Final Report of the Thirty-first Antarctic Treaty Consultative Meeting

ANTARCTIC TREATY
CONSULTATIVE MEETING

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Kyiv, Ukraine
2–13 June 2008

Secretariat of the Antarctic Treaty
Buenos Aires
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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 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 Programes
EIA	Environmental Impact Assessment
HCA	Hydrographic Commission 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
IPCC	Intergovernmental Panel on Climate Change
IPY	International Polar Year
IPY-IPO	IPY Programme Office
IUCN	International Union for Conservation of Nature and Natural Resources – The World Conservation Union
IUU	Illegal, Unregulated and Unreported fishing
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
SPA	Specially Protected Area
SSSI	Site of Special Scientific Interest
UNEP	United Nations Environment Programme
WG	Working Group
WMO	World Meteorological Organization
WP	Working Paper
WTO	World Tourism Organization

PART I

FINAL REPORT

Final Report of the Thirty-first Antarctic Treaty Consultative Meeting

Kyiv, Ukraine, 2–13 June 2008

(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 Kyiv from 2 to 13 June 2008, 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 XXX 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 organizations and non-governmental organizations were invited to attend the Meeting: the Interim Secretariat of the Agreement on the Conservation of Albatrosses and Petrels (ACAP), the Antarctic and Southern Ocean Coalition (ASOC), the International Association of Antarctica Tour Operators (IAATO), the International Hydrographic Organization (IHO), the International Maritime Organization (IMO), the Intergovernmental Oceanographic Commission (IOC), the International Programme Office for the International Polar Year (IPY-IPO), the International Union for the Conservation of Nature (IUCN), the World Tourism Organization (WTO), the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP).

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

Item 1: Opening of the Meeting

(6) In accordance with Rules 5 and 6 of the Rules of Procedure, Dr Valery Lytvynov, Director of the National Antarctic Center of Ukraine, opened the Meeting and proposed Professor Serhiy Komisarenko as Chair of ATCM XXXI. The proposal was accepted.

(7) An opening address was given by the Vice Prime Minister of Ukraine, Grigoriy Nemyrya. The Meeting also heard welcoming messages from the Ukrainian wintering team at Vernadsky Station in Antarctica.

(8) A welcome message from the President of Ukraine, Mr Victor Yushchenko, was read by the Chair. In the message, the President expressed his delight at having the opportunity to welcome the delegates to Ukraine. He stressed the importance of Antarctica as a unique wilderness reserve belonging to all of mankind and the duty to work together to study Antarctica and preserve its pristine nature for future generations. Antarctica had become a global research laboratory and through joint efforts of the countries this seemingly unfriendly land had become a region of true friendship, mutual understanding, and collaborative scientific endeavour among courageous representatives from many nations. The President pointed out the active part of Ukraine in international Antarctic studies and its commitment to the further development of such an important global research area. He emphasized that Ukraine stands for strict compliance with the Antarctic Treaty, and called for united efforts by all interested states in studying this severe but beautiful part of the planet. Mr Yushchenko looked forward to studies of Antarctica and its climatic and geological features that will show mankind how to address numerous environmental issues, enrich global science, and promote progress and security in human civilization. He wished all the delegates successful and creative work, inspiration and joy. The text of the message can be found in Annex D, page 391.

(9) The Vice-Prime Minister of Ukraine, Grigoriy Nemyrya, made an opening address on behalf of the Ukrainian Government. He extended the Government's warmest welcome to the Representatives of the Parties to the Antarctic Treaty in the city of Kyiv. He recalled that Ukraine had joined the Treaty in 1992. The signing of the memorandum on the transfer of the British Base Faraday on Galíndez Island to Ukraine (London, 1996) had been a key milestone in Ukraine joining the international Antarctic community. The station is now named after Vladimir Vernadsky, the founder of the Ukrainian Academy of Sciences. The Vice Prime Minister recalled that since the establishment of Vernadsky Station, there have been 13 Ukrainian Antarctic expeditions. The station had hosted wintering teams and studies in many research areas during the summer season. The Vice-Prime Minister pointed out that Ukraine had signed long-term agreements, exchanged wintering personnel and scientists, and had developed a number of joint research programmes and logistic operations

with other nations active in Antarctica. He expressed the government's concern for Antarctica as the only virtually untouched part of the blue planet, where climatic conditions helped minimize the impact of human technological activities, and where present and future generations may still admire the exceptional beauty and purity of the first pages of the Earth's history. The Vice-Prime Minister also highlighted his Government's attention to issues such as the restriction and regulation of the use of natural resources in the Southern Ocean, as well as the management of environmentally sound tourism. He recalled that Ukrainian scientists had started 16 new projects within the framework of the Third International Polar Year and had recently begun modernizing station equipment, refurbishing research and engineering facilities, and developing expedition-based studies to cover not only the Argentine Islands area but also inland Antarctica. He pointed out the government's continuous efforts to establish the requisite national regulatory legal framework in support of Antarctic activities. The Ukrainian Supreme Rada had approved, in the first reading, a draft national Law on Antarctic Operations that would open up new opportunities for Ukrainian Antarctic researchers. Ukrainian IPY projects and the 31st ATCM had caused much interest in Ukrainian society, especially in the younger generation. The Vice-Prime Minister was confident that the delegates' work on the issues included in the agenda of ATCM XXXI would give a powerful impetus to strengthen international environmental cooperation and encourage the development of relevant international and national organizations. He wished the Meeting successful work and balanced and wise decisions to provide for the integrity of the unique Antarctic nature. The text of the message can be found in Annex D, page 393.

(10) A welcome message from the Minister of Foreign Affairs of Ukraine, Mr Volodymyr Ogryzko, was read by the Chair. In the message, the Minister stressed the solid basis for international cooperation the Consultative Parties to the Antarctic Treaty had created in the previous century in this special area of the planet. The Antarctic Treaty had 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. He saw the increase from twelve to forty-six Contracting Parties as evidence of understanding the importance of the Antarctic for humankind. The recognition of Ukraine's status as a Consultative Party in 2004 had enabled it to join fully in this global movement. The Minister stated that the Ukrainian research station "Academician Vernadsky" had been included in the 17 basic centres of the global climate change observing system of the World Meteorological Organization, which represented the recognition by the world community of Ukraine's capabilities and, at the same time, imposed certain international obligations on Ukraine. He recalled the serious efforts made by the countries participating in the Antarctic Treaty System, especially the Consultative Parties, concerning the preservation of the Antarctic continent and the creation of sixty-seven Antarctic Specially Protected Areas and six Antarctic Specially Managed Areas. He wished the delegates success in dealing with the numerous proposals concerning the establishment of new areas and revision of Management Plans of existing areas which had to be considered at the Kyiv Meeting. Finally, he expressed the hope that, apart from fruitful work, the delegates would have an opportunity to enjoy the Ukrainian hospitality, the cultural

achievements of the people and the unforgettable atmosphere of Kyiv. The text of the Minister's message can be found in Annex D, page 395.

(11) The Ukrainian wintering team from Vernadsky Station sent their greetings to the delegates through a direct video link. The text of their message can be found in Annex D, page 397.

Item 2: Election of Officers and Creation of Working Groups

(12) Mr Evan Bloom, Representative of the United States (Host Country of ATCM XXXII) 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. Dr Valery Lytvynov, head of the Host Country Secretariat, acted as Deputy Secretary.

(13) Three Working Groups were established:

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

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

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

Item 3: Adoption of the Agenda and Allocation of Items

(15) The following Agenda was adopted:

1. Opening of the Meeting
2. Election of Officers and Creation of Working Groups
3. Adoption of the Agenda and Allocation of Items
4. Operation of the Antarctic Treaty System: Reports by Parties, Observers and Experts
5. Operation of the Antarctic Treaty System: General Matters
6. Operation of the Antarctic Treaty System: Review of the Secretariat's Situation
7. Report of the Committee for Environmental Protection
8. Liability: Implementation of Decision 1 (2005)
9. Safety and Operations in Antarctica
10. The International Polar Year 2007-08
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. Preparation of the 32nd Meeting
19. Any Other Business
20. Adoption of the Final Report

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

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

(17) The Meeting also decided to allocate draft instruments arising out of the work of the Committee for Environmental Protection to the Legal and Institutional Working Group for consideration of their legal and institutional aspects.

