAR's Ocean Expert Group is also relevant to CCAMLR, as is that of the Expert Groups on Higher Predators. SCAR is assisting CCAMLR in developing the concept of bioregionalisation of the Southern Ocean.

Recognising the expertise of the SCAR Bird Group, SCAR is invited as an Observer to meetings of the Advisory Committee on Albatrosses and Petrels (ACAP). ACAP contributed to the SC-ATS Southern Giant Petrels workshop in May 2008. A SCAR observer attended the ACAP meeting in August in Cape Town.

6. Other Developments

6.1 History

The SCAR History Action Group held a session with oral papers and posters on "Polar History and Institutionalisation of Polar Research - The International Polar Years" during the XXX SCAR

meeting in July 2008. The Proceedings of the second history workshop (Santiago, 2006) will be printed by the Chilean Antarctic Institute in early 2009; the proceedings of the third workshop (Columbus, 2007) will be published as electronic version by the Byrd Polar Research Institute in 2009. Papers of the history session at the XXX SCAR meeting (St. Petersburg, 2008) will be published in Polar Record and in a book on the history of the International Polar Years by Springer. In 2009 the SCAR History Group will organise a workshop and present posters on "Lessons from the Past" during the Antarctic Treaty Summit in Washington DC on 3 December 2009.

6.2 Capacity Building, Education and Training (CBET)

SCAR's main contributions to Capacity Building, Education and Training are through its Fellowship Programme and through working closely with the Association of Polar Early Career Scientists (APECS), which SCAR co-sponsors. In 2008/2009 SCAR funded three standard fellowships and supported an additional fellowship under the IPY 6th Continent Initiative programme that was funded by the International Polar Foundation. SCAR is committed to expanding its fellowship programme through both external as well as internal sources. In 2008 India contributed $5000 to the Fellowship programme for 2009/10.

6.3 Other

SCAR continues to work closely with APECS, acting both in an advisory manner and by co-sponsoring APECS initiatives of relevance to SCAR, like the IMPETUS workshop on techniques in polar ocean observation and monitoring held in St Petersburg in November 2008. As approved by the Delegates in XXX SCAR, representatives of APECS have been invited to send an observer to XXXI SCAR as well as to nominate local representatives to SCAR science meetings where appropriate.

SCAR is an Associate Member of the International Antarctic Institute (IAI), which is a "virtual" university comprising the Antarctic science courses of a number of universities and institutes around the world, led by the University of Tasmania.

SCAR has also been chosen by the Tinker Foundation to be the administrative organisation for the Martha Muse Prize for Science and Policy in Antarctica, a $100,000 unrestricted yearly prize that will be given to an individual who has demonstrated excellence in Antarctic science or policy.

7. Administrative Achievements

Consistent with the requirement of its parent body, ICSU, during the year SCAR gained independent legal status as a Company Limited by Guarantee and is now a UK Charity.

In recent years, SCAR has led the development of a network of the four main bodies of ICSU concerned with research in the Polar Regions and/or the cryosphere. SCAR co-sponsors with the World Climate Research Programme (WCRP) the Climate and Cryosphere programme (CliC). SCAR works closely with IASC on bipolar issues of common interest, and SCAR and IASC jointly sponsored the IPY Open Science Conference in Russia in July 2008. SCAR and IASC signed an agreement with the International Association for Cryospheric Sciences (IACS) of the International Union for Geodesy and Geophysics (IUGG). This 4-component network will help to ensure that polar scientific research is effectively coordinated.

SCAR's communications continued to be focused through the SCAR web site, and the SCAR quarterly Newsletter. There were on average 130,000 hits per month on the SCAR web site for 2008, continuing the pattern of year-on-year increases. SCAR also published a SCAR brochure and poster, both available on the SCAR web site.

8. SCAR's Services and Products

For the benefit of the wider community SCAR provides several services and products underpinning the work SCAR scientists do. These can be useful to other communities too (CCAMLR or COMNAP,

for instance). Many of these services and products do not (yet) have particularly high visibility (even on the SCAR web page).

The list includes:

Antarctic Data Directory System (ADDS) (part of JCADM and therefore the responsibility of Taco de Bruin, Netherlands);

REference Antarctic Data for Environmental Research (READER) (part of AGCS under the responsibility of Steve Colwell, UK);

Antarctic Digital Database (ADD) (part of SC-AGI and under the responsibility of Paul Cooper, UK);

Antarctic Biodiversity Database (managed for SSG-LS by the Australian Antarctic Division, under the responsibility of Dave Watts);

Marine Biodiversity Information Network (MarBIN) (under SSG-LS and the responsibility of Bruno Danis, Belgium);

Composite Gazetteer of Antarctica (an element of SC-AGI and now managed by the Australian Antarctic Division, with input from Roberto Cervellati, Italy);

Seismic Data Library System (SDLS) (managed for SSG-GS at the US Geological Survey under the responsibility of Alan Cooper, USA);

Geodetic Data including: Master index for Antarctic positional control; Geophysical and geodetic observatories; and Geodectic Control Database; (managed for SSG-GS by Reinhard Dietrich, Germany);

Antarctic Map Catalogue (managed by the Australian Antarctic Division, under the responsibility of Henk Brolsma);

Antarctic Bedrock Mapping (BEDMAP) (managed for SSG-GS/SSG-PS by David Vaughan, BAS, UK);

Tide gauge data (managed at the Proudman Oceanographic Laboratory, under the responsibility of Phil Woodworth, UK);

International Bathymetric Chart of the Southern Ocean (IBCSO) (managed for SSG-GS under the responsibility of Norbert Ott, Germany);

Antarctic Digital Magnetic Anomaly Project (ADMAP) (managed for SSG-GS under the responsibility of Marta Ghidella, Argentina);

The SCAR King George Island Geographical Information System (KGIS) (managed for SC-AGI under the responsibility of Steffen Vogt, Germany);

The Continuous Plankton Recorder database (CPR) (managed for SSG-LS under the responsibility of Graham Hosie, Australia);

The Feature Catalogue (managed by SC-AGI, through Henk Brolsma, Australia);

The Ocean READER database (part of AGCS under the responsibility of Mike Meredith, UK);

The Ice READER database (part of AGCS under the responsibility of Paul Mayewski, USA);

Sea Ice Database (part of AGCS and ASPeCt, and the responsibility of Tony Worby, Australia).

5. Report by Experts

Report by ACAP Secretariat: Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels

The Agreement on the Conservation of Albatrosses and Petrels (ACAP) is a multilateral agreement that aims to achieve and maintain a favourable conservation status for albatrosses and petrels. The impetus for the development of ACAP was international recognition that albatrosses and petrels are amongst the most threatened birds in the world, with 83% of the world's albatross species now considered to be endangered, compared with 11% of bird species overall. The most significant threat to many species of albatrosses and petrels is mortality resulting from interactions with fishing vessels; but the breeding areas of many species are subject to a number of threats including non-native species (which may predate nests and breeding adults, compete for nesting space or destroy nesting habitat), avian diseases and climate change.

At present, thirteen Parties – all Antarctic Treaty Consultative Parties – have ratified ACAP: Argentina, Australia, Brazil, Chile, Ecuador, France, New Zealand, Norway, Peru, South Africa, Spain, the United Kingdom and Uruguay.

Because of the relatively small number of Parties to the Agreement, the resources available to ACAP are currently modest. A goal of existing Parties is to promote ACAP and encourage more Range States, including those which are a Party to the Antarctic Treaty but not yet a Party to ACAP, to accede to the Agreement and further global efforts to conserve albatrosses and petrels.

ACAP and the Antarctic Treaty

In pursuing the objective of ACAP, ACAP Parties and the ACAP Secretariat seek to work in an integrated and synergistic manner with other international and national organisations with an interest in the conservation of albatrosses and petrels and the habitats and natural resources on which they depend.

The significance of the Antarctic Treaty, which applies to an area of importance for nearly all ACAP listed species of albatross and petrel, is recognised in the text of ACAP. It is also reflected in the invitation of an ACAP representative as an observer to meetings of the Committee for Environmental Protection (CEP) and as an expert to Antarctic Treaty Consultative Meetings (ATCM).

In working with Parties to the Antarctic Treaty, ACAP Parties continue to:

- encourage the implementation of the Antarctic Treaty and Environmental Protocol in a way that is mindful of the objective of ACAP to achieve and maintain a favourable conservation status for albatrosses and petrels, with particular reference to the populations of ACAP species which occur within the Antarctic Treaty Area (see below);
- encourage Parties to the Antarctic Treaty to take the protective measures necessary to improve the conservation status of ACAP species, including those needed to avoid disturbance of the breeding habitat of ACAP species by national or non-government activities, and to give consideration to ACAP species when preparing environmental impact assessments and conducting environmental impact monitoring;
- welcome consultation with the Committee for Environmental Protection over matters of relevance to ACAP species and their habitats, as per the guidance provided by ACAP on the development of a standardised methodology for undertaking population counts of Southern giant petrel (SGP) colonies, provided for consideration at CEP XII; and
- identify opportunities for information exchange – in particular the ongoing reviews of the status and trends of ACAP species and the protection and management status of breeding sites.

ACAP species occurring within the Antarctic Treaty Area

ACAP Annex 1 includes fourteen species which occur regularly within the Antarctic Treaty Area: Black-browed Albatross (*Thalassarche melanophrys*), Campbell Albatross (*Thalassarche impavida*), Chatham Albatross (*Thalassarche erimita*), Grey Petrel (*Procellaria cinerea*), Grey-headed Albatross (*Thalassarche chrysostoma*), Light-mantled Sooty Albatross (*Phoebetria palpebrata*), Northern Giant Petrel (*Macronectes halli*), Northern Royal Albatross (*Diomedea sanfordi*), Salvin's Albatross (*Thalassarche salvini*), Southern Giant Petrel (*Macronectes giganteus*), Sooty Albatross (*Phoebetria fusca*), Southern Royal Albatross (*Diomedea epomophora*), Wandering Albatross (*Diomedea exulans*) and White-chinned Petrel (*Procellaria aequinoctialis*). The majority of these species do not breed in the area, but have foraging ranges which overlap with Antarctic waters. The Southern Giant Petrel *Macronectes giganteus* is the single ACAP listed species which breeds within the Antarctic Treaty Area.

Priority actions

The Meeting of the Parties to ACAP has developed a work program and placed responsibility for its implementation with the ACAP Advisory Committee. The work program reflects the areas of the Action Plan (Annex 2 to ACAP) which have been identified as priorities for immediate attention. These are:

- fisheries bycatch of albatrosses and petrels; and
- the management and protection of breeding sites, including in particular any adverse effects of introduced species, habitat loss, climate change or avian diseases.

Recognising that much work has been done or is ongoing in these areas, the Advisory Committee has been tasked with recommending the best way to integrate the work of ACAP with existing initiatives. The aim is to enhance and advance current initiatives, not to duplicate them. In particular, in addressing seabird bycatch in fisheries, ACAP is seeking to work closely with Regional Fisheries Management Organisations by sharing information derived from tracking studies on the overlap between ACAP listed species and fisheries activities, and by calling on the considerable expertise that some ACAP Parties have in mitigating bycatch through technical solutions and modifying fishing gear and practices.

Another key area of work by the Advisory Committee is the review of the population status and trend of all ACAP listed species, which presently include 26 southern hemisphere species (19 species of albatrosses and 7 species of petrels, including the Southern Giant Petrel). This review, which is ongoing, is being carried out in consultation with other expert organisations, including the SCAR Group of Experts on Birds.

The Advisory Committee has developed comprehensive and contemporary species' assessments to identify and prioritize areas where management action is required. The species assessments primarily draw on data held by the Advisory Committee's Working Groups, however additional data from Antarctic Treaty Parties would be most welcome. The assessments are published on the ACAP website (www.acap.aq) to ensure their wide availability. They are updated regularly to ensure that the information they contain remains current. A relational database has been developed and is used to update the species assessments as new information becomes available.

Future ACAP meetings

The Third Session of the Meeting of the Parties will be held between 27 April – 1 May 2009 in Bergen, Norway. The fifth meeting of ACAP's Advisory Committee will be held in March/April 2010 in Argentina. This meeting is likely to be preceded by meetings of the Breeding Sites, Seabird Bycatch and Status and Trends Working Groups. Antarctic Treaty Parties are invited to send representatives to these meetings.

Report of the Antarctic and Southern Ocean Coalition (ASOC)

1. Introduction

ASOC is pleased to be in Baltimore to help celebrate the Antarctic Treaty's 50th anniversary. Indeed, there is much to be celebrating, while recognizing the many challenges facing the Consultative Parties in exercising good stewardship over the 10% of the earth encompassed within the boundaries of the Antarctic Treaty and CCAMLR.

ASOC is celebrating its 30th anniversary this year. ASOC was created in 1978-79 to influence the content of Article II of CCAMLR - the 'ecosystem-as-a-whole' principle; to stop potential minerals development of Antarctica, then under discussion behind closed doors; and to promote greater openness of the Antarctic Treaty System to the participation of environmental groups and the UN system.

This report briefly describes ASOC's work over the past year, and outlines the key issues identified by ASOC for this ATCM, discussed in detail in our Information Papers.

The important precedent of holding a joint meeting of the Committee on Environmental Protection and CCAMLR's Scientific Committee also is very welcome. ASOC looks forward to the outputs from this, which we hope among other things will take advantage of the foundations laid in CCAMLR's bioregionalisation process to make rapid progress in creating a representative system of marine protected areas and marine reserves in the Southern Ocean.

The decision to hold a joint meeting of Arctic Council and Antarctic Treaty Consultative Parties is most welcome, and ASOC hopes this precedent will be continued.

2. ASOC Worldwide

ASOC has member groups located in most Antarctic Treaty Consultative Parties. ASOC campaigns are coordinated by a team of specialised representatives – scientists, lawyers and policy experts – located in Argentina, Australia, Brazil, Chile, France, Japan, Netherlands, New Zealand, Norway, Poland, South Africa, South Korea, Spain, Russia, Ukraine, United Kingdom and USA.

ASOC maintains a Secretariat office in Washington DC, USA, and a website (http://www.asoc.org), which provides details about the organisation and contains all ASOC documents prepared for the Antarctic Treaty System since 2000. Recently we added to the website an archive of all ECO newspapers published since 1980.

Information Papers for XXXI ATCM

In addition to this report, ASOC has introduced 8 Information Papers:

- **IP 002: Impacts of Human Activities on the Antarctic Environment: A Review**

  This Information Paper presents a summary of a peer-reviewed article on the research on human impacts on the southern polar environment from the past decade. Our current knowledge on human impacts on the Antarctic environment highlights the need to: (i) initiate long-term monitoring programmes, (ii) put in place strong measures to prevent the establishment of invasive species, (iii) develop universally accepted standards for the remediation of contaminated sites, (iv) assess and verify the effectiveness of EIA provisions, and (v) apply the precautionary approach.

- **IP 023: Tourism and Land-Based Facilities in Antarctica**

  At the request of Japan, ASOC updated information it had previously compiled on land facilities used to support tourism in Antarctica. This Information Paper describes the current

state of land-based tourism and discusses some of the issues associated with such facilities. Although the number of facilities has not changed significantly in recent years, the continued growth of Antarctic tourism means increasing use of land-based facilities, and thus the environmental impact of tourism is more likely. ASOC encourages Parties to be fully transparent about their tourism-related activities, to develop and make available Policy Statements on tourism with respect to their Antarctic stations, and to be proactive in managing land-based tourism in Antarctica.

- **IP 034: Managing Antarctic Vessels – Avoiding Future Disasters**

  In this paper, ASOC identifies a number of issues related to vessel operations in Antarctic waters and sets out the actions needed to prevent environmental disasters from groundings, sinkings, fires or other accidents and from day to day operations. In particular, ASOC calls on Parties to work cooperatively within the framework of the International Maritime Organization (IMO) to commence the development in 2010 of (and to adopt as a matter of urgency) a mandatory legal instrument (or Polar Code) for vessels operating in polar waters; to continue the work on risk assessment and passenger vessels to strengthen the management of passenger vessels in Antarctic waters; and to work to address the associated environmental impacts of all vessels activities in the area, including fisheries, the whaling fleet and ancillary vessels.