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

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

(19) The United States, in its capacity of Depositary Government, reported on the status of the Antarctic Treaty and the Protocol on Environmental Protection to the Antarctic Treaty (see Annex F, page 479). Monaco had acceded to the Antarctic Treaty on the 31st of May 2008.

(20) The United Kingdom, in its capacity of Depositary of the Convention for the Conservation of Antarctic Seals (CCAS) reported that there had been no new accessions to the Convention. The UK reminded Parties to CCAS that the deadline for annual returns was end of June (see Annex F, page 493).

(21) Australia, in its capacity of Depositary of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) reported that since ATCM XXX no new countries had acceded to the Convention (see Annex F, page 497).

(22) Australia, in its capacity of Depositary of the Agreement on the Conservation of Albatrosses and Petrels (ACAP) advised the Meeting that since ATCM XXX no new States had acceded to the Agreement (see Annex F, page 499).

(23) The Executive Secretary of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) introduced the CCAMLR report (see Annex F, page 501) and informed the Meeting that the 26th Meeting of CCAMLR had been held in Hobart from 22 October to 2 November 2007. The most notable issues dealt with at that meeting included:

- CCAMLR fisheries in 2006/07;
- Illegal, unreported and unregulated (IUU) fishing;
- Ecosystem monitoring and management;
- Deep-sea bottom fishing;
- By-catch in longline and trawl fisheries;
- Marine Protected Areas;
- Cooperation with international organizations, particularly the ATCM; and
- Performance review of the organization. The Meeting expressed its deep sympathy to CCAMLR and the Brazilian delegation for the loss of Dr Edith Fanta who was the Chair of the Scientific Committee to CCAMLR.

(24) Regarding certain contents of these documents, Argentina pointed out that it had not ratified the New York Agreement on Straddling and Highly Migratory Fish Stocks of 1995 and reiterated the terms of its statement upon adoption of UNGA Res. 61/105 in the sense that none of the provisions of said Agreement may be deemed to be binding on the States that have not expressly manifested their consent to be bound by that Agreement.

(25) As for cooperation between CCAMLR and regional fishing organizations, Argentina recalled that such cooperation should be undertaken on a case by case basis, rather than attempting to establish a permanent and unlimited cooperation scheme, due to asymmetries in memberships and significant differences existing between the objectives of CCAMLR and those of such organizations.

(26) The Executive Secretary of the Council of Managers of National Antarctic Programs (COMNAP) introduced its report (see Annex F, page 513). The predominant focus included safety, efficiency and international collaboration. The relevant COMNAP activities dealt with Search and Rescue (SAR), Ship Position Reporting System, Antarctic Flight Information Manual, COMNAP Fuel Manual, training material and procedures concerning introduction of non-native species. The COMNAP Executive Secretary underlined COMNAP's commitment to provide useful, practical and non-political advice.

(27) The Executive Director of the Scientific Committee on Antarctic Research (SCAR) introduced its report (see Annex F, page 543). He emphasized that this is SCAR's 50th anniversary year and SCAR's leading role in the network of the four main bodies of the International Council for Science (ICSU). SCAR's research focuses on five key themes in Antarctic science: (i) the modern ocean-atmosphere-ice system and its role in global climate change; (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.

(28) 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 Hydrographical Organization (IHO); the International Union for the Conservation of Nature (IUCN); the Antarctic and Southern Ocean Coalition (ASOC).

(29) The Australian Delegation presented a report on the Agreement on the Conservation of Albatrosses and Petrels (ACAP), on behalf of the ACAP Interim Secretariat. The Meeting of the Parties to ACAP had developed a work plan with priority actions to be implemented by the ACAP Advisory Committee, including actions relating to fisheries bycatch of albatrosses and petrels and management and protection of breeding sites. ACAP sought to work closely with the Antarctic Treaty Parties on matters of mutual interest, including protection of ACAP species occurring in the Antarctic Treaty area, minimizing disturbance to breeding areas, and exchanging information. The Advisory Committee was developing comprehensive species assessments for all ACAP species, and the outcomes of the recent SCAR workshop on the status of the southern giant petrel would be considered at the next Meeting of Parties to be held between 22 – 25 August 2008 in Cape Town, South Africa. Further Antarctic Treaty Parties were encouraged to become Parties to the Agreement to help achieve and maintain a favourable conservation status for albatrosses and petrels.

(30) The Executive Director of the International Association of Antarctica Tour Operators (IAATO) presented its report (see Annex G, page 593). She made particular mention of the sad loss of the *M/S Explorer* and stated that, in addition to the assessment of the IAATO – wide response to the incident, the organization will analyse in detail the final report of the investigation. As of April 28, 2008 a number of changes in IAATO's bylaws were agreed. Other notable changes include the upgrade of IAATO's computerized Ship Scheduling Program, improved use and efficiency of the Post Visit Report Form, development of additional site guidelines and adoption of IAATO's new Wilderness Etiquette Procedure. IAATO's new Waste Management Policy for disposal of waste by vessels was also agreed. Educational outreach was addressed through the update of science sheets, educational posters and revision of the mandatory Safety and Conservation Briefing and support of IPY projects. The Executive Director of IAATO thanked Ukraine for having organised the 31st ATCM and informed the Meeting of her imminent rotation to another position.

(31) The Representative of the International Hydrographical Organization (IHO) presented its report (see Annex G, page 615). He informed the Parties of the growing membership

of the Hydrographic Commission on Antarctica (HCA) to 19 full members. He informed the Parties of the issue of membership, the IHO 5 Year Work Programme approved by the 17th International Hydrographic Conference in May 2007 and the status of nautical charting. He urged Parties to consider whether rules or guidelines analogous to those of SOLAS Chapter V Regulation 9 could be adopted for Antarctica and highlighted the IHO collaboration with international organizations and the ATCM.

(32) The United Kingdom welcomed the report of the IHO and highlighted the importance of hydrographic work in Antarctica.

(33) The Representative of the International Union for the Conservation of Nature (IUCN) presented its report (see Annex G, page 631) and expressed its deepest sympathy to the Brazilian delegation and to CCAMLR for the loss of Dr Edith Fanta. The Representative focused on Antarctic and Southern Ocean Marine Protected Areas. She also identified the need to continue actual identification and designation of sites where scientific information already exists or precaution dictates that action be taken to protect the important values identified in Article 3.2 of Annex V. She informed delegates of the 9th COP of the Convention on Biological Diversity which adopted scientific criteria for identifying ecologically or biologically significant marine areas. She addressed the climate change issue and urged the Parties to adopt an extremely precautionary approach to the management of human activities in the Southern Ocean and Antarctica. Another area of concern was the substantial and continued growth of tourism activities and cumulative impacts in Antarctica. She also looked forward to the results of the International Polar Year project on non-native species as well as the Intersessional Contact Group (ICG) to examine the issue of biological prospecting.

(34) The representative of the Antarctic and Southern Ocean Coalition (ASOC) presented its report (see Annex G, page 585). She drew the Parties' attention to the increase of tourism and urged them to adopt a resolution to consider the growth of Antarctic tourism as undesirable. She emphasized the climate change impacts on the Antarctic ecosystem and asked the Parties to adopt a proactive approach to mitigate the negative consequences of climate change. She reviewed the progress in meeting the objectives of Annex V of the Protocol and suggested the CEP could be charged with the task of providing explicit advice on values and on sites listed in Annex V not yet designated as Protected Areas. The ASOC representative also proposed that the ATCM, together with the IMO, may consider conducting a risk assessment of heavy vessel traffic in the region and the consecration of 30% of the Southern Ocean area as MPAs by 2018. She expressed ASOC's concern over the lack of progress made towards the ratification of Annex VI to the Protocol. Finally, she expressed ASOC's worry about Russia's intentions to continue with the penetration of Lake Vostok this season.

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

Rules of Procedure

(35) The United Kingdom introduced WP 1 *Proposal by Australia, the United Kingdom and Norway to amend Rule 11 of the Rules of Procedure of the ATCM*, suggesting that it would establish a clearer and more transparent process for the establishment of Working Groups and the appointment of Working Group Chairs and Vice-Chairs. Several delegates welcomed this proposal which they considered would increase transparency, but some considered its approach might limit flexibility. After consultations the Meeting agreed to amend Rule 11 and adopted Decision 1 (2008) (Annex B, page 321). The Meeting requested the Secretariat to post the texts of its previous Decisions on the Rules of Procedure of the ATCM, namely Decision 2 (1995), Decision 1(1997), Decision 1 (2004) and Decision 3 (2005) in such a way as to make clear that they are no longer current.