- **IP 035: Policy Implications Arising From SCAR's Report: Antarctic Climate Change and the Environment**

  ASOC concludes that the primary, science-based policy implications of the SCAR report are: 1) to support global reductions in carbon emissions, 2) to put in place strong measures to prevent the establishment of invasive species in the Antarctic, and 3) to apply a highly precautionary approach to the conservation of marine living resources in the Southern Ocean.

- **IP 041: Marine Protected Areas in the Antarctic**

  The use of Marine Protected Areas and Marine Reserves for the protection and management of the marine environment and resources has long been recognised as desirable and valuable within the agreements and bodies that make up the Antarctic Treaty System. ASOC encourages Parties to reach an agreement at the CEP/SC-CAMLR workshop prior to the XXXII ATCM to specifically outline the process and timelines under which CEP and SC-CAMLR will work cooperatively, recognizing each body's competency and expertise, towards the site selection and designation of MPAs and marine reserves in the Southern Ocean.

- **IP 048: A Ross Sea MPA: Preservation for Science**

  ASOC proposes that the Ross Sea be protected from further destruction of its foodweb owing to it being (1), so far, the least affected stretch of continental shelf remaining on Earth, (2) a site of unique evolutionary significance (fishes, penguins, invertebrates) on par with the Galapagos, Lake Baikal and African Great Lakes (all declared World Heritage Sites), (3) a region with globally-significant populations of Adelie (38%) and Emperor (26%) penguins, Antarctic Petrels (30+%), Antarctic minke whales (21%), type-C killer whales (on the order of half), and Weddell seals (undetermined, but the largest colonies in the world).

- **IP 052: Protecting the Antarctic Marine Ecosystem: A Role for the ATCM:**

  ASOC calls on the ATCM to become more involved in issues related to the protection of the Antarctic marine ecosystem, supporting CCAMLR's efforts to implement an ecosystem approach to the management of Antarctic fisheries, with a current emphasis on Antarctic krill and Patagonian toothfish. Both bodies should consider complementary ways to protect the Antarctic marine ecosystem, especially in the face of climate change.

- **IP 053: Key Elements of a Strategic Vision for Antarctic Tourism**

> ASOC argues that there is an urgent need for Antarctic Treaty Parties to develop a clear vision of tourism in the Antarctic and agree on a tourism strategy that delivers, step by step, on that vision through time. In this Information Paper ASOC outlines a few important principles to achieve this. In ASOC's view the unending growth of Antarctic tourism is not desirable, required or inevitable. Tourism activities in Antarctica should demonstrably have no more than a minor or transitory impact on the environment taken together. A precautionary approach should be used to manage tourism in the absence of conclusive scientific evidence about tourism impacts. Certain types of commercial tourism need to be discouraged or prohibited.

Each of these Information Papers suggests steps for the Committee on Environmental Protection, the ATCM and CCAMLR, which ASOC submits are crucial to achieving effective protection of Antarctic ecosystems and wilderness values over the longer term. In this context, ASOC believes it is important for governments to be thinking about the second fifty years of the Treaty, and to develop a strategic plan for filling the numerous gaps in the present Antarctic Treaty System. Regulation of commercial tourism and biological prospecting are two key challenges facing the Consultative Parties.

The papers also highlight the need for closer and more effective working relationships both between the ATCM and CCAMLR, and between the ATS and other international bodies such as the International Maritime Organization, which have competence and expertise relevant to the Southern Ocean protection.

Other Important Issues for XXXII ATCM

4.1 Ratification of Annex VI on Liability Arising from Environmental Emergencies

Annex VI on Liability Arising from Environmental Emergencies is an essential complement to the suite of environmental protection instruments mandated by the Protocol. Bringing this important set of obligations into force as rapidly as possible should be a high priority for all ATCPs. ASOC urges all parties to redouble their efforts during this ATCM and over the next year to solve the remaining implementation problems, so that Annex VI can be ratified and in force in 2010. Ideally this should be the subject of a Resolution at the 50th anniversary ATCM.

4.2 Shipping issues

ASOC again suggests that the ATCM promote a *joint intersessional contact group with input from CCAMLR and IMO* experts to help Parties complete work on risk and passenger shipping, identify critical components of remote search and rescue and environmental response needed, and create a Polar Code on vessel safety and environmental protection measures for Antarctic waters.

4.3 Biological Prospecting

Biological prospecting is a complex topic that centers on the production and commercial use of knowledge derived from Antarctic biodiversity. Biological prospecting represents a further penetration of commercial and economic interests into Antarctica. This emerging industry is a completely unregulated activity at present, and ASOC has called for controls to be agreed.

ASOC remains surprised by the lack of response by Parties to Recommendation 2 of Resolution 7 (2005), which requires Parties to provide information annually on the nature and extent of their biological prospecting activities in the Antarctic Treaty area. This information is essential for the development of a regulatory regime.

Even if sufficient information was available, biological prospecting is a difficult industry to regulate given its complexity, multiple components and ambiguity. The stakes are high and ASOC hopes that this will motivate Parties to be proactive in regulating this activity. ASOC is encouraged by the discussions that have taken place the past year. The existence of international models regulating similar activities, such as the International Treaty on Plant Genetic Resources for Food and

Agriculture, offer some possible avenues as to how best to address this complex issue, which Antarctic Treaty Consultative Parties should consider and adapt as required.

ASOC Intersessional Activities since XXXI ATCM

ASOC participated in:

- intersessional work reviewing management plans for ASPAs and ASMAs, including discussions of the Deception Island Management Group, and informal discussions on site guidelines.
- the Intersessional Contact Group on risk assessment and passenger shipping, to which ASOC provided comments and copies of its submissions to IMO bodies.
- the October 2008 IUCN General Assembly in Barcelona, holding a workshop for delegates on key Antarctic protection issues and sponsoring a Resolution on Antarctica that was approved unanimously by IUCN members.

In addition, ASOC attended:

- the annual meeting of the International Whaling Commission in Santiago in June 2008 as an accredited observer, introducing a paper calling for a Management Plan for the Southern Ocean Whale Sanctuary and supporting the proposal for coordinated long-term research in the Sanctuary. ASOC also attended the March 2009 intersessional meeting of the IWC, in Rome, Italy.
- the Advisory Group meeting of the Agreement on Conservation of Albatrosses and Petrels as an accredited observer in Cape Town, August 2008.
- the 27th Meeting of the Convention for the Conservation of Antarctic Marine Living Resources in October 2008, introducing several information papers covering Antarctic krill management, the need for a network of Marine Protected Areas in the Southern Ocean, the impacts of climate change on the Antarctic marine ecosystem, and the need for trade measures in CCAMLR.
- IMO meetings, including the Marine Environment Protection Committee (MEPC) 58th Session (October 2008) where ASOC was calling for a comprehensive assessment of all environmental impacts from all forms of vessels operating in Antarctic waters; the Bulk Liquids and Gases sub-committee (BLG) 13th Session (March 2009), which developed a revision to the MARPOL Convention Annex I to ban the carriage and use of heavy grade fuel oil on ships operating in Antarctic waters; and the Ship Design and Equipment sub-committee (DE) 52nd Session, which developed a revised set of Guidelines for ships operating in polar waters.
- the Intergovernmental Meeting of Experts on Biological Prospecting in the Antarctic Treaty Area held in Baarn, Netherlands in February 2009, as an invited expert.
- the Joint CEP/SC CCAMLR workshop prior to the ATCM XXXII, introducing a document outlining opportunities for collaborative work between the two bodies.

Concluding Remarks

The Antarctic region is facing ever-increasing pressures from global climate change and a diversifying range of activities within the region. ASOC and its member groups around the world hope that the Antarctic Treaty Consultative Parties utilize the opportunity afforded by the 50th anniversary celebration to take concrete actions and make decisions in Baltimore that will protect the Antarctic environment over the long term. This will take leadership and a willingness to set aside partisan concerns in the larger public interest, in order to meet the responsibilities articulated in the Antarctic Treaty and replicated in all Antarctic Treaty System instruments.

Report of the International Association of Antarctica Tour Operators 2008-2009

Introduction

The International Association of Antarctica Tour Operators (IAATO) is pleased to present a report of its activities to ATCM XXXII in Baltimore, Maryland, USA from April 6-17, 2009, 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 2008-2009 fiscal year, IAATO maintained its total membership level at 108 companies and organizations. A Membership Directory, regularly updated, can be found on line at www.iaato.org.

As an organization, IAATO provides an online and central office resource for its members. Comprehensive operational guidelines and procedures are stored in the *Members Only* section of the website for reference, research purposes and downloading by its members (www.iaato.org). Regular updates and information are shared with members throughout the year, both in the field and home offices. The aim is to encourage the highest possible operating standards for IAATO companies by providing them with the information needed for a safe and environmentally responsible operation.

Coinciding with the start of the new 2008-2009 fiscal year, a new Executive Director was appointed to manage the IAATO Secretariat. IAATO Secretariat offices were relocated in July 2008 to 179 Wayland Avenue in Providence, Rhode Island, USA, and a full-time office manager was hired. In addition, the position of IAATO Environmental Operations Manager became full-time. All members of the Antarctic community are welcome to visit the new IAATO offices.

Primary Activities & Developments

IAATO continues to focus its activities in several key areas. The following is a brief synopsis of organizational activities:

37. **Seasonal Instructions:** The Seasonal Instructions to operators provide a comprehensive resource of materials and guidelines adopted by both IAATO and the Antarctic Treaty System. In addition to the annually amended Instructions, current updates are circulated to operators throughout the season as necessary, and are posted to the Members Only section of the IAATO website.

38. **Field Operations Manuals:** For the 2008-2009 season, IAATO produced and distributed for the first time to its members a standardized Field Operations Manual (FOM) for use by expedition leaders (ELs) and staff, captains and officers and by staff in members' home offices. A comprehensive, 800-page, two-binder compendium, the FOM is based on the traditional expedition leader's handbook previously created independently by operators for their own vessel or operation. By incorporating guidelines and operating procedures established over the years by experienced ELs into a standard new format, IAATO is taking steps to ensure consistency in the transmittal of the latest information on regulations and guidelines. The FOM will also serve as the "course manual" in the IAATO Field Staff Training and Certification Scheme (see #19 below).

39. **Ship Scheduler:** The web-based IAATO Ship Scheduler continues to serve a vital management function of the organization, allowing for the pre-scheduling of visits to sites prior to the season. This not only ensures the presence of not more than one ship at one site at one time, but also implements the requirements laid out under the 45 IAATO Site Guidelines and the 18 ATCM Site Guidelines. In addition to noting each vessel's day-to-day schedule,

the Ship Scheduler also stores a named contact for each voyage (the expedition leader, vessel Master or Ice Master) and departure dates and ports.

40. Member-operators input data into the Ship Scheduler prior to the season (July), with the resulting spreadsheet available as a planning tool in September. Once the Antarctic operating season begins, the Ship Scheduler is "locked" and ELs further coordinate their landings in the field as needed. IAATO members have coordinated their schedules consistently since 1991, and the online database and creation of a master schedule have facilitated this effort in recent years. Prior to and during the season, the master schedule is available to non-IAATO vessel operators on a request basis. The resulting coordination with other non-IAATO vessels helps assure compliance with the intention of only one ship at one site at one time.

41. Access to the Ship Scheduler during the 2008-2009 season was also made available to RCCs, COMNAP and national programs that interact with IAATO on a regular basis with respect to station visits. The master schedule was circulated to numerous Antarctic Treaty Parties, the Antarctic Treaty Secretariat, IHO/HCA, AMVER and others at the beginning of the Antarctic season. This facilitates further scheduling, transport of scientists, and the coordination of logistics and contingency planning.

42. The Ship Scheduler allows for an effective exchange of information between operators, the coordination of station visits and ship itineraries in advance, and ensures compliance with requirements under adopted Site Guidelines. It also assists the IAATO Secretariat and IAATO members in their pre-planning to address potential cumulative environmental impact issues and site usage at the various landing sites. The tool also has proven useful as a multiyear planning tool for ships' arrivals and departures in port cities such as Ushuaia, Argentina.

43. **Vessel and Member Database:** IAATO's Vessel Database is a comprehensive web-based data program that maintains detailed information on all member-operated vessels and the companies who operate them. Each IAATO member is responsible for uploading detailed vessel and company information. This online program was created primarily as an aid to the management of the IAATO Emergency Contingency Plan, and to maintain an accurate, up-to-date database on company and vessel specifications. For example, a contact information sheet for IAATO's fleet of vessels is generated through the database each season. Components of this database and contingency plan were tabled at ATCM XXIX IP 29 IAATO Vessel Emergency Contingency Plan-An Update (2006). MRCCs and COMNAP have full access to the vessel database; this enables them to assess the assets they have available should an emergency occur.

44. **Vessel Tracking:** it was agreed during IAATO 19th Annual Meeting (2008, Punta del Este, Uruguay) that it would be desirable for all IAATO member vessels to be tracked on a single website. This would assist in both contingency response but also, in due course, become an additional management tool for day-to-day operations. During 2008-2009 season, sixty percent of IAATO vessels took part in the scheme, and its usefulness was proven during both the MV Ushuaia and the MV Ocean Nova incidents. Efforts are underway to bring the remainder of IAATO vessels onboard with the satellite tracking initiative. Full information on the tracking scheme can be found on the IAATO website.

45. **Post-Visit Report Database:** IAATO continues to maintain a single electronic database to store information downloaded from all members' Post Visit Reports (PVRs), using the PVR template approved at ATCM XXVIII Resolution 6 (2005) Antarctic Post Visit Report Form. Established in 2003, this database provides a detailed digital record of all member activities. Reports from the database, plus tourism statistics compiled by the US National Science Foundation since 1989, are openly available under Tourism Statistics on the IAATO website at www.iaato.org. The 2008-2009 data is estimated to be available in May 2009.

46. IAATO welcomes submission of non-IAATO member PVRs for inclusion in the database. A blank PVR form is posted on Operational Procedures on the IAATO website (www.iaato.org).

47. **Site Guidelines and Field Staff Interviews:** During the 2008-2009 intersessional period, the IAATO Site Guidelines Committee assisted in the development of seven additional site guidelines with several Antarctic Treaty Parties. In addition, field staff were interviewed through the season to discuss operational issues and provide an opportunity for practical feedback on the effectiveness of the ATCM endorsed Site Guidelines. This feedback will be discussed within the IAATO Site Guidelines Committee, and at IAATO's 20th Annual Meeting in Providence, Rhode Island (June 2009).

48. **IAATO Observers:** IAATO requires new member-operators to carry an appointed observer on one cruise during their initial season of operation as an IAATO member. Guided by a detailed checklist, the observer reports on critical aspects of an operation and provides an unabridged report to the IAATO Membership Committee for analysis and approval. These reports are then presented at the next IAATO Annual Meeting, where they are instrumental in providing information for Members on which to base their voting decisions to accept or reject a new member into IAATO. During the 2008-2009 season, five new members carried IAATO observers. For further information on the IAATO Observer program, see Section 12 of this Annual Report.

49. **Safety and Conservation Briefing:** IAATO continues to rely on the use of its Safety and Conservation Briefing. This is a PowerPoint presentation based on Recommendation XVIII-1 (1994) and is mandatory for all passengers and crew landing in Antarctica. A Quicktime slide show version of this can be found on iaato@iaato.org under Guidelines.

50. **Introduced Species or "Aliens**": Operational procedures were updated to continue to support all methods necessary to eliminate the potential spreading of Antarctic diseases and translocation of non-native species. During the 2008-2009 season, an IAATO member field staff person reported the discovery of a non-native plant species at Whalers Bay, Deception Island.