Annex II

(36) Australia introduced WP 18 *Annex II: Proposals for Completing the Review* and the associated IP 18, noting that it was a response to discussion at ATCM XXX on the Review of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty. Specific amendments to the Annex were proposed taking into account the advice of the CEP. Several Parties supported continuing this process, while others underscored that agreement to discuss the proposed changes did not mean agreement to make amendments, as the judgement as to whether amending the Annex is indispensable would have to await the complete final text. The Meeting considered the specific changes proposed to Annex II based on IP 18 with the understanding that "nothing is agreed until everything is agreed". The Chairman of the Legal and Institutional Working Group circulated his personal summary of 10 June 2008, translated into the four official languages, to all delegations. Australia agreed to present a Working Paper on Annex II, including the specific proposed amendments for further discussion at ATCM XXXII.

CCAMLR

(37) New Zealand introduced WP 23 *Commission for the Conservation of Antarctic Marine Living Resources Performance Review*. It was noted that at its 26th meeting in 2007 CCAMLR had decided to undertake a performance review in 2007/08 with the expectation that a final report would be submitted to CCAMLR's 27th meeting in 2008. New Zealand drew attention to the invitation from CCAMLR to the CEP Chairman to participate (*ex officio*) in the CCAMLR Performance Review Panel, and to the inclusion of criteria in the Performance Review which dealt with the role of CCAMLR within the Antarctic Treaty System, and to the fact that CCAMLR is an integral part of the Antarctic Treaty System.

(38) The meeting welcomed CCAMLR's decision to undertake a performance review and the participation of the CEP Chair *ex officio* in the review panel, which was in

keeping with the increased cooperation between the ATCM and CCAMLR encouraged in Resolution 1 (2006). The Meeting invited the CCAMLR Observer to report on the outcomes of the review to ATCM XXXII and indicated it would look with interest at the results of the review.

Guidance for Documents

(39) The United Kingdom introduced WP 41 *Guidance for Working Papers on Area Protection and Management* and explained that this paper was an update of ATCM XXX/WP 43 and reflected comments received from Parties during the intersessional period. The meeting noted the CEP's welcoming of this paper and adopted Resolution 1 (2008) (Annex C, page 365) and requested the Secretariat to:

- provide the information set out by the proposing Party in the cover sheet of the Working Paper, subject to any revision by the Committee for Environmental Protection, to accompany any draft Measure tabled at the ATCM to give effect to that proposal;
- post the text of Resolution 9 (1995) on its website in a way that makes clear that it is no longer current.

(40) The Executive Secretary introduced SP 7 *Manual for the Submission of Documents to the Antarctic Treaty Consultative Meeting and the Committee for Environmental Protection*. Parties noted that the guidelines contained therein were an improvement that had aided the preparation of this year's papers. The Meeting agreed that the guidelines should be amended to reflect the improvements in the practice of drafting Measures, Resolutions and Decisions agreed at this Meeting, in particular to remind the proposing Party to indicate whether any previous instruments would be replaced by the proposal.

White Book

(41) Chile introduced WP 62 *The Antarctic Treaty and the Public "The White Book": A Project on the History and Achievements of the Antarctic Treaty System*. The Meeting thanked Chile for its White Book proposal. The Meeting supported the concept of a "White Book", conceived as a joint publication by the Antarctic Treaty Parties and reflecting the history and achievements of the Antarctic Treaty System. The theme of the "White Book" would be "The Antarctic Treaty – 50 years of peaceful cooperation". It would:

- include historical, political and legal background; discuss the significance of Antarctic science, including scientific achievements;
- emphasise international cooperation; and
- not duplicate the Antarctic Treaty Handbook.

(42) Considering the practical problems in producing such a book by the time ATCM XXXII meets in Baltimore (April 2009) the Meeting endorsed in principle such a project, provided all the inherent and associated problems raised by the publication

of the "White Book", including financing of such a project, had been satisfactorily overcome. The Meeting would further review the progress and feasibility of the "White Book" at ATCM XXXII with the intention that, if it proceeded, the book should be available in June 2011 for the anniversary of the entry into force of the Antarctic Treaty.

(43) The Meeting agreed that Chile should work with interested Parties intersessionally to prepare a comprehensive report on all aspects concerning the "White Book", its contents, costs, funding, publication and availability (i.e. including other languages besides the official Treaty languages), educational use, promotion and distribution. The Meeting noted that the intersessional work may involve seeking support from all the components of the Antarctic Treaty System, the Secretariat, recognized academic institutions in the member countries, the IPY Programme Office and other institutions. The work should be done under the close oversight of the Antarctic Treaty Consultative Parties and should be reported to them periodically. The "White Book" would not be finalized before the ATCM reviewed and approved it.

Review of the status of recommendations

(44) The Executive Secretary introduced SP 9 *Recommendations of the ATCM: survey of their status* and the linked papers, SP 10 *Recommendations on Area Protection and Management* and SP 11 *Recommendation on other Environmental Issues*. Some delegations noted that the surveys contained details of instruments that should have been marked as no longer current. It was further noted that while some recent Decisions and Measures made it clear which instruments they replaced (and declared them no longer current) this practice was not followed consistently and sometimes led to confusion. The United Kingdom noted that the Antarctic Treaty Database should be clear as to which Measures were current. It led an open-ended contact group that suggested that those issues be discussed further at ATCM XXXII on the basis of the papers presented by the Secretariat.

(45) Based on the recommendation of the contact group, the Meeting agreed that each new Measure on Area Protection should cover a single ASPA or ASMA only. Where the intention was to replace or amend previous Recommendations, Measures or Management Plans, the new Measure should state that explicitly and list them. This would enable the Secretariat to ensure that the database shows a clear distinction between Measures and Plans which were current and those which were not. The database should eventually be able to show the status (as current or not current) of all the Measures relating to a protected area.

(46) For future Meetings the Secretariat will be able to prepare a draft Measure in advance of the Meeting for each proposed ASPA, ASMA or HSM using the Measures adopted at this ATCM as a model. The Meeting thanked the Secretariat for taking on this task which will help streamline the work of the Legal and Institutional Working Group.

Marine Protected Areas

(47) ASOC presented IP 119 *Designation of Marine Protected Areas within the Antarctic Treaty Area,* calling on ATCM XXXI to reaffirm the intention to create a representative and coherent network of MPAs as ASPAs and ASMAs under Annex V, and to resolve to place a substantial and representative part of the total marine area inside the Antarctic Treaty area within MPAs by 2018. Several Parties thanked ASOC for a helpful paper and reflected that the close links between the CEP and CCAMLR should help further progress on designation of marine areas through CCAMLR's work on Bioregionalisation of the Southern Ocean.

(48) The CCAMLR observer commented that CCAMLR had endorsed administrative procedures to ensure that ATCM proposals with marine components were speedily reviewed by CCAMLR following ATCM Decision 9 (2005); that it had recognized the need for extensive dialogue with the ATCM and CEP, as well as SCAR, the Scientific Committee on Oceanic Research (SCOR) and other inter-governmental and non-governmental organisations following the Commission's recent deliberations on marine protected areas and bioregionalisation; that a number of outcomes from the CCAMLR Bioregionalisation Workshop in August 2007 required further consideration by CCAMLR's Working Group on Ecosystem Monitoring and Management (WG-EMM) at its meeting in July 2008; and that a key issue to be addressed by CCAMLR in 2008 would include establishment of a procedure to identify marine areas for protection and to further CCAMLR conservation objectives.

(49) A number of Parties highlighted the importance of the conservation of the marine environment as part of the ATCM and CCAMLR's joint responsibilities for environmental protection.

(50) Australia noted the work that had been done during the last austral summer on a Census of Antarctic Marine Life, with 17 ships from different Parties participating in the census, which had brought much new information on life in the Southern Ocean.

(51) The United Kingdom presented a draft Resolution to recommend that work be continued and intensified towards the protection and management of the Antarctic marine environment. This was welcomed by a number of Parties, but others considered that the issue needed careful consideration. The United Kingdom indicated that it would continue to work on this important issue.

Other matters

(52) The Russian Federation introduced WP 49 *On the status and development of the Antarctic Treaty System*. The paper underscored its concern about possible duplication of specific functions among existing bodies of the Antarctic Treaty System, potentially leading to situations where different management bodies might make conflicting decisions on the same issue. Such duplication could also lead to an imbalance in the

operations of the Antarctic Treaty System and might negatively impact the System's governance. The Meeting noted Russia's concern.

(53) The Meeting took note of IP 31 *Creación, a nivel Parlamentario, de la Comisión Especial sobre Intereses Uruguayos en la Antártida* presented by Uruguay.

(54) The Russian Federation presented IP 43 *On development of Draft Law "On regulation of activities of the Russian citizens and legal entities in the Antarctic"*. Some delegations asked for clarification of the legal process and whether this draft law ratified Annex VI and/or was a response to Measure 4 (2004). The Russian Federation advised that this was a move towards ratification of Annex VI, but that there would need to be a two-step process before ratification.

(55) ASOC presented IP 58 *Antarctic Shipping*, noting that the IMO and ATCM needed to work much more closely to ensure that all vessels using the Southern Ocean had appropriate standards for ice-strengthening and operations, and that IMO instruments were ratified and adopted by all ATCPs. Annex B of the ASOC paper provided a list of the status of ratifications by Antarctic Treaty Parties of the instruments. Several Parties thanked ASOC for providing an important paper, and supported its request for the highest standards to be applied. ASOC drew the Parties' attention to the work carried out in the intersessional contact group (ICG) on issues concerning passenger ships operating in Antarctic waters (WP 36). ASOC expressed the hope that the ICG would continue its work and involve the IMO more closely. Norway noted that it was important to delineate the respective areas of responsibility of the IMO and the ATCM. The United Kingdom noted the progress the IMO had made in respect of ballast water and heavy fuel oils, and underscored the importance that the ATCM retain policy lead for activities in Antarctica, whilst working effectively with the IMO. For a more substantive discussion on this item see below Agenda Item 11.

Item 6: Operation of the Antarctic Treaty System: Review of the Secretariat's Situation

(56) The Executive Secretary introduced SP 3 rev 1 *Secretariat Report 2007/08* and explained the key elements.

Management

(57) The Executive Secretary stated that the Argentine staff had decided not to join the official Argentine Integrated System of Pensions and Retirement for the time being.

(58) Argentina announced that with regard to the social security contributions of the Secretariat's staff who opted for the Integrated System of Pensions and Retirement (State System) of the Argentine Republic, the Argentine Government would take up – by way of voluntary payments to the Secretariat – the employer's contributions that are made by the employees on the understanding that Parties had established the Secretariat as a small, cost-effective entity, with a small number of employees similar to the present one.

(59) The Meeting expressed its great appreciation of this announcement. Several Parties noted at the same time that with regard to the relevant decision by staff members there should be a proper audit trail, and that all members of the Secretariat staff should confirm in writing that they have received the information as to the options available to them, that they had been advised to seek their own independent advice before making individual decisions on their pension choice, and that they understood that if they chose to exclude themselves from the State System, they could not later seek reimbursement from the Secretariat.

Public Information Developed by the Secretariat on the Antarctic Treaty System

(60) Some Parties expressed concern that the Secretariat had published material for public use that had not been seen and cleared by the Parties and asked that the most recent brochure (Antarctic Treaty System) be made available to Parties at the Meeting. The Executive Secretary noted that the 2007 edition had been circulated late at ATCM XXX in New Delhi, but that some Parties may not have seen it before it was distributed to tourists destined for Antarctica. Of those who had, some had provided comments and these had been taken into account when the current version of the brochure was published.

(61) Some Parties noted that they had objections to certain portions of the brochure. The Executive Secretary was directed to withdraw the brochure and its downloadable version.

(62) The Meeting decided that any future substantive printed information for public dissemination should be circulated and cleared by Parties before publication.

Website and Electronic Information Exchange System

(63) Several Parties welcomed the development of the new website, noting that it provided very useful information. However, it was noted that the discussion about material published by the Secretariat applied equally to what was placed on the ATS website. Parties indicated that the material on the website and any new material for inclusion on the ATS site (except for material resulting from an ATCM, or otherwise approved) should be circulated to Parties with a reasonable opportunity to provide comments prior to being maintained or posted on the website. In the interim, material contained on the Antarctic Treaty System section of the website should be removed.

(64) Parties welcomed the progress of the Electronic Information Exchange System and noted that ongoing work should continue. Parties also considered that there may be a need for expansion of the Exchange System, as well as the potential to include material that could help to reduce the number and length of papers presented to each Meeting. See Agenda Item 16 below for further discussion.

(65) The Meeting decided that the number of pages for a Working Paper or Information Paper submitted to the ATCM should be limited wherever practicable. It further agreed to consider at ATCM XXXII other options for reducing costs associated with the translation and publication of papers.

Financial Matters

(66) The Executive Secretary introduced the Secretariat's financial report 2006/07, noting that at the time of ATCM XXX this was only provisional. Since then, the Argentine auditors had carried out their audit. They had found significant errors in the figures provided in the Provisional Report and this had resulted in a number of changes in the Audited Report (Annex B of SP 3 rev 1). Parties expressed their concern about the difference in figures in the two reports, and the differences between the approved draft budget for Financial Year 2006/07 and actual expenditure. They further noted that Regulation 4.4 of the Financial Regulations proscribed increases in expenditure in excess of the overall draft budget approved by the ATCM.

(67) Parties noted with deep concern that part of the reason for the Secretariat's expenditure being over budget was the non-payment of contributions by four Parties and urged that those be paid as soon as possible. Parties were also urged to approve Measure 1 (2003) so that the finances of the Secretariat regarding future meetings would be put on a more sound footing.

(68) Uruguay clarified that its payment had been made initially to a wrong account, but had now been received by the Secretariat. Belgium, Peru and Ukraine assured the Meeting that their contributions would be forthcoming in the near future.

(69) The Meeting asked the Secretariat to ensure that in those cases when there were provisional, unaudited accounts, future financial reports should show draft expenditure figures, approved expenditure figures and the unaudited actual expenditure figures.

(70) The Executive Secretary explained that the Secretariat's financial position had been overstated significantly due to accounting errors relating to handling of foreign exchange fluctuations and treatment of VAT reimbursements. Parties noted that this problem would be minimized in future by reducing the proportion of the budget held in pesos.

(71) Parties urged the Executive Secretary to maintain rigorous control over future expenditure, in compliance with Regulation 4 of the Financial Regulations.

(72) The Executive Secretary reported that the auditors had yet to produce the audited Financial Report for 2007/08 and that Annex C of SP 3 rev 1 contained the Provisional Financial Report 2007/08. It was noted that the main effect of the revised 2006/07 figures was a reduction in the projected surplus amount, which in turn reduced the projected income for 2008/09 budget. Following substantial discussion, the Meeting took note of the Provisional Financial Report for 2007/08, to which a footnote was added explaining the accumulated surplus at 31 March 2007.

2008/09 Activities and Budget

(73) The Executive Secretary introduced SP 4 rev 1 *Draft Secretariat Programme 2008/09* which included the draft Budget for 2008/09 and the Forecast Budget for 2009/10. The budget figures showed a very large deficit for 2008/09, temporarily offset by a

reduction in amounts held in the Future Meeting Fund. A number of Parties questioned the substantial increase in assessed contributions for 2009/10. The Meeting noted that the Future Meeting Fund (FMF) was not intended for general expenditure but was intended for use when Measure 1 (2003) came into effect. It was suggested that the budget be reduced so that expenditure matched income. Following extensive discussion and substantial efforts by the Executive Secretary and concerned Parties to identify possible savings while at the same time ensuring that the Secretariat was able to execute its core functions, the Revised Budget for 2008/09 and Forecast Budget for 2009/10 were completed, with a net effect of reducing the deficit to US dollars 40,524 for 2008/09. It was agreed that the Secretariat would borrow that amount from the FMF on the understanding that the FMF should be replenished in 2009/10 by the same amount.

(74) The Meeting agreed to approve the audited Financial Report 2006/07 and adopted Decision 2 (2008) (Annex B, page 329).