51. **Discovery of High Mortality Events**: IAATO High Mortality Procedures were followed on two occasions as members remain vigilant regarding the potential discovery and reporting of high mortality events in both the Antarctic and sub-Antarctic Islands. During the 2008-2009 season, IAATO members alerted British Antarctic Survey (BAS), the US National Science Foundation (NSF) and sub-Antarctic island groups to two possible high mortality events. In each instance, evidence indicates that these were due to low food supplies rather than pathogen-related mortalities. Nonetheless, full High Mortality Procedures were followed as a precaution. IAATO Procedures for the Discovery of a High Mortality Event is in the IAATO Field Operations Manual (section 6b), and posted on the Members Only page of the IAATO website (www.iaato.org).

52. **Station Visits:** IAATO continued to closely coordinate schedules for station visits and landings with the United States Antarctic Program (Palmer, McMurdo and South Pole Stations), British Antarctic Survey (Rothera, Halley and Signy Stations) and Port Lockroy. "IAATO Standard Procedures for Station Visits" is in the IAATO Field Operations Manual (section 12b) and posted on the Members Only page of the IAATO website (www.iaato.org).

53. **Science News Sheet:** During the IPY, IAATO has provided its field staff with information on various research projects that are of interest to both tourists and field personnel. The Science News Sheets provide a dedicated channel for this information and aim to support the IPY, promoting relations between the scientific and tourist community. Recently published Science News Sheets can be found on the Information Papers page of the IAATO website (www.iaato.org). IAATO welcomes input from national programs in order to provide education and outreach to tourists travelling to Antarctica and the general public who visit IAATO's website.

54. **Seabird Landings Poster and Report Form:** Prior to the 2008-2009 Antarctic season, IAATO coordinated efforts with one of its members to develop and distribute a new poster/flyer on seabird landings at sea. The poster outlines measures designed to reduce the

likelihood of nocturnal bird landings resulting from unnecessary or overly bright lights on vessels. A report form was also distributed to members for use in the field. The poster and additional information can be downloaded from the Information Papers page of the IAATO website (www.iaato.org).

55. **Education and Outreach:** IAATO member-operators continue to use four large format size posters for display aboard vessels and in member company offices as educational tools entitled:
    - Guidance for Visitors to the Antarctic, Recommendation XVIII-1 (1994) http://www.iaato.org/docs/Visitor_Guidelines-1.pdf
    - Marine Wildlife Watching Guidelines (Parts 1&2) http://www.iaato.org/wildlife.html
    - IAATO Boot and Clothing Decontamination Guidelines for Small Boat Operations http://www.iaato.org/docs/Boot_Washing07.pdf

56. **Yacht Package:** In an effort to promote understanding of safe and environmentally responsible private sector travel to the Antarctic, the one-off Yacht Package, which includes comprehensive operating information, continues to be made available for private one-off yacht visitors who are not IAATO members. This package was detailed in IP 110 IAATO Information Outreach to Private One-Off Non-Member Expeditions, ATCM XXX (2007), and is available on the Information Papers page of the IAATO website (www.iaato.org).

57. **Emergency Response:** Continued use was made of the IAATO Member Emergency Medical Evacuation Response (EMER) action plan. Information on the number of IAATO medevacs during the 2008-2009 season will be available once end-of-season reports are finalized and tabulated. IAATO Emergency and Medical Evacuation Response (EMER) is in the IAATO Field Operations Manual (section 4c) and is posted on the Members Only page of the IAATO website (www.iaato.org).

58. **IAATO Exchange of Information**: In addition to distributing the IAATO Field Operations Manual, coordination with all new members in their start-up operations was provided. Support and advice is offered on an ongoing basis to all member companies. In recent years, an introductory information session has been added to the IAATO Annual Meeting for new members to assist in this effort.

59. **IAATO Field Staff Training and Certification Scheme:** The pilot phase of a new field staff training and certification program has begun. Using the new IAATO Field Operations Manual (FOM) as a course book, expedition leaders and staff can be assessed online at their convenience, with assessment results available to IAATO, the field staff and their operating company. A new IAATO Field Staff Logbook is also being developed, enabling field staff to record their work histories and credentials into a standardized, recognized format that will facilitate their employment opportunities with IAATO member-operators. It will also assist member-operators to hire the most qualified personnel available, in their goal of ensuring safe and environmentally responsible travel to Antarctica.

1 IAATO Membership and Activities

1.1 IAATO member offices are located worldwide, including in the following Antarctic Treaty Parties: Argentina, Australia, Belgium, Canada, Chile, France, Germany, Italy, Japan, The Netherlands, New Zealand, Norway, Sweden, United Kingdom and the United States. A full Membership Directory can be found on the IAATO website at www.iaato.org.

1.2 Membership during the 2008-2009 Season:

IAATO's total membership numbers for the 2008-2009 season remain unchanged at 108 from the previous season, with one new member and one member dropping out due to lack of any cruise operations in Antarctic waters during the season just ended. Several new applications for membership are currently under review.

The breakdown of the 108 IAATO companies that are members from July 1, 2008-through March 6, 2009 includes the following categories of membership:

Members: 44 Member companies. These included 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.

Associate B1 members: Formerly known as Provisional, this category includes 12 ship operators, small vessel/yacht operators, and companies that charter vessels from existing members. Following a season of operation as an IAATO Associate B1 member, these companies are eligible to be approved as Members, contingent upon meeting certain requirements.

Associate B2 members: This category includes 35 tour operators, travel agents or organizers that do not operate Antarctic tour programs themselves, but book into other members' programs.

Affiliate members: This category includes 17 companies, organizations or individuals with an interest in supporting Antarctic tourism and the IAATO objectives.

1.3 Membership by Operational Activities:

During the 2008-2009 period (July 1, 2008 – June 7, 2009) IAATO members were categorized by the following types of operational activities:

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. (40 Members or Associate B1 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. (Nine Members or Associate B1 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. (Five Members or Associate B1 members.)
4. Organizers of land-based operations. (One Member.)
5. Organizers of air operations with over-flights only. (One Associate B2 member)
6. Organizers of air/cruise operations. (One Member.)

1.4 IAATO Bylaws:

IAATO Bylaws and Objectives can be found on line at www.iaato.org under *About IAATO*.

2 2008-2009 Statistics

2.1 Overview of Tourist Numbers

Because of the early timing of ATCM XXXII, it has not been possible to compile or analyze the statistical data for the just-concluded 2008-2009 season. It is expected that this information will be available in June 2009, and will be posted on the IAATO website (www.iaato.org) under *Information Pages*.

It is, however, possible to give an estimated general picture of the 2008-2009 Antarctic tourism season relative to the previous season and to earlier estimates for the season just ended. Overall, total visitors in all categories of operational activities for the 2007-2008 season were previously reported

by IAATO to be 46,265 (ATCM XXXI IP 85 *IAATO Overview of Antarctic Tourism 2007-2008 Antarctic Season and Preliminary Estimates for 2008-2009 Antarctic Season)*. For the season just ended, this number is expected to drop 16 per cent to approximately 38,900 including over-flights and cruise-only visitors (counting IAATO member passengers only). It is worthwhile noting that this number is eight per cent below the 42,298 that IAATO members had projected in June 2008 for the 2008-2009 season. Estimates for the 2009-2010 season can be found in ATCM XXXII IP 86 *IAATO Overview of Antarctic Tourism 2008-2009 Antarctic Season and Preliminary Estimates for 2009-2010 Season.*

3 Participation in Organized Meetings during 2008-2009 and IAATO 20th Annual Meeting

During the year, IAATO members participated in several internal IAATO and external international meetings, liaised with National Antarctic Programs, government agencies of the sub-Antarctic island groups, and scientific and environmental organizations.

3.1 IAATO's 20th Annual Meeting is scheduled for June 8-11, 2009 in Providence, Rhode Island. Interested parties that would like to attend or participate should contact IAATO at iaato@iaato.org.

3.2 IAATO sent a representative to the COMNAP XX Meeting in St. Petersburg, Russia in late June, 2008. IAATO appreciates the opportunity to work cooperatively with COMNAP where mutual interests lie in both air and ship operations. IAATO supports further cooperation between its operators to ensure there is little or no disruption to science or station activities.

3.3 IAATO was pleased to send two representatives to the International Hydrographic Organization/Hydrographic Committee on Antarctica (IHO/HCA) Meeting in Rio de Janeiro, Brazil in October 2008. IAATO strongly supports and encourages the work of the HCA. This is the 6th year where IAATO has sent a representative to this meeting and appreciates the cooperative working relationship with the HCA. At the meeting, IAATO representatives invited officials of Treaty Party Hydrographic Offices (HO) to visit IAATO "ships of opportunity" to look at equipment onboard and advise masters and navigators on best practices in collecting hydrographic data in Antarctic waters. IAATO was appreciative of Argentina and Chile's expression of willingness to make information available on their respective Ice Navigation training courses.

3.4 IAATO sent two representatives to the *Workshop Towards Improved Search and Rescue (SAR) Coordination and Response in the Antarctic*, held in Valparaiso / Vina del Mar, Chile, August 12-14, 2008. The workshop was hosted by the Chilean Navy's Directorate General of the Maritime Territory and Merchant Marine (DIRECTEMAR) in collaboration with COMNAP. As a result of the meeting, significant improvements have been made in the coordination and communication between the relevant Regional Control Centers (RCCs), COMNAP and IAATO.

3.5 IAATO and several of its UK-based vessel operators participated in an Antarctic Shipping Workshop, September 11, 2008 at the Foreign and Commonwealth Office in London, UK. This workshop was designed to review the tasks sent to IMO's Design and Equipment (D&E) Sub-Committee Correspondence Group, which is considering amendments to the guidelines for ships operating in Arctic ice-covered waters to make them applicable to ships operating in similar conditions in the Antarctic Treaty Area.

3.6 IAATO and several of its UK-based members took part in a workshop sponsored by the Foreign and Commonwealth Office's Polar Regions Unit, January 29, 2009 in London, UK. The workshop furthered the intersessional discussion on a *Strategic Vision for Tourism and Non-Governmental Activities in Antarctica over the Next Decade*. IAATO appreciates the opportunity to have shared in the process that resulted in the submission by the UK of ATCM XXXII WP 10, *Strategic Vision of Antarctic Tourism for the Next Decade.*

3.7 IAATO's Marine Committee co-sponsored with Cruise Lines International Association (CLIA) a two-day workshop to discuss vessel operations, safety and related issues, February 10-12, 2009 in Arlington, VA, USA. Twenty-four participants attended, including IAATO

vessel operators and invited experts. The outcomes of the meeting will be presented to IAATO members at the IAATO Annual Meeting, Providence June 8-11, 2009. These outcomes will include proposed: advice on forward-looking echo-sounders; advice on vessel operations in the vicinity of ice cliffs, icebergs and bergy bits; and advice on shore-stranding equipment. In addition, a detailed proposal will be tabled for the IAATO Marine Committee and invited experts to launch the second phase of development of a geographical and seasonal approach to management of ship-based tourism. This geographical and seasonal approach would be based on a tiered-risk assessment, a concept that received considerable support and sympathy at the recent IMO D&E Sub-Committee Meeting (see 3.8 below), relative to the proposed amendments of the Guidelines for Ships Operating in Arctic Ice-Covered Waters.

3.8 IAATO sent a representative to the International Maritime Organization (IMO) Design and Equipment Subcommittee 52nd meeting in March 2009, in London, UK, participating as a member of the Cruise Lines International Association (CLIA) delegation.

3.9 Numerous other meetings took place between IAATO members, IAATO Committees and their representative governments throughout the year. IAATO continues to maintain a policy of availability for discussions on topics of tourism with Treaty Parties and others.

4 Field Coordination

4.1 IAATO compiles seasonal documents including vessel call data, a comprehensive ship scheduler, emergency contact information, expedition leader schedules, and important instructional procedures for responsible operations. This information is included in the IAATO Field Operations Manual (FOM). In addition IAATO maintains for its members an archive of relevant guidelines, standard operating procedures, past papers and articles relating to Antarctic Tourism.

4.2 IAATO's comprehensive directory of Vessel Call Data and the Master Ship Schedules are shared with COMNAP, MRCCs 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 important that station contact information be kept current for communication, planning and emergency purposes.

4.3 Expedition leaders and ship's officers on member vessels 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 note concerns about potential environmental impacts, etc. At 1930 hrs local time, expedition staff monitor agreed-on radio frequencies to change itineraries if needed or report on ice conditions, weather or wildlife sensitivities. This constant cooperation and coordination between members is a key part of the IAATO Emergency Contingency Plan.

4.4 IAATO's Emergency Medical Evacuation Response plan (EMER), in place since 1998, continues to underpin medical evacuations.

5 Environmental Impact Assessment and Advance Notification

5.1 IAATO members are required to submit Environmental Impact Assessments (EIAs), Advance Notification and/or operational documents that substitute for EIAs to their national authorities pending each countries legal processes. Not all governments require EIAs or yearly updates.

5.2 A comparison of the various EIAs and the level of EIAs that individual operators are required to submit to their respective national authorities reflect some notable variations among documents and requirements. IAATO endeavors to bridge these variations in required documentation for ship-based members, in particular to ensure that mitigation measures and procedures are in place to avoid environmental impacts.

6 Procedures to Prevent the Introduction of Non-Native Species

6.1 For the past nine seasons, IAATO's Boot and Clothing Decontamination Recommended

Guidelines and Translocation of Diseases Protocol have been in place and have been shown to be very effective. These guidelines can be found in the IAATO Field Operations Manual (FOM) and also on the Members Only page of the IAATO website (www.iaato.org).

7 Reporting of Tourism and Non-governmental Activities and Database

7.1 As noted previously in this paper, IAATO requires its members to submit to IAATO the ATCM approved Post-Visit Reports (PVRs) on the conclusion of their activities.

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. Should any Parties wish to send IAATO a copy of Post Visit Report forms received from non-IAATO operators in order for the data to be incorporated into the electronic database, IAATO would be pleased to include this data and believes this will further the ability by all to address cumulative impact issues, monitor site guidelines compliance and assess trends in use.

8 Implementation of Recommendation XVIII-1 (1994) Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic and Guidance for Visitors to the Antarctic, and Other Guidelines

8.1 Recommendation XVIII-1 (1994) 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 for Visitors and Tour Organizers.

8.2 IAATO remains concerned about tourists traveling on non-IAATO operated yachts visiting the Antarctic who may not be aware of the Environmental Protocol and its obligations. Every visitor and operator must be ever vigilant regarding their responsibilities for landing sites and the marine environment.

8.3 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, a presentation consisting of the IAATO 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 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 (crew) are required to attend the briefing.
- The Recommendation document is available on the Guides & Resources page of the IAATO website (www.iaato.org) in English, Chinese (Mandarin), Dutch, French, German, Italian, Japanese, Russian and Spanish.

8.4 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), and boot and clothing decontamination and more. See ATCM XXV IP 72 Guidelines for Tourist Operations in Antarctica and ATCM XXXI IP 83 Regulation of Antarctic Tourism—A Marine Perspective.

9 Update on Marine Incidents 2007-2008, and Marine Incidents 2008-2009

9.1 **Marine Incidents 2007-2008 – Final Report on MS Explorer Incident:** With respect to the loss of the MS Explorer in November, 2007 and analysis of the final report from the Republic

of Liberia, Bureau of Maritime Affairs, IAATO has not seen the report at the time that this Information Paper was submitted. Consequently, IAATO has confined its discussions to issues related to the IAATO-wide response and consideration of potential enhancements to current management practices. Once the final investigative report is made public, IAATO's Marine Committee will analyze it in detail, with the intention of assessing any further steps that can be taken to enhance vessel safety.

In the meantime, IAATO marine operators have held two multi-day meetings since the incident to deliberate critical issues pertaining to vessel operations and safety. The results of the first meeting, in February, 2008, were detailed in ATCM XXXI IP081 Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations, Safety and Related Issues, which summarized the immediate steps which were taken as well as longer term strategies. These strategies were revisited and refined in a recent joint meeting in February 2009 of IAATO and CLIA (Cruise Lines International Association) vessel operators. Central to the discussion of the 2009 meeting was the proposal to develop a tiered-risk assessment proposal based on a geographical and seasonal sector to aid both regulation and management of polar vessel operations.

9.2 **Marine Incidents 2008-2009:** Two separate vessel incidents occurred during the recently concluded Antarctic season. The first involved the MV Ushuaia, which grounded at the entrance of Wilhelmina Bay, near Cape Anna, on December 4, 2008 with 82 passengers and 40 crew. The operator of the vessel, Antarpply Expeditions, immediately notified the relevant MRCCs. Another IAATO vessel, the MV Antarctic Dream, was seven nautical miles away at the time of the incident, and quickly came to the assistance of the MV Ushuaia. The Chilean Navy vessel AP Aquiles and Chilean naval tug ATF Lautaro were also on the scene within hours. As a precautionary measure requested by Chile, the passengers of the MV Ushuaia were transferred the following morning using Zodiac landing craft of the MV Ushuaia and MV Antarctic Dream to the AP Aquiles, which then proceeded to Eduardo Frei Station, King George Island. Passengers were flown from King George Island by Argentine aircraft to Ushuaia on December 6, 2008. Two days later, the MV Ushuaia was floated free with the assistance of the ATF Lautaro. IAATO would like to thank Chile for this effort, which made unnecessary the alternative response arrangements that had been planned using other IAATO vessels.

Despite the puncture of two fuel tanks of Marine Gas Oil (MGO), leakage was minimal and dissipated quickly. The MV Ushuaia proceeded under her own power to an anchorage in the South Shetland Islands to await good weather for the northbound crossing of the Drake Passage. The Drake Passage crossing occurred in close proximity and frequent communications with two other IAATO vessels. Following repairs in dry dock in Punta Arenas, the MV Ushuaia returned to scheduled service on January 27, 2009.

9.3 A second grounding incident, on February 17, 2009, involved the Quark Expeditions' vessel, MV Ocean Nova in Marguerite Bay, west of Debenham Island and approximately two kilometers from the Argentine research station San Martin. The captain of the vessel contacted the Argentine MRCC to notify them of the incident. As a result, the Spanish naval vessel B.I.O. Hesperides was soon on the scene. Onboard MV Ocean Nova were 64 passengers and 41 crew. When initial attempts that evening failed to refloat the vessel, all passengers were transferred the following afternoon to another Quark vessel, the MV Clipper Adventurer. The Spanish naval vessel B.I.O. Hesperides continued to stand by, ready to assist if needed.

On February 18, the MV Ocean Nova was freed of her position. There was no serious damage to the hull and no leakage of fuel. Following an underwater inspection by divers from B.I.O. Hesperides, the MV Ocean Nova headed north, crossing the Drake Passage in close proximity to the MV Clipper Adventurer. Both vessels arrived in Ushuaia on February 22. The MV Ocean Nova cancelled her last voyage of the season, in order to undergo further inspections and repairs in Ushuaia before returning to Europe.

At the time of both incidents, frequent updates were forwarded to the Antarctic Treaty Secretariat and posted on the IAATO website, www.iaato.org. Additional details regarding both incidents can still be viewed on the website.

During both incidents, the IAATO Emergency Contingency Plan and Incident Report template, which had been reviewed following the MV Explorer incident, was used to underpin the response.

10 Scientific and Information Support

Members continue to provide logistic and scientific support to National Antarctic Programs and to the sub-Antarctic Islands facilities providing a cost-effective resource for the scientific community. During the 2008-2009 season, scientists, support personnel and equipment for various National Antarctic and sub-Antarctic Programs were provided transport to and from stations, field sites and gateway ports. Because of the timing of ATCM XXXII, prior to the submission of most IAATO operator End of Season Reports, a detailed listing of scientific support provided by IAATO members is not yet available. This information will be available in May, and will be posted on the Information Papers page of the IAATO website (www.iaato.org), adjacent to this Annual Report. It will also be forwarded to the Antarctic Treaty Secretariat for further distribution to Treaty Parties.

Specific requests for logistic or other support can be made directly with members or via the IAATO Secretariat.

11 Conservation Research, Academic and Scientific Support

Members and their passengers continued the tradition of direct financial contributions to many organizations active in Antarctica. Because of the timing of ATCM XXXII, prior to the submission of most IAATO operator End of Season Reports, a detailed listing of financial contributions by IAATO members and their passengers is not yet available. This information will be available in May, and will be posted on the *Information Papers* page of the IAATO website (www.iaato.org), adjacent to this Annual Report. It will also be forwarded to the Antarctic Treaty Secretariat for further distribution to Treaty Parties.

12 Observers On Board Member Vessels

As noted in point 8 under Primary Activities & Developments, IAATO requires B1 Associate and Probationary members to carry an appointed observer before they are eligible to apply for Member status. There were no Probationary members during the past season.

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's *Checklist for Observers* form (version October 2007) is used by all observers, providing for a consistent reporting of all operations. In addition, ATCM XIX Resolution 5 (1995), *Antarctic Treaty Inspection Checklist B – Vessels Within the Antarctic Treaty Area* is also provided to the appointed observer. IAATO-operated vessels have been carrying observers since 1991.

Furthermore, IAATO members operating from New Zealand to the Ross Sea region carry New Zealand-assigned observers on all voyages, as per New Zealand requirements.

13 With Thanks – Cooperation with National Programs, the Antarctic Treaty Parties and all Stakeholders

IAATO appreciates the opportunity to work cooperatively with Antarctic Treaty Parties, COMNAP, SCAR, CCAMLR, IHO/HCA, ASOC and others towards the long term protection of Antarctica. In particular we appreciate being able to contribute towards the ATCM-agreed ICGs, discussion groups, other intersessional meetings etc.

The following provided assistance and operational guidelines to IAATO during the 2008-2009 season for which members are grateful:

- To all Stations in the Antarctic and Sub-Antarctic who welcomed tourists and broadened their views on the value of science and provided friendly, educational and rewarding experiences for tourists.
- United Kingdom: United Kingdom Foreign and Commonwealth Office, British Antarctic Survey, U.K. Antarctic Heritage Trust, Port Lockroy staff, 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 and their process for arranging visit applications.
- New Zealand: Ministry of Foreign Affairs and Trade of New Zealand, Antarctic New Zealand, and Department of Conservation for assistance with Scott Base and the New Zealand Sub-Antarctic Islands. And to New Zealand Antarctic Heritage Trust for their assistance with visits to Ross Sea Huts.
- Chile and Russia: For the use of the runway at Marsh/Frei for medical emergencies in conjunction with Aerovias DAP and to Bellingshausen Station for accommodation and taking last minute requests during medevacs.
- United States: Palmer, McMurdo and South Pole Station personnel for hosting organized visits throughout the season and providing operational guidelines to operators in advance of the season
- Chile, Argentina and Spain: for assisting by air, land and sea with regard to the *MV Ushuaia* and *MV Ocean Nova* groundings.

14 Update: IMO Heavy Fuel Oil Discussion

After the initial submission of this IAATO Annual Report, information has been brought to IAATO's attention about which we would like to ask the ATCM for clarification. This is in regards to recent discussions within the IMO to Decision 8 (2005, Stockholm) *Use of Heavy Fuel Oil (HFO) in Antarctica.* Since this Decision was adopted in 2005, there has not been, to our knowledge, any update from IMO to ATCM as to progress within the IMO on this matter.

We have recently learned that the IMO sub-committee that deliberated this issue (Bulk Liquids & Gases) has put forward in March 2009 an amendment to MARPOL that will ban not only HFO, but will also ban Intermediate Fuel Oil (IFO). In addition, the amendment bans not only the use of these fuel oils, including IFOs, but also their carriage in Antarctic Treaty waters. Reference to banning "the use and carriage of heavy grade oil in Antarctic waters" was noted by ASOC in IP034 *Managing Antarctic Vessels – Avoiding Future Disasters*, submitted to this Meeting.

It appears to IAATO that the Decision taken in 2005 by ATCM and sent to IMO has now been expanded to a much broader set of issues, with wide-ranging implications.

Report by the International Hydrographic Organization (IHO) on "Cooperation in Hydrographic Surveying and Charting of Antarctic Waters"

Introduction

To ensure safety of life at sea and the protection of the Antarctic marine environment and dependent and associated ecosystems it is require a coordinated effort and a great spirit of cooperation. The International Hydrographic Organization (IHO) plays an important role in this matter through its Hydrographic Commission on Antarctica (HCA) that meets annually to coordinate hydrographic and nautical cartographic activities. This Report covers the period since the last ATCM and intends to provide a brief summary of the key benchmarks achieved as well as to highlight the challenges for the years to come.

It has been made known to the IHO that the Seminar organized by the HCA at the last ATCM to raise awareness on the importance of Hydrography in Antarctic, triggered a much better understanding between national Antarctic authorities and national Hydrographic authorities, both agreeing on the need to improve the priority assigned to conduct hydrographic surveys in Antarctica and to work closer. The Seminar was considered a success and will be repeated with some slight modification to its content, at the next COMNAP Council in Punta Arenas, Chile, in August 2009.

The IHO confirms that it continues to assign Antarctica a high priority. The different maritime accidents that have occurred in Antarctica has reinforced the HCA principles of coordination and cooperation with all the relevant international organizations, to improve safety of life at sea, safety of navigation, protection of the marine environment and marine scientific research in Antarctica.

The IHO Hydrographic Commission on Antarctica

The 8th Meeting of the IHO Hydrographic Commission on Antarctica (HCA) took place at the Directorate of Hydrography and Navigation (DHN), Niteroi, Rio de Janeiro, Brazil, 06-08 October 2008 thanks to the kind invitation of Vice Admiral Luiz Fernando PALMER Fonseca, Hydrographer of Brazil.

The Chairman, Capt Gorziglia (IHB Director) opened the meeting welcoming the 15 HCA Member States present (Argentina, Australia, Brazil, Chile, Ecuador, France, Germany, India, Italy, Norway, Peru, Spain, United Kingdom, Uruguay and USA) and observers from COMNAP, IAATO and IOC. It has to be highlighted that since the last ATCM, four States have signed the Statutes of the HCA - Japan, Republic of Korea, Uruguay and Venezuela - and therefore have become full members of the Commission, the total number of which is now 23. (**Annex A**)

At its last meeting, the Commission considered different matters including the issue of membership, the situation of which was provided above. The status of the action list agreed at the last meeting; the outcome of the XXXI ATCM including the Seminar and the status of nautical charting and the hydrographic survey programme received special consideration. RAdm Ian Moncrieff, National Hydrographer of the UK was elected Vice Chairman of the HCA

1. Status of Actions Agreed.

The Commission reviewed the status of the actions agreed at the last meeting and confirmed that almost all actions had been completed.

The provision of Hydrographic Services in Antarctica and the application of SOLAS Convention, Chapter V, Regulation 9, "Hydrographic Services" was thoroughly discussed. While the Commission recognizes that this regulation is not applicable as such to Antarctic waters, it was agreed on the need

to raise this subject to the XXXII ATCM. The recent Resolution 5 (2008) generates a very good platform as it provides a recommendation to Governments on an individual basis. What seems to be missing is an indication from the AT Parties on a collective regulation aiming at assigning hydro-cartographic responsibilities in Antarctica. It is the view of the HCA that AT Parties should consider addressing this subject aiming at setting a position defining obligations/responsibilities for the provision of hydrographic services in Antarctica. **Annex B** contains Regulation 9, the text of which could be used for developing a particular regulation for the Antarctic Treaty area.

The importance to keeping national ATCM delegates well informed by their corresponding national hydrographic authorities on IHO/HCA activities was found to be very important and in-line with the scope of ATCM Resolution 5 (2008) on "Improving hydrographic surveying and charting to support safety of navigation in the Antarctic region". It is the Commission's view that this sort of briefing should be considered as a permanent action to keep alive and enhance government support.

The Commission appreciated the strong support it receives from related international organizations, such as the ATS, IMO, IOC, COMNAP and IAATO. The GEBCO IHO/IOC program together with SCAR and the IBCSO project also merit especial mention.

2. Outcome of the XXXI ATCM and Seminar.

The Commission received with great enthusiasm the increased interest ATCM has been giving to hydrographic, nautical cartographic and marine safety information on Antarctica. ATCM Resolution 5 already mentioned, constitutes a clear and strong message to the Antarctic Treaty signatories Governments on the need to adopt all possible measures to gather hydrographic information suitable for the production of more reliable nautical charts.

The IHO would like to thanks those Governments that submitted working papers on the matter and proposed and supported the Resolution.

With regard to the Seminar organized by the IHO/HCA, the Commission discussed the very positive expressions received after the Seminar from various ATCM Delegates. Comments were very encouraging and the Commission agreed to thank ATCM for the opportunity offered to share IHO/HCA views on the status of nautical cartography and its effects on safety to navigation and protection of the marine environment. The Commission has also received a good feedback from the scientific community. Several national hydrographic authorities have been approached by their governmental agencies dealing with Antarctic, requesting more details of the situation. In brief, the Seminar seems to have built a bridge between national parties with similar interests but not working in a necessarily coordinated manner.

Concrete effects, such as an increase in hydrographic data gathering - hydrographic survey days in Antarctica -, or acceleration in the production on INT Charts cannot be assessed at this stage due to the short period elapsed, but we are optimistic that Resolution 5 (2008) will be seriously considered by the Antarctic Treaty Governments.

Following this Seminar, HCA is planning to deliver similar events at COMNAP and IAATO main meetings in 2009 and 2010 respectively.

3. Status of Nautical Charting.

The situation with regard to chart production is provided in detail in Annex C.

The INT Chart scheme includes 100 charts. Nowadays two new charts proposed by Brazil to cover the area of Elephant Island are under consideration. It has to be kept in mind that from time to time new requirements arise. The procedure HCA follows is that before accepting any new chart into the scheme, the proposal is closely examined by the HCA.

Till December 2009, 65 INT Charts will have been published, leaving 35 in the pending list. Special attention shall be given to the modest expectation on future production, as it is indicated bellow:

a) 3 charts are planned to be produced in 2010
b) 1 chart is planned for 2011
c) 4 charts are planned for 2012
d) 1 chart is planned for 2013
e) 0 chart is planned for 2014
f) 5 charts are planned for " no earlier than 2015"
g) 21 charts have not yet been considered in the planning.

It is evident that if there is no change in the priority assigned by Governments to hydrographic surveying and nautical chart production, it is likely that the existing INT Chart scheme will not be completed before year 2025. The IHO/HCA is extremely concerned about this situation.

The Commission is aware of the effort made by Australia, Chile, France, Italy, Norway and UK to produce ENC of Antarctic waters. 13 overview; 3 coastal; 5 approaches, 4 harbour, and one berthing ENC are available. Other 9 are in production. The ENC scheme for small scale has been approved and the ENC scheme for medium scale is under revision. The scheme follows that of the INT chart on which the ENC has been based.

4. Hydrographic Surveying Programme.

The Commission is fully aware that it is urgent to assign a high priority to hydrographic survey activities. At the last HCA meeting, its Chairman suggested the HCA Hydrographic Survey Programme Working Group to meet separately in order to review the existing terms of reference (dated 2004) and recommend concrete actions the Commission could take to move forward in line with the existing needs.

The WG offered updated terms of reference and a new name for the WG. Both were agreed and the actual name for the WG is "HCA Survey Prioritization WG".

The Commission tasked the WG to update the prioritized hydrographic survey plan approved at HCA in 2007, taking into consideration National Reports as well as discussions/outcome of the ad-hoc meeting of the WG. The Commission appreciated the offer made by COMNAP and IAATO to contribute to this work as Observers. The document to be prepared by the WG shall provide guidance on the priorities required to improve the INT Chart production.

5. Next HCA Meeting.

Following the kind invitation from the Hydrographer of South Africa, the Commission accepted with thanks and agreed to have the 9th HCA meeting in Cape Town, South Africa, 12-14 October 2009.