(75) The Meeting agreed to adopt Decision 3 (2008) (Annex B, page 353) regarding the appointment of the Sindicatura General de la Nación (SIGEN) as the external auditor of the Secretariat. This Decision replaces Decision 3 (2007).

(76) The Meeting urged the Secretariat to complete the audited report before the next ATCM. In view of the difficulty in obtaining audited reports when the ATCM was to be held in April or May, Parties also discussed the possibility of changing the Secretariat's financial year, so that it matched the calendar year. It was agreed to address the detail of this matter at a future meeting.

(77) The Executive Secretary pointed out that in all probability it would not be possible to maintain the present level of the budget in the years after 2009/10, because of the following challenges that faced the Secretariat in the coming years:

- While the Future Meeting Fund would be available for immediate use at the ATCM following approval of Measure 1 (2003), the Secretariat budget would thereafter need to include the interpretation and translation costs of the ATCM, which up to now had been borne by the host country. This would add a sum of around $400,000 to the budget.
- Especially because of the changes in the exchange rates of the euro, the current salary of the Executive Secretary was not competitive anymore in the European context.
- There was some concern over inflation in Argentina.
- Expenditures on the Secretariat's IT infrastructure would be reduced significantly for the next two years. Some items however could not be postponed indefinitely.
- The Secretariat's public information activities would be scaled down drastically. While the preparation of the text of the Antarctic Treaty Handbook and its review by the Parties would continue, there would not be resources for its publication. Those expenditures would have to be added to the budget in 2010/11.

(78) Japan, while thanking the Executive Secretary for this information, stated that it was for the Meeting to decide whether or not those increases in the future budget would be necessary or appropriate.

(79) It was also noted that, while the Secretariat's travel expenditures could be scaled down considerably in the years 2010 and 2011 because of the ATCM's location in those years, they would probably go up dramatically in the following years.

(80) The Meeting welcomed the Executive Secretary's offer to provide periodic financial updates via email to the Consultative Parties for their information.

(81) Australia introduced WP 63 *Procedure for Selection and Appointment of the Executive Secretary of the Secretariat of the Antarctic Treaty*. Following discussion, Parties agreed the procedure to be followed. Decision 4 (2008) (Annex B, page 357) was adopted including a standard application form. The Meeting also agreed to a draft advertisement that Parties may use for recruiting the Executive Secretary in 2009 (Annex H, page 641).

Item 7: Report of the Committee for Environmental Protection

(82) The CEP Chair introduced briefly the CEP Report (see Annex E, page 399), noting that the CEP had considered forty-four Working Papers, a new record, sixty-four Information Papers and five Secretariat Papers. The full list of papers, listed under CEP Agenda Items, can be found in Annex I to the CEP Report.

CEP Agenda Item 3. Strategic Discussions on the Future of the CEP

(83) The Committee had considered a number of suggestions for improving its efficiency and had agreed that all papers submitted to its meetings should include an abstract, and that, as required, topic summaries could be prepared by the Secretariat or by willing members to summarise past discussions and agreements. These would then be made available on the website to assist Members.

(84) The Committee had re-examined and adopted an updated version of the five-year work plan provisionally agreed at CEP X.

(85) The Committee had reviewed the effectiveness of the trial informal group established at CEP X to improve the intersessional process for reviewing management plans for protected and managed areas, and had prepared an outline proposal for establishing a Subsidiary Group on Management Plans (SGMP). The Meeting approved the proposal in accordance with Rule 10 of the CEP's Rules of Procedure, noting that the proposal would not have budgetary consequences.

CEP Agenda Item 4. Operation of the CEP

(86) The Secretariat had reported to the Committee on the further development of the Electronic Information Exchange System (EIES) as a mechanism for exchanging information required by the Protocol, and the CEP proposed that the EIES be utilised

as a reporting tool to exchange information required under Article 17 of the Protocol. The commencement of the EIES is further treated under Agenda Item 16: Exchange of Information, below.

CEP Agenda Item 6. Environmental Impact Assessment

(87) The Committee had discussed in detail the draft Comprehensive Environmental Evaluation (CEE) prepared by China for the proposed construction and operation of the new Chinese Dome A Station in Antarctica, on the basis of the comprehensive report by Australia of the ICG established to consider the draft CEE, in accordance with the Procedures for intersessional CEP consideration of draft CEEs, and additional information provided by China in response to issues raised in the ICG. Having fully considered the draft CEE, the Committee advised the Meeting that:

- The draft CEE and the process followed by China generally conform to the requirements of Article 3 of Annex I to the Protocol on Environmental Protection to the Antarctic Treaty. When preparing the required final CEE, the proponent should closely consider, and address as appropriate, the comments raised by Members. In particular, the Meeting's attention was drawn to the suggestion that China should consider expanding the scope of the impact assessment in the final CEE to more adequately cover the full scope of the proposed activity.
- The Committee generally agreed with China's conclusion that the proposed activity is justified on the basis of the significant contribution it is likely to make to the support and conduct of important science. Many Members had expressed the view that it would be more appropriate for the CEE to conclude that the activity is likely to have more than a minor or transitory impact on the Antarctic environment.
- The draft CEE is clear and well-structured, and the final CEE could be improved by taking into consideration editorial suggestions raised by ICG participants and by consolidating text to reduce repetition.

(88) The Meeting accepted the CEP's advice.

(89) A discussion took place on the question whether the preparation of a CEE necessarily leads to the conclusion that the impact on the environment of the proposed activity would be more than minor or transitory. The CEP Chair noted that the Committee had also discussed the conclusions that CEEs might draw with respect to the terms "minor or transitory" set out in Annex I to the Protocol. This was noted as a matter for Parties to discuss at a future meeting.

(90) On the matter of having draft CEEs translated in the four Treaty languages the Committee had noted this was clearly a budgetary matter.

Wildlife disturbance

(91) On the basis of a comprehensive SCAR paper (WP 12), the Committee had discussed matters related to wildlife disturbance and had endorsed SCAR's recommendations for the need for ongoing research in this area.

CEP Agenda Item 7. Area Protection and Management

(92) The Meeting noted that the Committee had considered twenty-one new or revised protected or managed area management plans. Five of these had been subject to review by the Trial Informal Group (TIG) established by CEP X. Sixteen new or revised management plans had been submitted directly to CEP XI. In reviewing the advice of the TIG, and following the Committee's assessment of those plans that had not been subject to intersessional review, the Committee had decided to forward fourteen management plans (one ASMA and thirteen ASPAs) to the Meeting with the recommendation that they be adopted, and to forward four management plans (four ASPAs) for further intersessional review. The Committee advised that the existing management plans for ASPAs number 141, 143 and 156 need no change.

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

- Measure 1 (2008): Antarctic Specially Managed Area No 7 (South-west Anvers Island and Palmer Basin)
- Measure 2 (2008): Antarctic Specially Protected Area No 168 (Mount Harding, Grove Mountains, East Antarctica)
- Measure 3 (2008): Antarctic Specially Protected Area No 169 (Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica)
- Measure 4 (2008): Antarctic Specially Protected Area No 170 (Marion Nunataks, Charcot Island, Antarctic Peninsula)
- Measure 5 (2008): Antarctic Specially Protected Area No 118 (Summit of Mount Melbourne, Victoria Land): Revised Management Plan
- Measure 6 (2008): Antarctic Specially Protected Area No 123 (Barwick and Balham Valleys, Southern Victoria Land): Revised Management Plan
- Measure 7 (2008): Antarctic Specially Protected Area No 124 (Cape Crozier, Ross Island): Revised Management Plan
- Measure 8 (2008): Antarctic Specially Protected Area No 135 (North-east Bailey Peninsula, Budd Coast, Wilkes Land): Revised Management Plan
- Measure 9 (2008): Antarctic Specially Protected Area No 137 (North-west White Island, McMurdo Sound): Revised Management Plan
- Measure 10 (2008): Antarctic Specially Protected Area No 138 (Linnaeus Terrace, Asgard Range, Victoria Land): Revised Management Plan
- Measure 11 (2008): Antarctic Specially Protected Area No 154 (Botany Bay, Cape Geology, Victoria Land): Revised Management Plan
- Measure 12 (2008): Antarctic Specially Protected Area No 155 (Cape Evans, Ross Island): Revised Management Plan
- Measure 13 (2008): Antarctic Specially Protected Area No 160 (Frazier Islands, Windmill Islands, Wilkes Land, East Antarctica): Revised Management Plan
- Measure 14 (2008): Antarctic Specially Protected Area No 161 (Terra Nova Bay, Ross Sea): Revised Management Plan

Site Guidelines

(94) The Committee had considered six new Site Guidelines, and endorsed and recommended the Meeting approve four of these. The Meeting adopted Resolution 2 (2008) in which Site Guidelines for the following visitor sites were added:

- Shingle Cove, Coronation Island (Lat. 60º 39' S, Long. 45º 34' W)
- Devil Island, Vega Island (Lat. 63° 48' S, Long. 57° 67' W)
- Whalers Bay, Deception Island, South Shetland Islands (Lat. 62° 59' S, Long. 60° 34' W)
- Half Moon Island, South Shetland Islands (Lat. 60° 36' S, Long. 59° 55' W)

(95) The Committee had discussed the merits of site-specific and general advice contained in the Site Guidelines. It had also noted that Recommendation XVIII-1 (1994) *Guidelines for Tourism* is still not in effect. The Meeting urged the Parties that had not done so yet (Ecuador and Korea) to approve this important management instrument so that it could go into effect.