Conclusions

1) The IHO/HCA, supported by several international organizations and projects continues to facilitate the coordination and cooperation in hydrographic surveying and nautical chart production of Antarctic waters, therefore contributing to safety to navigation and protection of the marine environment.
2) Despite the efforts made to raise awareness of the importance of assigning a higher priority to hydrography, the IHO/HCA is concerned by the extremely low progress achieved in terms of nautical chart production. This has two causes, one is the very few hydrographic surveys conducted and the second is the low priority assigned to the cartographic processes.
3) The examination of Regulation 9 of SOLAS V by ATCM might help in identifying a way by which AT Governments could feel more committed to allocate resources to conduct hydrographic surveys and consequently produce the nautical chart of the areas which have voluntarily expressed their willingness to be a "producer nation".

4) The Seminar organized by the IHO/HCA allowed to share with the XXXI ATCM Delegates the concern of the hydrographic community derived from the low hydrographic activity in Antarctica. Resolution 5 (2008) recommending Governments, among others, to cooperate with HCA, constitutes a sign of the ATS's interest that we expect shall have positive effects on the insufficient level of provision of timely, reliable and updated hydro-cartographic information, products and services of Antarctica.

Recommendations

It is recommended that the XXXII ATCM:

1. Takes note of the IHO Report.
2. Takes action as regard to the conclusions in the Report.

Monaco, February 2009.

ANNEXES:

A: HCA Membership Situation.

B: SOLAS V Regulation 9 "Hydrographic Services".

C: INT Chart Present Production Status.

ANNEX A

HCA MEMBERSHIP SITUATION

(February 2009)

MEMBERS:

Argentina
Australia
Brazil
Chile
China
Ecuador
France
Germany
Greece
India
Italy
Japan
Korea, Republic of
New Zealand
Norway
Peru
Russian Federation
South Africa
Spain
United Kingdom
Uruguay
USA
Venezuela

OBSERVER ORGANIZATIONS:

Antarctic Treaty Secretariat (ATS)
Council of Managers of National Antarctic Programmes (COMNAP)
Standing Committee on Antarctic Logistics and Operations (SCALOP)
International Association of Antarctic Tour Operators (IAATO)
Scientific Committee on Antarctic Research (SCAR)
International Maritime Organization (IMO)
Intergovernmental Oceanographic Commission (IOC)
General Bathymetric Chart of the Oceans (GEBCO)
International Bathymetric Chart of the Southern Ocean (IBCSO)
IHO Data Center for Digital Bathymetry (DCDB)
Australian Antarctic Division
Antarctica New Zealand.

ANNEX B

SOLAS CHAPTER V

Safety of Navigation

Regulation 9

Hydrographic services

1 Contracting Governments undertake to arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information necessary for safe navigation.

2 In particular, Contracting Governments undertake to co-operate in carrying out, as far as possible, the following nautical and hydrographic services, in the manner most suitable for the purpose of aiding navigation:

.1 to ensure that hydrographic surveying is carried out, as far as possible, adequate to the requirements of safe navigation;

.2 to prepare and issue nautical charts, sailing directions, lists of lights, tide tables and other nautical publications, where applicable, satisfying the needs of safe navigation;

.3 to promulgate notices to mariners in order that nautical charts and publications are kept, as far as possible, up to date; and

.4 to provide data management arrangements to support these services.

3 Contracting Governments undertake to ensure the greatest possible uniformity in charts and nautical publications and to take into account, whenever possible, relevant international resolutions and recommendations. [**]

4 Contracting Governments undertake to co-ordinate their activities to the greatest possible degree in order to ensure that hydrographic and nautical information is made available on a world-wide scale as timely, reliably, and unambiguously as possible.

[**] Refer to the appropriate resolutions and recommendations adopted by the International Hydrographic Organization.

ANNEX C

INT Chart Present Production Status (February 2009)

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
1	900	Ross Sea	2 000 000	NZ	1998	
2	901	De Cape Goodenough à Cape Adare	2 000 000	FR	2006	
3	902	Mawson Sea and Davis Sea	2 000 000	RU	2000	
4	903	Sodruzhestva Sea	2 000 000	RU	2001	
5	904	Dronning Maud Land	2 000 000	NO	2002	
6	905	South Sandwich Islands	2 000 000	DE	?	
7	906	Weddell Sea	2 000 000	GB	2005	
8	907	Antarctic Peninsula	2 000 000	GB	2000	
9	908	Bryan Coast to Martin Peninsula	2 000 000	GB	2015?	
10	909	Martin Peninsula, Cape Colbeck	2 000 000	NO	?	
11	9000	Terra Nova Bay to Moubray Bay	500 000	IT	¿	
12	9001	Cape Royds to Pram Point	60 000	NZ	2007	
13	9002	Scientific Stations McMurdo and Scott	5 000	NZ	2007	
14	9003	Approaches to Scott Island	75 000	NZ	2008	
		Plan A – Scott Island	25 000			
15	9004	Terra Nova Bay	250 000	IT	2007	
16	9005	Da Capo Russell a Campbell Glacier Tongue	50 000	IT	2000	
17	9006	Cape Adare and Cape Hallett	50 000	NZ	2003	2006
		Plan A – Cape Adare	50 000			
		Plan B – Cape Hallett	50 000			
		Plan C – Ridley Beach	15 000			

		Plan D – Seabee Hook	15 000			
18	9007	Possession Islands	60 000	NZ	2003	2006
19	9008	Cape Adare to Cape Daniell	200 000	NZ	2003	2006
20	9009	Cape Hooker to Coulman Island	500 000	NZ	2004	
21	9010	Matusevich Glacier to Ob' Bay	500 000	RU	2000	
22	9011	Mys Belousova to Terra Nova Island	200 000	RU	2000	
		Plan A – Leningradskaya Station	1 000			
23	9012	Balleny Islands	300 000	NZ	2006	
		Continuation: Balleny Seamount	300 000			
24	9014	Approaches to Commonwealth Bay	25 000	AU	2002	
		Plan A – Boat Harbour	5000			
25	9015	Du Glacier Dibble au Glacier Mertz	500 000	FR	2004	
26	9016	De la Pointe Ebba au Cap de la Découverte	100 000	FR	2004	
		Plan A – Archipel Max Douguet - Port-Martin	10 000			
		Plan B – Archipel Max Douguet	30 000			
27	9017	De l'Ile Hélène au Rocher du Débarquement - Archipel de Pointe Géologie	20 000	FR	2002	
		Plan A – Archipel de Pointe Géologie	7500			
28	9020	Mill Island to Cape Poinsett	500 000	AU	1998	
29	9021	Approaches to Casey	50 000	AU	1999	Proj. 2010
		Plan A – Newcomb Bay	12 500			
30	9025	Davis Sea	500 000	RU	1999	
31	9026	Approaches to Polar Station Mirny	200 000	RU	1999	
32	9027	Road Mirny	10 000	RU	1999	
33	9030	Sandefjord Bay to Cape Rundingen	500 000	AU	1992	
34	9031	Cape Rundingen to Cape Filchner	500 000	AU	2002	
35	9032	Approaches to Davis Anchorage	12 500	AU	2003	
36	9033	Cape Rouse to Sandefjord Bay	500 000	AU	1991	Proj. 2011
37	9035	Magnet Bay to Cape Rouse	500 000	AU	1993	Proj. 2011
38	9036	Approaches to Mawson	25 000	AU	2007	
		Plan A - Horseshoe harbour	5000			
39	9037	Gibbney Island to Kista Strait	25 000	AU	2009(Dec)	
40	9040	Alasheyev Bight to Cape Ann	500 000	RU	2000	
41	9041	Alasheyev Bight	100 000	RU	1999	

42	9042	Approaches to Molodezhnaya Station	12 500	RU	1999	
43	9045	Vestvika Bay	500 000	JP	?	
44	9046	Eastern Part of Ongul	100 000	JP	?	
45	9047	Western Part of Ongul	10 000	JP	2009	
46	9050	Sergei Kamenev Gulf to Neupokojevabukta	500 000	RU	1999	
47	9051	Approaches to Leningradbukta	200 000	RU	1998	
48	9055	Muskegbukta Bay to Atka Gulf	500 000	DE	2009(Nov)	
49	9056	Approaches to Dronning Maud Land	300 000	ZA	2005	
50	9057	*To be determined*	200 000	DE	2009(Nov)	
51	9060	Cape Roule to Farell Bay	500 000	RU	2000	
52	9061	Approaches to Halley Base	200 000	GB	2005	
53	9062	*To be determined*	200 000	US	¿	
54	9100	Isla Marambio	25 000	AR	?	
		Plan A – Base aéra Marambio	5000			
55	9101	Peninsula Trinidad	10 000	AR	2012?	
		Plan A – Base Esperanza, Caleta Choza	5000			
56	9102	Estrecho Bransfield, Rada Covadonga y Accesos	10 000	CL	2003	
57	9103	Gerlache Strait	50 000	CL	¿	
58	9104	Gerlache Strait	50 000	CL	¿	
59	9105	Bismarck strait, Approaches to Arthur Harbour	25 000	US	¿	
		Plan A – Arthur Harbour	10 000			
60	9106	Argentine Islands and Approaches	60 000	GB	1996	
		Plan A – Argentine Islands	15 000			
61	9107	Pendleton Strait etc.	50 000	GB	2015?	
62	9108	Hanusse Bay to Wyatt Island	50 000	CL	¿	
63	9109	British Antarctic Survey Base Rothera	25 000	GB	1999	
64	9110	Adelaide Island, South Western Approaches	30 000	CL	?	
65	9111	Bahía Margarita	25 000	AR	2012?	
66	9112	Plans in Bransfield Strait		GB	2015?	
		Plan A – Yankee Harbour	12 500			
		Plan B – Freud (Pampa) Passage	50 000			
		Plan C – Portal Point	25 000			
		Plan D – Penguin Island	20 000			
		Plan E – Hydrurga Rocks	10 000			
67	9113	Plans in Elephant Island		GB	¿	

		Plan A – Cape Lookout	50 000			
		Plan B – Cape Valentine	10 000			
		Plan C – Point Wild	10 000			
68	9114	Antarctic Sound		GB	¿	
		Plan A – Fridtjof Sound	50 000			
		Plan B – Brown Bluff	10 000			
		Plan C – Gourdin Island	15 000			
69	9115	Active Sound	50 000	AR	¿	
70	9116	Plans in Paulet and Danger Islands		GB	¿	
		Plan A – Paulet Island	50 000			
		Plan B – Danger Islands	50 000			
71	9120	Isla Decepción	50 000	AR	2004	2006
		Plan A - Fuelles de Neptuno	12 500			
72	9121	Isla Livingston, de Punta Band a la Bahía Brunow	35 000	ES	1998	
		Plan A – Isla de la Media Luna	25 000			
		Plan B – Base Juan Carlos I	5 000			
73	9122	Bahía Chile, Puerto Soberanía y Ensenadas Rojes e Iquique		CL	1998	
		Plan A - Bahía Chile	20 000			
		Plan B - Puerto Soberanía y Ensenadas Rojas e Iquique	5000			
74	9123	Caletas en Bahía Fildes		CL	2007	
		Plan A – Caleta Potter	10 000			
		Plan B – Caleta Ardley	10 000			
		Plan C – Caleta Marian	10 000			
75	9124	Bahia Fildes	30 000	CL	2007	
76	9125	Baia do Almirantado	40 000	BR & PE	2010?	
		Plan A – Ensenada Martel	20 000			
		Plan B – Estação Arctowski	10 000			
		Plan C – Ensenada Mackellar	15 000			
77	9130	Crystal Hill to Devil Island	75 000	GB	¿	
		Plan A - Bald Head	10 000			
		Plan B - View Point	10 000			
		Plan C - Matts Head	10 000			
		Plan D - Crystal Hill	10 000			
		Plan E - Camp Point	10 000			
		Plan F - Devil Island	10 000			
78	9131	Crystal Sound	75 000	GB	¿	
79	9132	Grandidier Channel	75 000	GB	¿	

80	9140	Islas Orcadas del Sur	150 000	AR	2015?	
81	9141	Approaches to Signy Island	50 000	GB	2006	
		Plan A – Borge Bay and Approaches	10 000			
82	9142	Bahía Scotia	10 000	AR	2006	
83	9150	Islas Elefante y Clarence	200 000	BR	1999	UK 2008
84	9151	De Isla De Jorge a Isla Livingston	200 000	CL+BR	2012?	
85	9152	De Isla Livingston a Isla Low	200 000	CL+BR	2012?	
86	9153	Church Point to Cape Longing including James Ross Island	150 000	GB & AR	1999	2004 UK2009
87	9154	Joinville Island to Cape Ducorps and Church Point	150 000	GB & AR	1996	2002 UK2009
88	9155	Estrecho Bransfield - Rada Covadonga a Isla Trinidad	150 000	CL	2003	
89	9156	Archipiélago de Palmer, de Isla Trinidad a Isla Amberes	150 000	AR	2009(Oct)	
90	9157	Gerlache Strait	150 000	CL	?	
91	9158	Anvers Island to Renaud Island	150 000	GB	2001	2003
		Plan A – Port Lockroy	12 500			
92	9159	Pendleton Strait & Grandidier Channel	150 000	GB	2011?	
93	9160	Crystal Sound	150 000	GB	2013?	
94	9161	Matha Strait to Pourquoi Pas Island	150 000	CL	¿	
95	9162	Adelaide Island	150 000	CL	2010?	
96	9163	Marguerite Bay; Rothera	150 000	GB	2009	
97	9164	Margarita Bay	150 000	CL	2010?	
98	9170	Islas Shetland y Mar de la Flota	500 000	AR	1997	
99	9171	Brabant Island to Adelaide Island	500 000	GB	2015?	
100	9172	Matha Strait to Rothschild Island	500 000	RU	1999	

Resume:

a. 65 out of 100 INT Charts have been produced (or shall be finalized in 2009).
b. charts are planned for 2010
c. 1 chart is planned for 2011
d. charts are planned for 2012
e. 1 chart is planned for 2013
f. 0 chart is planned for 2014
g. charts are planned for “no earlier than 2015”
h. 21 charts have not yet been considered in the planning.

========== END ==========

Report by IUCN, The International Union for Conservation of Nature

IUCN extends thanks to the Government of the United States for hosting this 32nd Antarctic Treaty Consultative Meeting (ATCM). With its longstanding interest in Antarctic conservation, IUCN welcomes the opportunity to assist Parties in their deliberations at this meeting. In this submission, IUCN focuses on a few areas of importance with respect to the conservation of the Antarctic environment.

IUCN congratulates the Antarctic Treaty Parties on this fiftieth anniversary year of the adoption of the Treaty in Washington DC. The Treaty has successfully preserved Antarctica for peace and science while allowing a flexible governance process that has provided for new measures and structures to adjust to changing needs and conditions. We refer to the adoption in 1980 of the Convention on the Conservation of Antarctic Marine Living Resources and the adoption in 1991 of the Protocol on Environmental Protection to the Antarctic Treaty and five annexes. Nevertheless, this is not a time for complacency. More needs to be done. A sixth annex to the Protocol on Environmental Protection was adopted as Measure 1(2005) but has not as yet entered into force. We urge Parties to take the necessary steps to approve this Measure, thus bringing into force Annex VI. New recommendations should be adopted at this meeting to address other important threats to the health of the continent and its surrounding ocean and we will outline some ideas below.

(1) Fourth World Conservation Congress

First, however, IUCN would like to report that the Fourth World Conservation Congress, which was held in October 2008 in Barcelona adopted Recommendation 4 118[2] which *inter alia* expressed deep concern about the emerging impacts on Antarctic ecosystems from global climate change; acknowledged that Annex V of the Protocol provides for a "systematic environmental geographic framework" of protected areas to be established in both terrestrial and marine environments; noted with concern rapidly increased interest in the Antarctic krill fishery, the continued IUU fishing for certain fish species (especially toothfish) and continuing deaths of seabirds as a result of long-line fishing operations; noted also with concern the potential for harmful cumulative impacts on wilderness and scientific values should the number of tourists and size and tourism vessels continue to grow and noted the increasing number of vessels using the Southern Ocean and the absence of an integrated approach to the establishment of appropriate ice-classification standards for those vessels and related issues. The Congress urged actions to address these issues, some of which we will outline below.

(2) Antarctic and Southern Ocean Marine Protected Areas

IUCN welcomes the joint CEP SC-CAMLR workshop that was held immediately before this meeting. We are encouraged that it has been recognized that the two bodies are to work together to promote common goals, including the development and establishment of protected areas. Work has been ongoing for several years to develop a scientific basis for the identification of representative areas for protection through the process of bioregionalization. We note in this regard the obligation that Parties to the Protocol on Environmental Protection to the Antarctic Treaty have accepted through Annex V Article 3 to "seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas…representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems". As some years have passed since this process was begun, it is time to identify such areas, including representative examples. Marine areas are particularly scarce within the Antarctic Treaty framework and so we hope that Parties at this meeting will move forward quickly to remedy this omission. Such action would

[2] For full text of the resolution see:
http://intranet.iucn.org/webfiles/doc/IUCNPolicy/Resolutions/2008_WCC_4/English/REC/rec_4_118_antarctica_and_the_southern_ocean_.pdf

also support the decision that states took in Johannesburg in 2002 to establish representative networks of protected areas by 2012. Recommendation 4 118 which was adopted by our members at the World Conservation Congress, including by many states that are Party to the Antarctic Treaty, called on Parties to consider declaring the Ross Sea as an Antarctic Specially Protected Area.

The Workshop on Bioregionalization of the Southern Ocean held in Brussels, Belgium from 13 to 17 August 2007, hosted by the Belgium government, was a very important step in this process and we are pleased to see that CCAMLR-XXVI and the Scientific Committee have endorsed the results of the workshop. As observed by the Scientific Committee, the results from the Workshop are a primary foundation for understanding the biological and physical heterogeneity in the Southern Ocean, which can be used by CCAMLR and the CEP to inform spatial management.

At ATCM 31 Resolution 3(2008) was adopted which recommended that the "Environmental Domains Analysis for the Antarctic Continent" that was annexed to it be used consistently and with other tools as a dynamic model to aid in the identification of areas that could serve as ASPAs within the systematic environmental-geographical framework, as referred to in Annex V, Article 3(2) of the Protocol. This tool is very helpful. It is now time to move forward with a similar tool with respect of the Southern Ocean.

At a global level, the IUCN World Commission on Protected Areas (WCPA) continues to work on promoting the establishment and effective management of a worldwide, representative network of marine protected areas. The WCPA-Marine program provides strategic advice to policy makers, and works to strengthen capacity and investment in protected areas. Regional networks within WCPA-Marine include a network for Antarctica, which aims to build communications between members worldwide, and to share knowledge on tools and information for protected area management. Further information on the work of WCPA-Marine can be found at:
http://www.iucn.org/themes/wcpa/biome/marine/marineprogramme.html

(3) Climate Change

The increase of greenhouse gases in the atmosphere is having a profound effect on the world's climate. Changes are measurable and observable. In the Arctic, the retreat of summer sea ice, as photographed by satellites, is swift and astounding in scope. In the Antarctic Treaty Area similar observable and observed changes are clear and visible. Ice shelves have collapsed in recent years, and there is no longer doubt that this is the direct result of rising temperatures caused by changes to the Earth's atmosphere. IUCN welcomed the adoption of ATCM XXIX Resolution 3 (2007) on Long-term Scientific Monitoring and Sustained Environmental Observation in Antarctica which should help to increase the capacity to detect, understand and forecast the impacts of climate change.

IUCN urges Parties, on the basis of precaution, to ensure that the management of human activities is done in such a way as to minimize as far as is possible the carbon footprints of national programs in Antarctica as well as those of activities for which they have an obligation to give advance notification. Also of significance this year will be the Conference of the Parties to the United Nations Framework Convention on Climate Change. It will be critical that progress is made this year to allow for the adoption at that Conference of a new instrument that will require meaningful reductions in emissions of greenhouse gases. IUCN urges Antarctic Treaty parties to send a message to the UNFCCC COP that urgent and significant action is necessary to combat climate change as the effects are obvious in polar regions, where ice cover is changing. It is expected that such changes will soon be obvious in tropical and temperate regions as well. Already, there has been a measurable shrinkage in the size of many glaciers in these regions. Urgent action is necessary now – not only to protect the Antarctic environment – but also in self-interest to protect the health and welfare of humankind.

In this regard, IUCN notes that various geo-engineering schemes have been proposed to mitigate the effects of greenhouse gas emissions. While IUCN recognizes the need for scientific investigation, we are concerned that such schemes may go ahead without first conducting a full environmental impact assessment. As one area of interest with respect of iron fertilization has been the Southern Ocean,

IUCN notes that any such activities organized in, or proceeding from, a Party to the Protocol on Environmental Protection is subject to the provisions of the Protocol, and in particular article 8 with respect of advance Environmental Impact Assessment.

(4) Tourism

The number of visits by tourists has continued to grow substantially in recent years, with the number of tourists landing almost tripling since the beginning of the decade. Whether because of this growth in numbers or because of physical changes in ice and water conditions or for some other reason, the number of accidents involving tourism vessels has increased sharply, with the loss of the *Explorer* and the grounding of several vessels in recent years. Clearly, something needs to be done, both to improve safety and to protect the environment. Such groundings and other accidents require services from national Antarctic programs and thus divert resources that were intended to support science. They threaten the Antarctic environment. Whereas the impacts of small numbers of tourists may have been minor or transitory, the overall increase and growing diversity of tourism may have impacts that are more than minor or transitory at certain sites or through certain activities. It is time to further develop work already undertaken to consider cumulative impacts of tourism activities at heavily visited sites and to develop additional measures so that such impacts can be avoided or minimised and monitored. Two areas for priority consideration may include the construction or use of buildings or other permanent infrastructure for tourism in Antarctica and the impacts of large cruise ships and other large vessels.

In the interim, Parties should ensure the notification of "all expeditions to and within Antarctica, on the part of its ships or nationals, and all expeditions to Antarctica organized in or proceeding from its territory" as required under Article VII(5)(a) of the Antarctic Treaty. Following on this obligation is an obligation to ensure that all vessels so subject to notification are fully able to conform to Protocol obligations. If vessels do not have the capacity to comply with these obligations, the notifying State and the Flag State should ensure that such vessels do not travel to Antarctica. In this regard, rapid approval of Measure 1(2005) which contains the text of Annex VI on Liability Arising from Environmental Emergencies to the Protocol on Environmental Protection would provide a useful tool to Parties to ensure better regulation of tourism. Parties should consider whether and how they could implement the Annex domestically in advance of its entry into force as a part of the Protocol.

As noted previously, any review of the impact of such vessels would necessarily reflect the obligations of Parties under Annex IV of the Protocol on Environmental Protection to the Antarctic Treaty. Parties should undertake a review of the requirements incorporated in Annex IV in order to assure themselves that they are sufficient to protect the Antarctica, including its dependent and associated ecosystems. The review should *inter alia* examine whether the impacts of discharge of sewage, garbage and other substances is harmful even beyond 12 nautical miles from land or ice shelves and whether vessels travelling to Antarctica should discharge into the sea any food wastes whatsoever within the Antarctic Treaty Area.. Also in view of safety and emergency response considerations, IUCN again stresses the need to consider further steps to restrict the activities of large vessels in Antarctica in order also to protect human life, to safeguard the unique environment of Antarctica and to promote the values of the Antarctic Treaty System.

(5) Shipping

The Report of the Continued Intersessional Contact Group (IGC) on Issues Concerning Passenger Ships Operating in Antarctic Waters notes several areas of concern, described as possible deficiencies in control measures. At the World Conservation Congress last October, our members adopted Recommendation 4 118 calling on Parties to the Antarctic Treaty, the Protocol and CCAMLR and to the IMO to collaborate to:

> "(a) take the necessary steps to set appropriate ice-classification standards for vessels operating in
> the Antarctic;

(b) consider a ban on the carriage and use of heavy fuel oil;
(c) strengthen regulation of sewage and grey-water discharge;
(d) take steps to prevent entry of alien species through various pathways, including ballast water
and biofouling; and
(e) enforce the prohibition on the dumping of garbage into the Southern Ocean."

In addition, IUCN reiterates that it is time to review again the Code of Arctic Shipping and to draw from it elements that also apply to the Antarctic to further develop a Code of Antarctic Shipping that would be approved through the International Maritime Organization. Though the existing Code for the Arctic is voluntary, Parties could adopt through a Measure a Code for the Antarctic and then work through the IMO to have it adopted with respect of vessels flagged by all states that are members of the IMO. IUCN welcomes a call to work through the IMO to extend the Antarctic Special Area northward from the 60°S parallel to the boundary of the Antarctic convergence.

IUCN notes that the possible deficiencies in control measures as identified through work undertaken by the IGC Concerning Passenger Ships also apply with respect of non-passenger vessels travelling through the region. For this reason, IUCN urges all Parties to the Antarctic Treaty to work through their maritime administrations to ensure adequate and proper crew training, equipment and vessel construction and maintenance to allow ships to operate safely around Antarctica, noting the current limited availability of up-to-date nautical charts and search and rescue capability.

(6) Bioprospecting

Though there is no commonly agreed definition in international use, the Convention on Biological Diversity defines genetic resources as "genetic material of actual or potential value" and genetic material as "any material of plant, animal, microbial or other origin containing functional units of heredity". The Secretary-General of the United Nations in a report to the General Assembly has written that:

> "It is difficult to differentiate scientific research from commercial activities involving genetic resources, commonly referred to as bioprospecting. In most cases, genetic resources are collected and analysed as part of scientific research projects, in the context of partnerships between scientific institutions and industry. It is only at a later stage that the knowledge, information and useful materials extracted from such resources enter a commercial phase. The difference between scientific research and bioprospecting therefore seems to lie in the use of knowledge and results of such activities, rather than in the practical nature of the activities themselves."[3]

In a later report, he wrote:

> "…While there is no universally agreed definition of bioprospecting, the term is generally understood, among researchers, as the search for biological compounds of actual or potential value to various applications, in particular commercial applications. This involves a series of value-adding processes, usually spanning several years, from biological inventories requiring accurate taxonomic identification of specimens, to the isolation and characterization of valuable active compounds. As a mere prospecting activity, bioprospecting is only the first step towards possible future exploitation and stops once the desired compound or specific property has been isolated and characterized…."[4]

Thus, a definition of bioprospecting could be the search for and collection of genetic materials and their study with the goal of commercialization of those genetic materials. As suggested by the Secretary-General, the difference between bioprospecting and scientific research may hinge on intent,

[3] United Nations General Assembly document A/60/63/Add.1, para 202, 15 July 2005
[4] United Nations General Assembly document A/62/66, para 150, 12 March 2007

that is whether the study is promote human knowledge of itself or whether the intent is to seek to derive commercial profit from that knowledge. Clearly, bioprospecting has at its root scientific observation.

Antarctic Treaty Parties adopted Resolution 7(2005) entitled "Biological Prospecting in Antarctica" recognizing the link between scientific research, bioprospecting and the obligation in Article III of the Treaty that scientific observations and results from Antarctica are to be exchanged and made freely available.

IUCN reiterates that in the Antarctic context, bioprospecting, as any other activity, is subject to the obligations that Parties have accepted under the Treaty and related instruments, including the Protocol on Environmental Protection. Thus, for all expeditions organized in or by their ships or nationals or proceeding from their territory advance notification is required, as provided for under Article VII of the Treaty. Flowing from this, an environmental impact assessment procedure must be undertaken, in accordance with Article 8 of the Protocol and Annex I. In accordance with Article III of the Treaty scientific observations and results from Antarctica should be exchanged and made freely available to the greatest extent feasible and practicable. IUCN remains of the view that a desire for commercialization does not overcome this obligation to make the observations and results freely available as it does not affect feasibility or practicability. Furthermore, as bioprospecting involves the collection of living samples, this must be done consistent with obligations under Annex II of the Protocol to Conserve Antarctic Fauna and Flora. In keeping with the spirit of the Antarctic Treaty and related instruments, Parties should consider a Measure to ensure the protection of all native biota, including micro organisms, such that any collection would not be in such quantities to affect significantly their local distribution or abundance. In areas designated as Antarctic Specially Protected Areas (ASPAs) the management plan is to include a clear description of the conditions under which permits may be granted *inter alia* regarding "the collection or removal of anything not brought into the area by the permit holder". Furthermore, for both ASPAs and ASMAs information is to be exchanged among Parties and the CEP on the number and nature of permits issued, including a summary description of activities conducted by persons subject to its jurisdiction in such areas. Finally, Parties may wish to consider ways to ensure fair rules for a sharing of benefits resulting from the commercialization of products derived from Antarctic biota.

Should bioprospecting include taking of marine living resources in Antarctica, then additional factors arise. If it involved harvesting of marine living resources to include fin fish, molluscs, crustaceans and all other species of living organisms, including birds found south of the Antarctic convergence, then the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) would apply to any party to CCAMLR which would have to notify the CCAMLR Commission and seek a conservation measure before allowing any harvesting to go forward. If the action involved seals, the Convention for the Conservation of Antarctic Seals would apply.

Bioprospecting has the potential to raise certain concerns with respect of management and governance in relation to Antarctica. At ATCM XXIX Information Paper 13 entitled "In search of a legal regime for bioprospecting in Antarctica" presented by France raised the issue of a competent authority to authorize a bioprospecting activity. With reference to Article IV of the Antarctic Treaty it was noted that there could be a divergence of views with respect of sovereign rights and access to resources and genetic materials. It was suggested that states had faced a parallel issue with respect of the issuance of operating permits for mineral resources activities. The Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), adopted in Wellington in 1988 but not in force, provided for a permitting system through a Commission and a Regulatory Committee in a way that took into account various positions and interests with respect of territorial claims. It was suggested that the regime foreseen under CRAMRA could provide a model for bioprospecting.

In the immediate term, it would appear to be prudent to accept that bioprospecting includes scientific research as a preliminary step. Parties should require that all expeditions organized in or by their

ships or nationals or proceeding from their territory provide advance notification, conduct an environmental impact assessment procedure and ensure that their scientific observations and results are exchanged and made freely available. In our view, patents should not in any case be available for naturally occurring genomes as they themselves are not new, novel or inventive as foreseen under various rules and conventions overseen through the World Intellectual Property Organization (WIPO)[5].

IUCN Background:
Created in 1948, IUCN the International Union for the Conservation of Nature is the world's oldest and largest global environmental network - a democratic membership union with more than 1,000 government and NGO member organizations, and almost 11,000 volunteer scientists in more than 160 countries. Its 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 Union is a multicultural, multilingual organization with 1,000 staff located in 62 countries. Its headquarters are in Gland, Switzerland.

[5] See http://www.wipo.int/patentscope/en/patents_faq.html#inventions

PART IV

Additional Documents from XXXII ATCM

1. Additional Documents

Abstract of SCAR Lecture

Marine Life and Change in the Southern Ocean

Prof. Dr. Karin Lochte, Director, AWI, Bremerhaven, gave the SCAR lecture at 1200 on 14 April (for copies of slides visit http://www.scar.org/communications/).

Antarctica is inextricably linked to global atmospheric, oceanographic and climatic processes and therefore exposed to the impact of human activities in the rest of the world. Antarctic organisms have adapted their seasonal cycles to the dynamic interface between ice and water. This interface ranges from the micrometre-sized brine channels within sea ice to the planetary-scale advance and retreat of sea ice. Antarctic marine ecosystems are particularly sensitive to climate change because small temperature differences can have large effects on the extent and thickness of sea ice. Main threats to marine life are warming; acidification; and invasive species.

Surface and bottom waters are warming especially west of the Peninsula and off West Antarctica. Warming is affecting Antarctic krill, a key component of Southern Ocean food webs, and the major prey item in the diet of many of the higher trophic level predators, such as penguins, seals, whales, and sea birds. The ecosystem is highly variable in space and time. Krill consumers, like crabeater seals and Adélie penguins, dominate at higher latitudes, and Antarctic fur seals and chinstrap and gentoo penguins at lower latitudes. The Adélies are moving south as the sea ice retreats and as increased snow buries their nesting sites, and being replaced by gentoos and chinstraps, which now reach south further than at any time in the past 700 years. Krill are in decline and are being replaced by less nutritious gelatinous organisms – salps. The size of the Krill stocks depends on the extent of the previous winter's sea ice, because krill larvae feed and shelter beneath the sea-ice, and when it disappears so do they. The breeding success of krill predators (penguins, seals, etc) depends on krill availability. The most dramatic (but also most speculative) consequence of warming could be an influx of crabs or other predators that feed by crushing their prey.