Systematic Environmental Geographic Framework

(96) The Committee had considered the final report from New Zealand on its development of an Environmental Domains Analysis for meeting the systematic environmental geographic framework (SEGF) requirements of Annex V to the Protocol. The Committee strongly endorsed the EDA as a dynamic model for the identification of ASPAs within the SEGF referred to in Annex V to the Protocol.

(97) The Meeting adopted Resolution 3 (2008) to that effect.

(98) The Committee had also considered a proposal for a summary template, to be submitted at the time of submitting new or revised management plans for ASPAs, ASMAs or HSMs, to streamline the processing of management plans. The Committee had endorsed the amended version of the template.

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

(99) The Committee had considered the advice of SCAR with respect to its revised assessment of the status of southern giant petrels, and supported SCAR's recommendations that:

- The analysis does not support listing of the species as specially protected;
- Additional censuses of the species should be undertaken, particularly of sites censused more than 10 years ago, and the data used to support demographic models for the species;
- The lessons learned from this process should be applied to other species.

(100) The Meeting noted that the Committee had emphasized the need to reinforce commitments made in earlier ATCM Resolutions to limit disturbance to this species.

CEP Agenda Item 9. Environmental Monitoring and Reporting

(101) The Committee had considered the request (circulated through the Antarctic Treaty Secretariat) from the Secretariat of the Stockholm Convention on Persistent Organic Pollutants to advise on POPs in the Antarctic. SCAR offered to provide a review of the available information on POPs in the Antarctic context for submission to CEP XII. The Meeting welcomed SCAR's offer as a basis for the development of a consolidated Antarctic input to the Stockholm Convention.

CEP Agenda Item 10. Inspection Reports

(102) The Committee had considered a proposed new checklist for inspecting protected and managed areas, and a separate proposal to review the existing inspection checklist A adopted under Resolution 5 (1995). The Committee had agreed to forward the draft checklist for Inspecting Specially Protected and Managed Areas in Antarctica to the Meeting for approval.

(103) The Meeting discussed further this issue under Agenda Item 12 (see paragraphs 253-255).

CEP Agenda Item 14. Cooperation with Other Organizations

(104) The Committee had welcomed the proposal by CCAMLR's Scientific Committee to hold a joint SC-CAMLR and CEP workshop in 2009, and had developed a proposed theme and agenda items for such a workshop and nominated its Chair and Vice-Chairs as representatives to the joint Steering Committee. The Meeting welcomed this initiative and the advice from the host country for ATCM XXXII that a workshop immediately prior to CEP XII could be arranged.

CEP Agenda Item 16. Election of Officers

(105) The Committee had re-elected Dr Neil Gilbert (New Zealand) for a second term as Chair of the CEP, and elected Mr Ewan McIvor (Australia) as second Vice-Chair. Dr Yves Frenot (France) continues as first Vice-Chair.

(106) The Meeting congratulated Dr Gilbert on his re-election and Mr McIvor on his election, and joined the CEP in thanking Ms Tania Brito (Brazil) for the hard work she had put in as second Vice-Chair for the last two years.

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

(107) Germany noted progress being made in implementing domestic legislation and indicated a willingness to provide information that could be useful for other Parties in their own domestic implementation. The Meeting warmly welcomed the German information and indicated the usefulness of further informal exchanges of information on domestic implementation.

(108) ASOC noted that the ratification process was going very slowly and suggested a Resolution committing Parties to achieving ratification as quickly as possible.

(109) The Meeting welcomed reports from many Parties on progress towards their domestic implementation of Annex VI to the Environmental Protocol, to enable them to approve Measure 1 (2005).

(110) The Netherlands recalled Decision 1 (2005) and noted that, when discussing measures aiming to repair or remediate damaged or destroyed components of the environment at ATCM XXVIII, "Many delegations were of the view that it would be useful if the CEP could consider the practicality, in the Antarctic Treaty Area, of such measures. In that context those Delegations believed that it would also be desirable if SCAR, in conjunction with COMNAP, and any other expert bodies could submit, as soon as feasible to the CEP papers on scientific and technical issues relating to measures aiming to repair or remediate damaged or destroyed components of the environment" (Final Report, paragraph 45). In order for the Meeting to take an informed decision on the resumption of the negotiations in 2010, it was observed by the Netherlands, supported by other Delegations, that the papers should be submitted to the CEP at the next Meeting.

(111) Some Delegations observed that it was premature to task the CEP with such work and noted that the same Final Report stated that "[s]ome other Delegations considered such examination as premature and emphasised the importance of evaluating the implementation of Annex VI and the related Decision" (ATCM XXVIII Final Report, paragraph 45).

(112) Argentina noted in case of future elaboration of measures aiming at repairing environmental damage, applying remediation or reinstating destroyed environmental components, this should not be undertaken on the basis of purely economic criteria contrary to the spirit of Antarctic cooperation.

Item 9: Safety and Operations in Antarctica

HCA Seminar

(113) On Monday June 9th a Seminar on the Importance of Hydrographic Activities in Antarctica was held. The seminar was introduced by the Chairman of the Hydrographic Commission on Antarctica of the International Hydrographic Organisation (IHO/HCA), Captain Hugo Gorziglia, and presentations were made by Rear Admiral Ian Moncrieff, United Kingdom National Hydrographer; Rear Admiral Manuel Catalán, Technical Secretary of the Spanish Polar Committee and Chairman of the COMNAP SHIPOPS Committee; Dr Hans-Werner Schenke of the Alfred Wegener Institute for Polar and Marine Research; Yves Guillam, Head of Plans, Policy and External Relations of the French Hydrographic Service SHOM; and Commodore Rod Nairn, the Australian Hydrographer and Vice-Chair of the HCA.

(114) The HCA representatives recalled the mission of the International Hydrographic Organisation and explained the paramount importance of hydrography in Antarctica

to ensure safety of navigation of life at sea, protect the marine environment, support scientific research, contribute to search and rescue operations and enhance the decision-making process. They presented the main achievements of the HCA relating to the establishment of an international (INT) chart scheme. Hydrographic measurements technologies such as single beam and multibeam echosounding and the collection of oceanographic data involving sound velocity profiles were explained and illustrated, as were scientific applications of hydrography in the fields of geosciences, sea floor shaping, bathymetry and biodiversity conservation. The presenters recalled the role of the Safety Of Life At Sea (SOLAS) Conventions and highlighted the IHO Special Publication 55 Status of Hydrographic Surveying and Nautical Charting Worldwide.

(115) On the basis of actual examples, the nature of maritime accidents in Antarctica was explained. The risk of ships grounding represents the main threat for human life and the environment. It was pointed out that the main question relating to a major accident involving a tourist vessel was not if it would happen, but when. The HCA representatives pointed out the dramatic increase of tourism activities in relatively unknown waters and recalled the crucial importance of available and precise bathymetric and topographic data. They urged the Parties to increase information exchange and collaboration. The Meeting welcomed the important information presented in the seminar.

(116) While thanking the valuable presentations by the Hydrographic Commission on Antarctica, Argentina pointed out that it provides data collected by the oceanographic vessel Puerto Deseado, which during annual two month periods carries out hydrographic surveys in Antarctica (presently at South Orkney Islands and to the west of the Peninsula). The Servicio de Hidrografía Naval works on these matters within the Argentine Antarctic Programme.

(117) Argentina noted that the first of the presentations of the HCA Seminar had included a hydrographic chart of San Pedro Island, part of the South Georgias archipelago, which are outside the Antarctic Treaty area. Argentina has seen its hydrographic survey tasks in these waters thwarted, due to the fact that the South Georgia Islands are under the illegal occupation of the United Kingdom.

(118) Argentina wished to recall that the Malvinas, South Georgia and South Sandwich Islands and surrounding waters, which are the object of a sovereignty dispute between Argentina and the United Kingdom, are an integral part of the Argentine National Territory.

(119) 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. Furthermore, the United Kingdom underlined that it complies fully with Part XIII of the United Nations Convention on the Law of the Sea in considering any request for marine scientific research activity within the waters of its overseas territories.

(120) Argentina rejected the United Kingdom statement and reiterated its well known position.

Regular meeting

(121) The United Kingdom introduced WP 38 *Improving hydrographic surveying and charting to support safety of navigation and environmental protection in the Antarctic region*, prepared jointly with Australia. The paper presented a draft Resolution with four recommendations for Parties to consider.

(122) The UK welcomed the Seminar organized by the IHO, which highlighted the importance of charting in the region, and encouraged the ATCM to improve its cooperation with the IHO.

(123) SCAR noted that in November 2007, together with the Scientific Committee on Oceanic Research (SCOR), it had issued a SCAR Circular (768) on the need for national scientific organizations to gather Southern Ocean bathymetric data and submit it to a recognized database. As pointed out by Dr Hans-Werner Schenke during the IHO Seminar, these data were essential for geological, geochemical and geophysical analysis, the identification of habitats, and as a critical controlling parameter on the output of advanced ocean circulation and tidal models. Bearing that in mind SCAR and SCOR recommended that funding agencies worldwide should:

- encourage project scientists to incorporate in their proposals requests to collect and process multi-beam bathymetric data;
- fund multi-beam bathymetry data acquisition and processing on all research vessels equipped with multi-beam echo-sounders, whether on transit or on location; and
- ensure that the data are submitted together with track data to the World Data Center for Marine Geology and Geophysics.

(124) In addition SCAR and SCOR recommended that principal investigators use the track maps from that data centre to identify gaps that need filling with new data, and allocate sufficient time on transit to fill such gaps. This would contribute to the database for the International Bathymetric Chart of the Southern Ocean (IBCSO), as well as making a contribution to charts for safe navigation.

(125) The Parties agreed with the proposed recommendations by Australia and UK and adopted Resolution 5 (2008) *Improving hydrographic surveying and charting to support safety of navigation and environmental protection in the Antarctic region* (see Annex C, page 383).

(126) SCAR supported Resolution 5 because the bathymetric maps obtained through navigational surveys would contribute to the aforementioned scientific goals as well as to safe navigation.

(127) Chile introduced IP 9 *Seguridad para la Aeronavegación en la Península Antártica, Isla Rey Jorge*, underscoring the systems used by Chile for ensuring safety for air operations near King George Island.

(128) In relation to Chile's presentation of IP 9, Argentina reserved its position regarding certain contents of the document, in particular those contained in point 3 paragraph 5 and point 7 paragraph e).

(129) Bulgaria introduced IP 100 *The international collaboration in rescue action for evacuation of Bulgarian polar explorer from Antarctica*, informing the Meeting that during construction works on the Bulgarian Antarctic Base "St Kliment Ohridski" on Livingston Island the base commander sustained a serious injury. He was transported to the neighbouring Spanish Base "Juan Carlos I". From there, he was evacuated to King George Island and then to Punta Arenas. Bulgaria thanked Spain, Brazil and Chile for their help, stressing that the handling of the incident constitutes an example of excellent coordination and cooperation in the spirit of the Antarctic Treaty.

(130) Chile reminded Parties of the existence of the Combined Antarctic Naval Patrol of Argentina and Chile, devoted to provide assistance in search and rescue operations in the Antarctic Peninsula region. Argentina suggested that Bulgaria inform COMNAP of its experiences, as they might be of use to other Parties.

(131) Germany introduced IP 114 *Helicopter accident and air-borne medical evacuations during German summer season activities*. It noted that during the 2007/08 season the Alfred Wegener Institute for Marine and Polar Research (AWI) had asked the community for logistic support and assistance to perform two medical evacuations. The first medevac concerned a crew member on board *M/V Naja Arctica* in January 2008 (the ship was carrying cargo for the construction of the Neumayer Station III). The second evacuation was carried out after the crash of a helicopter from the *R/V Polarstern* on the Ekström Ice Shelf on 2 March 2008.

(132) Argentina thanked Germany for its presentation and informed the Meeting that the Argentine Antarctic Institute has carried out a research study on the psychological impacts which tragedies in Antarctica cause on the rest of the stations' staff.

(133) Germany also drew attention to the numerous problems related to the diversity of insurance companies from different countries Germany had to face when organising the evacuations. Many Parties agreed that solutions should be found for these cases.

(134) The Netherlands noted that in the crash described by Germany in its IP 114, two people lost their lives - the German pilot and a Dutch technician – and three others were injured. The Netherlands thanked Neumayer II station personnel, the crew of *Polarstern*, the Alfred Wegener Institute and the members of DROMLAN for their professional handling of the situation. The Netherlands noted this was an example of good international cooperation. Several Parties and IAATO passed on condolences to the Dutch and German programmes and thanked them for their sincerity.

(135) Several Parties noted the importance of maintaining an objective risk perception for those personnel engaged in field activities. It was noted that lessons could be learned from the accidents. Germany was asked to present details of the investigation to help Parties' awareness. IAATO said it would be pleased to work with Germany on flight policies, especially for helicopter flights.

(136) The Russian Federation expressed gratitude to the United States because of its collaboration in the evacuation of a Russian patient from Antarctica. US McMurdo

station provided medical assistance before transferring him to New Zealand (no paper was submitted on this issue).

(137) ASOC noted that Annex B of its IP 58 on shipping issues indicates the status of ratifications of relevant IMO instruments by ATCPs, showing that a number of Parties have not ratified various instruments, which is an important aspect of ensuring safety of life and avoiding marine pollution. ASOC urged all Parties to ratify the IMO instruments as quickly as possible.

(138) Chile introduced IP 108 *Actividades y estudios exploratorios relacionados con los aspectos glaciológicos, el cambio climático, cartografía de zonas de riesgo y seguridad de las operaciones en la zona de Base O'Higgins, Península Antártica*, describing Chile's risk area mapping project in the vicinity of Base O´Higgins.

(139) Ukraine introduced IP 129 *The international collaboration in the urgent action of the winterer substitution at the Station Vernadsky*. Ukraine thanked the United States for their help in evacuating the cook of Akademik Vernadsky Station in May 2008. Ukraine also thanked Poland for their assistance in the delivery of scientific samples from the station.

Joint Session

(140) The Working Groups of Tourism and Non-Governmental Activities and Safety and Operations met jointly to consider issues of common concern, including issues relating to tourism and shipping safety in Antarctica.

M/S Explorer Incident

(141) The Chair referred to SP 13 *Sinking of the M/S Explorer – Flag State Investigation*, noting that this synopsis had been provided by Liberia, but that Liberia was not present to introduce the paper.

(142) Many Parties noted their strong concern and dissatisfaction in considering what they viewed as the most serious incident in the Treaty Area in many years without the vessel's flag state present to address the matter. In their view this highlighted the problems of vessels flagged to non-Treaty parties operating in the Treaty Area. A Party noted that there is no standard procedure in the ATCM to invite third parties, such as Liberia, to participate in the ATCM.

(143) Canada, as the Party that authorised the tourism activity carried out by *M/S Explorer*, provided a verbal statement regarding the incident of *M/S Explorer* (included in Annex H, page 643). Canada also thanked Chile, Argentina and others involved in rescue and mitigation of the accident, and noted that a final investigation report is still forthcoming.

(144) ASOC noted that it had expected Canada to put forward not only operational information regarding the incident, but also information related to Madrid Protocol obligations. It noted the lack of information from Liberia on environmental issues stemming from the fuel spill.