Warming also caused long-lived ice shelves to collapse, exposing the underlying seabed to light and changing the habitat there. The Larsen A ice shelf disintegrated in January 1995, and the Larsen B in February 2002. After an ice shelf collapses it takes a long time (decades) to settle the sea bottom and to develop a stable ecosystem. Recovery is proceeding apace at Larsen A, and is far ahead of that at Larsen B.

Ocean acidification, caused by increased levels of atmospheric carbon dioxide (CO_2) dissolving in the ocean, is likely to have serious consequences for marine ecosystems and biodiversity in the Southern Ocean over this century. Increasing atmospheric CO_2 also increases ocean acidity. CO_2 in air has increased from 280 to 380 ppm in the last 200 years, and the ocean pH – the acid value – decreased by 0.1 unit. Within the next 90 years the pH is projected to decrease by up to a further 0.7. The Southern Ocean is particularly vulnerable to the phenomenon, due to the higher solubility of CO_2 in cold water. As a result, the current trajectory of carbon emissions will cause a change in ocean acidity during this century that is greater in extent than anything likely to have occurred for millions of years. This is significant for those organisms that build skeletons from calcium carbonate, which exists in two major forms: calcite and aragonite. Aragonite is produced by molluscs such as pteropods (planktonic marine snails) and reef-building corals. Calcite is produced by planktonic organisms such as coccolithophorids (microscopic marine algae) and foraminifera (single-celled marine animals). Both forms of calcium carbonate dissolve more easily under conditions of higher CO_2, lower temperatures and (at depth) higher pressures. Aragonite is less stable than calcite, so organisms with aragonite shells are likely to be impacted first. In the Southern Ocean aragonite saturation will become critically low from 2050 onwards, so pteropods may become extinct in Antarctic waters due to ocean acidification between 2050 to 2100. Pteropods are part of the plankton, occur in the upper 300 m, and are more abundant than krill in some areas, especially south of the Polar Front. They are an important member of the food web, being eaten by carnivorous zooplankton, fish (myctophids & nototheniids) and other zooplankton, e.g. gymnosome pteropods. Research into the impacts of high concentrations of CO_2 in the oceans is in its infancy and needs to be developed rapidly through a major, internationally coordinated effort. The impacts of ocean acidification are additional to, and may exacerbate, the effects of climate change. For this reason, the necessary funding should be additional and not diverted from research into climate change (see The Royal Society report of 2005 - Ocean acidification due to increasing atmospheric carbon dioxide).

The routes for colonization by invasive species have increased substantially recently thanks to human traffic to Antarctica, first by ship, and now by aircraft. Humans have introduced a wide range of invasive species, especially to the sub-Antarctic islands. These species have in some cases come to dominate, terrestrial, freshwater, and marine habitats, where they cause considerable damage, altering ecosystems and driving some local species to extinction. Spider crabs have recently been found, west of the Peninsula. They could create havoc in an ecosystem unused to coexisting with predators capable of crushing.

SCAR is addressing these and related problems through its scientific research programme on Evolution and Biodiversity in the Antarctic: The Response of Life to Change (EBA). EBA's activities embrace the Census of Antarctic Marine Life (CAML), an IPY project that discovered 1000 new species. Nevertheless, knowledge of Antarctic marine biodiversity remains patchy, especially at depths below the continental shelf, and for tiny organisms (bacteria, archaea, eukarya, viruses, nanoplankton) in the sea. Most of the existing biodiversity information is widely scattered, not easily accessible and sometimes vanishing, although the use of this information for scientific, monitoring, management, and conservation purposes could reach its greatest potential once the required data become highly available in digitised format through integrated information networks like SCAR's MarBIN (Marine Biodiversity Information Network), which aims supports a distributed system of interoperable databases in a coordinated network. Full use of MarBIN will provide a valuable legacy in the form of a powerful information tool that can be used in support of policy. Before starting new field censuses, it is imperative to collaborate more closely internationally to make widely available the existing information on Antarctic marine biodiversity, a task SCAR-MarBIN is intended to accomplish. This will allow the exploitation of data emerging from multi-scale investigation efforts, and will lead to a comprehensive assessment and a better understanding of the actual diversity and status of Antarctic marine life. MarBIN is currently in need of national support.

2. List of Documents

WORKING PAPERS								
Number	Agenda Items	Title	Submitted By	E	F	R	S	Attachments
WP001	ATCM 17	The Antarctic biological prospecting database	Belgium Brazil Bulgaria Finland France Germany Netherlands Sweden	X	X	X	X	
WP002	CEP 7c	Site Guidelines for Stonington Island, Marguerite Bay, Antarctic Peninsula	United Kingdom United States	X	X	X	X	Site Guidelines Stonington Island
WP003	CEP 7b	Antarctic Protected Area System: Revised list of Historic Sites and Monuments - Measure 3 (2003). Guidelines for its application	Chile	X	X	X	X	
WP004	CEP 7d	Second Progress Report on the Discussion of the International Working Group about Possibilities for Environmental Management of Fildes Peninsula and Ardley Island	Chile Germany	X	X	X	X	
WP005	CEP 8a	A work program for CEP action on non-native species	Australia France New Zealand	X	X	X	X	
WP006	ATCM 10	Maximizing the Antarctic IPY legacy	Norway United Kingdom	X	X	X	X	
WP007	CEP 4	Amendments to the Rules of Procedure for the Committee for Environmental Protection	Australia	X	X	X	X	Revised Rules of Procedure for the CEP (2009)
WP008	CEP 7a	Subsidiary Group on Management Plans – Report on Term of Reference #4: Improving Management Plans and the Process for their Intersessional Review	Australia	X	X	X	X	
WP009	CEP 7c	Report on informal discussions about the non-specific information contained in the Site Guidelines for Visitors to Antarctica	France	X	X	X	X	
WP010	ATCM 11	Strategic vision of Antarctic tourism for the next decade	United Kingdom	X	X	X	X	
WP011	CEP 7c	Site Guidelines for Horseshoe Island and Detaille Island, Antarctic Peninsula	United Kingdom	X	X	X	X	Site Guidelines Detaille Island Site Guidelines Horseshoe Island
WP012	CEP 6b	Environmental aspects and impacts of tourism and non-governmental activities in Antarctica: Draft project scope	Australia France New Zealand	X	X	X	X	
WP013	CEP 7c	Visitor Site Guide for Cape Royds, Ross Island	New Zealand United States	X	X	X	X	Visitor Site Guideline Cape Royds
WP014	CEP 11	Report of the CEP Observer to the twenty-seventh meeting of the Scientific Committee to CCAMLR;	New Zealand	X		X	X	

		27 – 31 October 2008						
WP015	ATCM 5	Initiative to Extend the Boundary of the International Maritime Organization's Antarctic Special Area Northward to the Antarctic Convergence	United States	X	X	X	X	
WP016	ATCM 11	Lifeboats on Antarctic Tourist Vessels	United States	X	X	X	X	
WP017	ATCM 11	Proposal to make binding certain limitations on landing of persons from passenger vessels	United States	X	X	X	X	
WP018	ATCM 17	Regulation of biological prospecting under the Antarctic Treaty system	Australia New Zealand	X	X	X	X	
WP019	CEP 7c	Site Guidelines for Wordie House, Winter Island, Argentine Islands	Ukraine United Kingdom	X	X	X	X	Site Guidelines Wordie House
WP020	CEP 7a	Revision of Management Plan for Antarctic Specially Protected Area No. 152: Western Bransfield Strait	United States	X	X	X	X	ASPA No. 152 Map 1 ASPA No. 152 Western Bransfield Strait Management Plan
WP021	CEP 7a	Revision of Management Plan for Antarctic Specially Protected Area No. 153: Eastern Dallmann Bay	United States	X	X	X	X	ASPA No. 153 Eastern Dallmann Bay ASPA No. 153. Map 1
WP022	CEP 7a	Revision of Management Plan for Antarctic Specially Protected Area No. 121: Cape Royds, Ross Island	United States	X	X	X	X	ASPA No 121 Map 2 ASPA No. 121 Cape Royds, Ross Island ASPA No. 121 Map 1
WP023	CEP 8a	Propagule transport associated with logistic operations: a South African appraisal of a regional issue	South Africa	X	X	X	X	
WP024	CEP 7a	Revision of Management Plan for Antarctic Specially Protected Area No. 113: Litchfield Island, Arthur Harbor, Anvers Island, Palmer Archipelago	United States	X	X	X	X	ASPA No. 113 Map 1 ASPA No. 113 Map 2 ASPA No. 113. Litchfield Island
WP025	CEP 7a	Revision of maps and text for the Management Plan for Antarctic Specially Managed Area No. 7: Southwest Anvers Island and Palmer Basin	United States	X	X	X	X	ASMA No. 7 Map 1 ASMA No. 7 Map 2 ASMA No. 7 Map 3 ASMA No. 7 Map 4 ASMA No. 7 Map 5 ASMA No. 7 Map 6 ASMA No. 7 Map 7 ASMA No. 7 Map 8
WP026	ATCM 17	A gap analysis of the Antarctic Treaty system regarding the management of biological prospecting	Netherlands Belgium Bulgaria Finland France Germany Spain Sweden	X	X	X	X	
WP027	CEP 7a	Review of Antarctic Specially Protected Area (ASPA) No. 104: Sabrina Island	New Zealand	X	X	X	X	ASPA No. 104 Sabrina Island
WP028	CEP 7c	Site Guidelines for Baily Head and Telefon Bay, Deception Island,	Argentina Chile	X	X	X	X	Site Guidelines Baliy Head

		South Shetland Islands	Norway Spain United Kingdom United States					Site Guidelines Telefon Bay
WP029	CEP 7d	Towards a representative system of marine spatial protection for the South Orkney Islands	United Kingdom	X	X	X	X	
WP030	ATCM 11	Antarctic Treaty Meeting of Experts on the Management of Ship-borne Tourism in the Antarctic Treaty Area	New Zealand	X	X	X	X	
WP031	CEP 7d	Updated analysis of representation of Annex V categories and Environmental Domains in the system of Antarctic Specially Protected and Managed Areas	New Zealand	X		X	X	
WP032	CEP 8a	Procedures for vehicle cleaning to prevent transfer of non-native species into and around Antarctica	United Kingdom	X	X	X	X	
WP033	CEP 8a	Review of provisions relating to non-native species introductions in ASPA and ASMA management plans	United Kingdom	X	X	X	X	
WP034	CEP 7d	Spatial protection and management of Antarctic marine biodiversity	United Kingdom	X	X	X	X	
WP035 rev.1	CEP 7b	Proposal to add the British hut (Base W) on Detaille Island, Lallemand Fjord, Loubet Coast to the List of Historic Sites and Monuments	United Kingdom	X	X	X	X	
WP036 rev.1	CEP 7b	Proposal to add the British hut at Damoy Point, Dorian Bay, Wiencke Island to the List of Historic Sites and Monuments	United Kingdom	X	X	X	X	
WP037	ATCM 12	Report of the Intersessional Contact Group on the revision of List A “Permanent Antarctic stations and associated installations” appended to Resolution 5 (1995)	Argentina	X	X	X	X	
WP038	CEP 9a	Climate change and the Antarctic environment: Management implications	United Kingdom	X	X	X	X	
WP039	ATCM 5	Annex II: Finalising the review	Australia	X	X	X	X	Appendix B. Annotated summary of proposed changes to Annex II
WP040	CEP 7a	Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 136 Clark Peninsula and 162 Mawson’s Huts, and Antarctic Specially Managed Area (ASMA) 3 Cape Denison	Australia	X	X	X	X	ASMA No. 3 Management Plan ASMA No. 3 Map A ASMA No. 3 Map B ASMA No. 3 Map C ASPA No. 136 Management Plan ASPA No. 136 Map A ASPA No. 136 Map B ASPA No. 136 Map C ASPA No. 136 Map D ASPA No. 162 Management Plan

								ASPA No. 162 Map A ASPA No. 162 Map B ASPA No. 162 Map C Measure 7 Annex - ASPA 136: Clark Peninsula
WP041	CEP 9b	Development of environmental data services to inform the Environmental Impact Assessment (EIA) process	United Kingdom	X	X	X	X	
WP042	CEP 7a	Review of the management plan for Antarctic Specially Protected Area (ASPA) No. 142 - Svarthamaren	Norway	X	X	X	X	ASPA No. 142 Management Plan
WP043	ATCM 11	Report of the continued Intersessional Contact Group on Issues Concerning Passenger Ships Operating in Antarctic Waters	Norway	X	X	X	X	
WP044	ATCM 11	Problems of national control of tourist and non-governmental activity in the Antarctic	Russian Federation	X	X	X	X	
WP045	ATCM 5	About the role and place of COMNAP in the Antarctic Treaty System	Russian Federation	X	X	X	X	
WP046	ATCM 18	On the strategic role of the Antarctic Treaty of 1959 in the process of regulation of international relations in the South Polar region of the Earth	Russian Federation	X	X	X	X	
WP047	ATCM 9	Towards Improved Search and Rescue Coordination and Response in the Antarctic	COMNAP	X	X	X	X	Annex B: Report – Antarctic SAR Workshop (12-14 August 2008)
WP048	ATCM 10 CEP 5	IPY Report: Accomplishments and challenges	IPY-IPO SCAR	X	X	X	X	
WP049 rev.2	ATCM 17	Bioprospection: Baselines and parameters	Chile	X	X	X	X	
WP050 rev.1	ATCM 5 CEP 7b	Measure 3 (2003) Antarctic Protected Areas System. Revised list of Historic Sites and Monuments (Proposed amendment to the Annex)	Chile	X	X	X	X	
WP051 rev.1	CEP 7a	Subsidiary Group on Management Plans – Report on Terms of Reference #1 to #3: Review of Draft Management Plans	Australia	X	X	X	X	ASPA 125 Fildes Peninsula ASPA 125 Map 1 ASPA 125 Map 2 ASPA 125 Map 3 ASPA 125 Map 4 ASPA 125 Map 5 ASPA 125 Map 6 ASPA 125 Map 7 ASPA 125 Map 8 ASPA 125 map 9 ASPA 150 Ardley Island ASPA Narebsky Point
WP052	CEP 11	Report of the CEP Observer to the XXXth SCAR Delegates Meeting held in Moscow, 14-16 July 2008	Belgium	X	X	X	X	

WP053	CEP 7c	Site Guidelines for the Northeast beach of Ardley Peninsula (Ardley Island), King George Island (25 de Mayo Island), South Shetland Islands	Argentina Chile	X	X	X	X	Ardley Peninsula - location map Map of Ardley Peninsula Site Guidelines for Ardley Peninsula View from Braillard Point View from Faro Hill View from Faro Point
WP054	ATCM 11	The effect of marathons held on the Antarctic continent	Chile	X	X	X	X	
WP055	CEP 11	Report of the Joint CEP/SC-CAMLR Workshop	France New Zealand Russian Federation United States	X	X		X	

Information Papers								
Number	Agenda Items	Title	Submitted By	E	F	R	S	Attachments
IP001	ATCM 11 CEP 7c	Monitoring and assessment using Hierarchical Bayesian Modeling: An approach taken by the Antarctic site inventory	United States	X				
IP002	ATCM 14 CEP 6b	Impacts of local human activities on the Antarctic environment: A review	ASOC	X				Complete article
IP003	ATCM 4	Report by the CCAMLR Observer to the Thirty-Second Antarctic Treaty Consultative Meeting	CCAMLR	X				
IP004	CEP 8a	SCAR's environmental code of conduct for terrestrial scientific field research in Antarctica	SCAR	X				
IP005	ATCM 13 CEP 9a	SCAR's Antarctic Climate Change and the Environment (ACCE) review report	SCAR	X				
IP006	ATCM 4	Report submitted to Antarctic Treaty Consultative Meeting XXXII by the Depositary Government for the Convention for the Conservation of Antarctic Seals in accordance with Recommendation XIII-2, Paragraph 2(D)	United Kingdom	X				
IP007	ATCM 13 CEP 11	SCAR's role in the Antarctic Treaty system	SCAR	X				
IP008	CEP 7a	Protected Area Management Plan: Five year review of Beaufort Island - ASPA 105	New Zealand	X				
IP009 rev.1	ATCM 4	SCAR's Annual Report	SCAR	X				
IP010 rev.1	CEP 8a	The IPY Aliens in Antarctica Project	SCAR	X				
IP011	CEP 7d	Pilot study on identifying important marine areas for conservation around the South Orkney Islands	United Kingdom	X				
IP012	CEP 8a	ASPA and ASMA management plans: review of provisions relating to non-native species introductions	United Kingdom	X				
IP013	CEP 7b	Antarctic Historic Resources: Ross Sea Heritage Restoration Project - Historic artefacts from ASPAs 155, 157, 158 and 159	New Zealand	X				
IP014	ATCM 11 CEP 7c	Antarctic Site Inventory: 1994-2009	United States	X				
IP015	ATCM 11	Cumulative impacts from	United	X				Effects of Human Trampling on

	CEP 8d	walking in the Dry Valleys	States					Populations of Soil Fauna in the McMurdo Dry Valleys, Antarctica
IP016	ATCM 4	Report by the International Hydrographic Organization (IHO) on “Cooperation in Hydrographic Surveying and Charting of Antarctic Waters”	IHO	X	X		X	
IP017 rev.1	ATCM 11	Proposal for submission to the International Maritime Organization	Norway	X				
IP018	ATCM 4	Report of the Depositary Government for the Agreement on the Conservation of Albatrosses and Petrels (ACAP)	Australia	X				
IP019	ATCM 4	Report of the Depositary Government for the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)	Australia	X				
IP020	ATCM 10 CEP 5	Document withdrawn	SCAR	X				
IP021	CEP 6b	Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Proposed New Indian Research Base at Larsemann Hills, East Antarctica	India	X				
IP022	ATCM 10	Indian IPY activities	India	X				
IP023 rev.1	ATCM 11 CEP 6b	Tourism and Land-based Facilities in Antarctica	ASOC	X				
IP024	ATCM 13	Science supported by Antarctica New Zealand 2008/2009	New Zealand	X				
IP025	ATCM 13	Scientific and science-related collaborations with other Parties during 2008-2009	Korea (ROK)	X				
IP026 rev.1	ATCM 14	Improvement of environmental management at King Sejong Station	Korea (ROK)	X				
IP027	ATCM 15	A Korean public awareness program: ‘Pole-to-Pole Korea’ (2008-2009)	Korea (ROK)	X				
IP028	ATCM 13	Southern dimension for polar research	Bulgaria	X				
IP029	CEP 6a	Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica	India	X				
IP030	CEP 8b	Standardised methodology for counting Southern giant petrels	ACAP	X				Proposed methodology Southern giant petrel
IP031	ATCM 4	Progress with the	ACAP	X				

	CEP 11	Implementation of the Agreement on the Conservation of Albatrosses and Petrels (ACAP)						
IP032	ATCM 4	Report of the Depositary Government of the Antarctic Treaty and its Protocol in accordance with Recommendation XIII-2	United States	X				Status of Measures Status of Protocol Status of Treaty
IP033 rev.1	ATCM 11 ATCM 4	Report of the International Association of Antarctica Tour Operators 2008-2009	IAATO	X				
IP034	ATCM 9	Managing Antarctic vessels - Avoiding future disasters	ASOC	X				
IP035	ATCM 13 CEP 9a	Policy implications arising from SCAR's report: Antarctic climate change and the environment	ASOC	X				
IP036	CEP 8a	A framework for analysing and managing non-native species risks in Antarctica	New Zealand	X				
IP037	CEP 9b	Joint VISTA-Oceanites Antarctic Project	New Zealand	X				
IP038	ATCM 9	The report on accident of snow vehicle's falling down into the sea	China	X				
IP039	ATCM 14	Brief report on the construction of Kunlun Station on Dome A in the Antarctic	China	X				
IP040	CEP 5	Brief Introduction on the Third Chinese National Arctic Marine Survey - IPY China Programme	China	X				
IP041	ATCM 13 CEP 7d	Marine Protected Areas in the Antarctic	ASOC	X				
IP042	ATCM 9 CEP 9b	An update on the Antarctic Polar View programme. Information from satellite observations for safer and efficient sea ice navigation	United Kingdom	X				
IP043	ATCM 13	Results of Russian activities in the deep ice borehole at Vostok station in implementing the project of penetration to the water layer of the subglacial lake in the season of 2008/2009	Russian Federation	X		X		
IP044	ATCM 10	Preliminary results of the Russian studies in the Antarctic under the IPY 2007/2008 Program	Russian Federation	X		X		
IP045	ATCM 13	Russian research in the Antarctic in 2008	Russian Federation	X		X		
IP046	ATCM 17	Microbiological monitoring of the expedition infrastructure facilities in the Antarctic	Russian Federation	X		X		

IP047	ATCM 9	International cooperation in the Antarctic as an important argument for provision of safety of operations and investigations in the region	Russian Federation	X		X		
IP048 rev.1	ATCM 13 CEP 7d	A Ross Sea MPA: Preservation for science	ASOC	X				
IP049	ATCM 13	India's Antarctic science programme 2008-09	India	X				
IP050	CEP 7d	Research Project "Current Environmental Situation and Management Proposals for the Fildes Region (Antarctic)"	Germany	X				
IP051	CEP 8c	Strategic assessment of the risk posed to marine mammals by the use of airguns in the Antarctic Treaty area	Germany	X				
IP052	ATCM 5 CEP 11	Protecting the Antarctic Marine Ecosystem: A Role for the ATCM	ASOC	X				
IP053	ATCM 11 CEP 6b	Key Elements of a Strategic Vision for Antarctic Tourism	ASOC	X				
IP054	CEP 7d	Report of the Larsemann Hills Antarctic Specially Managed Area (ASMA) Management Group	Australia China India Romania Russian Federation	X				
IP055	CEP 8a	Improvements to the Alien Species Database	Australia SCAR	X				
IP056	ATCM 10 CEP 5	Australian-led research during the International Polar Year	Australia	X				
IP057	ATCM 13	Australia's Antarctic scientific research program 2008/09	Australia	X				
IP058	CEP 4	Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Japan	X				Appendix 1 Appendix 2
IP059	CEP 4	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2008 - 2009	Uruguay				X	
IP060	ATCM 9	On spot technical assistance: Availability of hydrographic experts for vessels of opportunity collecting hydrographic data, by the Uruguayan Antarctic Program in the Antarctic Peninsula area during next austral summers	Uruguay	X				
IP061	CEP 7a	The management of Terra Nova Bay (Ross Sea) area: an ASPA or an ASMA?	Italy	X				

IP062	CEP 7d	Possibilities for broad-scale management of the Vernadsky station area	Ukraine	X		X		
IP063	ATCM 13	Ukraine in Antarctica: Second decade of research	Ukraine	X		X		
IP064	ATCM 13	Ukrainian Antarctic research for 2008-2009 summer season	Ukraine	X				
IP065	ATCM 17	Biological prospecting in the Antarctic: An update on the review by SCAR	SCAR	X				
IP066	CEP 7a	Revision of Maps for Antarctic Specially Managed Area No. 2: McMurdo Dry Valleys, Victoria Land	United States	X				ASMA 2 Maps - Fig. 1 ASMA 2 Maps - Fig. 2
IP067	CEP 4	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2008-2009	Italy	X				
IP068	CEP 9b	Antarctica – 50 Years of Scientific Monitoring	United Kingdom	X				
IP069	ATCM 13 CEP 9b	Persistent organic pollutants in the Antarctic	SCAR	X				
IP070	ATCM 17	Concepts, Terms and Definitions, including a Comparative Analysis (Biological Prospecting)	Sweden Belgium Finland France Netherlands Spain	X	X			
IP071	ATCM 13	The SCAR lecture – Marine life and change in the Southern Ocean	SCAR	X				SCAR Lecture slides
IP072	CEP 6b	Initial Environmental Evaluation Law-Racovita Station	Romania	X				
IP073	CEP 4	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Romania	X				
IP074	ATCM 10	Romania participation in IPY 2007-2008	Romania	X				
IP075	ATCM 13	Central and Southeastern Europe cooperation in polar research	Romania	X				
IP076	ATCM 1	Statement of the delegation of Romania at the celebration of 50 years of Antarctic Treaty	Romania	X				
IP077	ATCM 13	Results of the Romanian scientific Antarctic activities in Larsemann Hills	Romania	X				
IP078	ATCM 4	COMNAP's 20 years: a new constitution and a new way of working to continue supporting science and the	COMNAP	X				

		Antarctic Treaty system						
IP079	ATCM 9	Joint medical evacuation from Davis Station, Antarctica	Australia United States	X				
IP080	ATCM 11 CEP 8d	Distinguishing human impacts at Palmer Station, Antarctica	United States	X				
IP081	CEP 7d	Notes on a Multiple Protection System for some areas of King George Island: Zones under Annex V and their relevance to Fildes Peninsula and adjacent areas	Chile	X				
IP082	ATCM 14	Documento retirado	Chile				X	
IP083	ATCM 13	Continuous data collection and long-term monitoring as an integral part of the Antarctic scientific programs	Argentina	X	X		X	
IP084	ATCM 17	Update of the activities of the Argentine Antarctic Program on Bioprospection and Bioremediation in the Antarctica	Argentina	X	X		X	
IP085	ATCM 13	Antarctic scientific research projects developed in Argentina in 2008	Argentina	X	X		X	
IP086 rev.1	ATCM 11	IAATO Overview of Antarctic Tourism: 2008-2009 Antarctic Season and Preliminary Estimates for 2009-2010 Antarctic Season	IAATO	X				
IP087	ATCM 11 CEP 6b	IAATO Field Operations Manual (FOM)	IAATO	X				
IP088	ATCM 11	Survival Craft on Passenger Vessels: An Overview	IAATO	X				
IP089	ATCM 13	Asian Forum for Polar Sciences (AFoPS) Report to XXXII ATCM	Japan	X				
IP090	ATCM 10	Japan's Contribution to IPY 2007–2008	Japan	X				
IP091	ATCM 17	Biological Prospecting: An update on recent policy developments at the international level	UNEP	X				
IP092	ATCM 13	South American Network on Antarctic Marine Biodiversity (BioMAntar) and South American Consortium for the Census of Antarctic Marine Life (LA CAML): an update	Brazil Chile Ecuador Peru	X				
IP093	ATCM 15	Educational initiatives of the Chilean Antarctic Institute: Promoting Antarctic science among youth	Chile	X			X	
IP094	ATCM 13	Japan's Antarctic Research	Japan	X				

		Program and Its Future						
IP095 rev.1	ATCM 1	Statement by H.E. Seiko Hashimoto State Secretary for Foreign Affairs of Japan on the occasion of the 50th Anniversary of the Antarctic Treaty	Japan	X				
IP096	ATCM 12	Inspection undertaken by Norway in accordance with Article VII of the Antarctic Treaty	Norway	X				
IP097	CEP 4	Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente- Expedición 2008-2009	Ecuador				X	
IP098	ATCM 15	I Simposio Ecuatoriano de Ciencia Polar, 2008	Ecuador				X	
IP099	ATCM 14	The New Brazilian Vessel	Brazil	X				
IP100	ATCM 13 CEP 9b	Two new Antarctic Related National Institutes recently established in Brazil	Brazil	X				
IP101	ATCM 11	Land-Based Tourism Facilities	IAATO	X				
IP102	ATCM 4	Report of the Antarctic and Southern Ocean Coalition (ASOC)	ASOC	X				
IP103	ATCM 4	Report by IUCN The International Union for Conservation of Nature	IUCN	X				
IP104	CEP 9b	Proyecto para el Estudio de Contaminantes Orgánicos Persistentes (COPS) y Mercurio en la Red Trófica de la Antártida	Ecuador Canada				X	
IP105	ATCM 4	COMNAP Report to ATCM XXXII	COMNAP	X				Appendix 2: Main Antarctic facilities operated by the National Antarctic Programs in 2009 in the Antarctic Treaty Area (South of 60 degrees latitude South)
IP106	ATCM 10	International Polar Year 2007- 08 / BRAZILIAN Scientific Activities	Brazil	X				
IP107	ATCM 13	Chilean Program for Scientific and Technological Research in Antarctica	Chile	X			X	
IP108	ATCM 18	Exposición Filatélica ExpoAntártica Chile 2009 Lanzamiento y Matasellado alusivo al sello postal de la exhibición	Chile				X	
IP109	ATCM 14	Fotoprotección contra los rayos ultravioleta (UV)	Ecuador				X	
IP110	ATCM 15	V Simposio Latinoamericano sobre Investigaciones	Ecuador				X	

		Antárticas y II Simposio Ecuatoriano de Ciencia Polar (2-4 Septiembre de 2009)						
IP112	CEP 7d	Report of the Deception Island Antarctic Specially Managed Area (ASMA) Management Group	Argentina Chile Norway Spain United Kingdom United States	X				
IP113	ATCM 13	The Czech research activities on the James Ross Island and Antarctic Peninsula in 2008/09	Czech Republic	X				
IP114	ATCM 14	Neumayer Station III Completion of construction and start of pilot operation in February 2009	Germany	X				
IP115	ATCM 17	Bioprospecting activities of Brazil in Antarctica: a short report	Brazil	X				
IP116	ATCM 18	The opportunity of the Arctic Treaty introduction, as the boreal equivalent of the Antarctic Treaty, for the peace and progress of mankind in the 21st century	Romania	X				
IP117	ATCM 15	Launch of Postmarked Stamp Issue: “Preserving the Polar Regions and Glaciers”	Chile Finland	X			X	
IP118	ATCM 14	Participación de los centros de Búsqueda y Salvamento Aéreo y marítimo de Chile en el rescate del Buque de pasajeros “USHUAIA” y medidas de mitigación medioambiental por accidente en la Antártica	Chile				X	
IP119	ATCM 11	Report of activities of Antarctic tourism cruiseships operating from Ushuaia during austral summer season 2008/2009	Argentina	X			X	
IP120	ATCM 11	Report by Liberia on Sinking of MS Explorer	Belgium	X				Liberian Report in PDF format (23 Mb)
IP121	ATCM 5	Annex II to the Protocol on Environmental Protection to the Antarctic Treaty	Australia	X				

Secretariat Papers								
Number	Agenda Items	Title	Submitted By	E	F	R	S	Attachments
SP002 rev.1	ATCM 3	Annotated Agenda	ATS	X				
SP003 rev.2	ATCM 6	Secretariat Report 2008/09	ATS	X	X	X	X	Annex A: Financial Report Annex B Auditor's advice on internal control Annex C: Estimate of Income and Expenditure during 2008/09
SP004 rev.4	ATCM 6	Draft Secretariat Programme 2009/10	ATS	X	X	X	X	
SP005	ATCM 6	Contributions Received by the Antarctic Treaty Secretariat 2007-2010	ATS	X	X	X	X	
SP006	ATCM 5	Review of Recommendations on Protected Areas and Monuments	ATS	X	X	X	X	
SP007 rev.1	ATCM 14	Measures on operational matters	ATS	X	X	X	X	
SP008	ATCM 16 CEP 4	Electronic Information Exchange System: A report on the first operational season	ATS	X	X		X	
SP009	CEP 7a	Register of the status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	ATS	X	X	X	X	Register updated February 2009
SP010 rev.1	CEP 6b	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2008 and March 31st 2009	ATS	X	X	X	X	
SP011	CEP 8a	Topic Summary of CEP discussions on Non-native species (NNS) in Antarctica	ATS	X	X	X	X	

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