(145) In response to the query from ASOC, IAATO noted that subsequent to the accident IAATO vessels monitored the area for any sign of oil pollution or marine debris. Some debris was collected shortly after the accident. IAATO vessels will continue to monitor the area for any further evidence of pollution in the future and report back to IAATO.

(146) Many Parties mentioned the amount of good fortune involved in making this a successful rescue, and that in other circumstances this could have been a major tragedy. IAATO thanked those parties who assisted with the response to the *M/S Explorer* incident. Initial response was provided by IAATO vessels, Chile, Argentina, Uruguay, Brazil, and later by the United Kingdom. The coordination and cooperation between all parties involved was appreciated.

(147) Chile introduced WP 42 *Participation of the Chilean Air and Maritime Search and Rescue Centres in the rescue of the Passenger Ship the Explorer and environmental mitigation of the accident in the Antarctic*. Chile noted the efforts made to reach the accident and the support to the passengers in Fildes Peninsula by Chile and Uruguay. Reference was made in the paper to the contributions of the Combined Antarctic Patrol between Chile and Argentina that monitored the oil spill during the Antarctic season. Chile proposed that, in order to improve the actions in similar emergency situations, any ship in the Antarctic area should regularly advise its geographical position.

(148) In addition, regarding WP 42, Argentina pointed out its reservations regarding certain concepts contained therein, in particular in point 1, paragraph 4 of the paper.

(149) Uruguay introduced IP 32 *Aspectos atinentes a la asistencia de los náufragos del M/S Explorer en la Antártida*, describing the Uruguayan assistance provided to passengers and crew of the *M/S Explorer* in the Antarctic.

(150) The Meeting expressed deep appreciation for Chile's and Argentina's actions in response to the accident, as well as their efforts to monitor and disperse the resulting pollution. Thanks were also made to Norway, the Norwegian vessel Nordnorge, which recovered the passengers and crew, and the other Parties that assisted the passengers and crew of *M/S Explorer*.

(151) The United Kingdom expressed thanks to all of the other parties who responded to the accident, in particular to Chile and Argentina. The United Kingdom also acknowledged the fact that it was IAATO's vessels which provided the immediate rescue of passengers and crew.

(152) It was noted that many factors, including the proximity of other vessels, contributed to the fact that there was no loss of life. In the view of some Parties, it was too early to draw any conclusion on how the accident had occurred, pending the final report of the investigation by the flag state. Other Parties stated that, in their view, it was appropriate to discuss reports and to consider any information that those involved in the rescue had put forward.

(153) Argentina noted, with respect to its SAR responsibilities in the area of the incident, that it assisted with early radio communications, with coordination of search and

rescue and with monitoring of the oil spill, in particular through preliminary environmental assessments carried out by way of periodic overflights in the location of the wreck and the on-site monitoring activities undertaken by an Argentine Navy vessel, as mentioned in IP 130.

(154) The United Kingdom introduced IP 52 *Report of main engine failure of F/V Argos Georgia in the Ross Sea on 24 December 2007*. It noted that the incident was resolved without human or environmental impacts. New Zealand noted the incident had some interesting features. New Zealand noted that the vessel did not issue a distress call and had not been considered to be in a distress situation, despite being without power for a lengthy period in heavy sea ice conditions. The UK emphasized that the vessel had acted appropriately as at no stage had it been in a distress situation, and adequate contingency plans and measures had been put in place. New Zealand and the United Kingdom acknowledged that the US Air Force delivered spare parts to the ship.

(155) ASOC noted that Annex VI on Liability is not yet in force and asked how the Annex would apply to the Liberian-flagged vessel. One party noted that a significant percentage of flagged vessels are to non-ATCPs. Other parties noted that Annex VI would cover operators from ATCPs even when they are operating non-ATCP flagged vessels.

General Safety Issues

(156) COMNAP presented IP 99 *Search and Rescue in the Antarctic*, describing arrangements in place and what could be improved. It also included details of a workshop *Towards Better Search and Rescue in the Antarctic* to be held in August 2008 in Valparaiso, Chile. It will bring together Rescue Coordination Centres (RCCs) and National Antarctic Programs. The report from the workshop will be forwarded to the ATCM. Parties thanked COMNAP for its clear presentation and thanked those countries with RCC responsibilities in the Antarctic.

(157) IAATO presented IP 81 *Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations, Safety and Related Issues*, the report of a meeting which was held following the loss of the *M/S Explorer*. It noted that one of the outcomes was the development of a suite of information to share with Maritime Rescue Coordination Centres (MRCCs) before each season, including a coordinated vessel tracking system. IAATO expressed its thanks to the Australian RCC for its assistance.

(158) New Zealand introduced WP 20 *Maritime search and rescue incidents in the Antarctic Treaty area: the Role of Rescue Coordination Centres*. The paper reported on two "table-top" Search and Rescue (SAR) exercises, based on the scenario of an incident involving a tourist vessel carrying 458 persons grounding in the Balleny Islands archipelago with deteriorating weather conditions. New Zealand stressed that tourist expeditions should understand the very limited government assets that could be made available for responding to a SAR incident in the Ross Sea. The paper also referred to the IMO's guidance for passenger ships operating in areas remote from SAR

facilities, which suggested that companies should keep the relevant MRCC informed as to the ship's position and intentions while operating in a remote area.

(159) New Zealand noted that having up to date information would enable an MRCC to directly contact vessels known to be in the area of an incident, achieving a quicker result. New Zealand therefore proposed a Resolution that, in recognising the important role of the five MRCCs with Search and Rescue Regions in the Antarctic Treaty Area in coordinating responses to SAR incidents, recommended regular vessel position reporting to MRCCs while within the Antarctic Treaty area.

(160) Parties welcomed this paper, which was widely supported, recognizing the important role of MRCCs. Following discussion on the various issues involved, the Meeting agreed to adopt Resolution 6 (2008) *Enhancing the role of Maritime Rescue Coordination Centres with Search and Rescue Regions in the Antarctic Treaty Area* (see Annex C, page 385).

(161) France introduced WP 33 *Managing human and environmental risks in Antarctica*, which examines the existing mechanisms for managing human and environmental incidents in Antarctica and considers lines of thought in order to improve risk management in the Antarctic Treaty area.

(162) ASOC thanked France for its paper, noting that it identifies a number of important gaps for Parties to consider, and suggested that some of the recommendations be carried forward through the ICG on vessels. Norway noted that the ICG could do so.

(163) Chile introduced IP 8 *Rules governing ships in the Antarctic*, and emphasised the standard requirements imposed upon the captains of the vessels navigating in Antarctica, in particular the course on operation in Antarctic waters, which is held in Valparaiso every year and is open to every Party.

(164) While Argentina expressed reservations with respect to certain contents of IP 8, it supported the recommendation to establish an obligation for any vessels that navigate in Antarctica to have a captain and first officer duly knowledgeable to navigate in ice regions.

(165) Norway introduced IP 115 *Passenger Ship Safety - Development of statutory instruments over time and key requirements to vessels as function of age and size*, and highlighted in particular the seven conclusions as pertinent background for future work. Parties welcomed the paper and the view was expressed that it provided relevant information.

(166) The following papers were not introduced and were taken as read:

- IP 121 *The Fram incident* (Norway)
- IP 11 *Background to the pollution incident caused by the sinking of the M/S Explorer* (Chile)

Item 10: The International Polar Year 2007-08

(167) SCAR introduced IP 59 *International Polar Year 2007-08 Planning Document: 2008 and Beyond*, and reminded Parties that observing systems to provide the information required to understand and be able to forecast variability and change were expected to be a key legacy of the IPY. Resolution 3 (2007) called for Parties to maintain and extend the appropriate systems to capture this information through long-term monitoring and sustained environmental observation.

(168) The Russian Federation presented IP 46 *Preliminary results of the Russian studies under the IPY Programme in 2007 and during the season 2007/08*, and noted that 24 field projects were carried out in 2007 in the Antarctic. Russia stated that research institutes from 23 Parties participated in the "Comprehensive Meteorological dataset of active IPY Antarctic measurement phase for Scientific and Applied Studies" (COMPASS) and that by the end of the IPY all the data from the COMPASS project would be made available and shared among the Parties involved.

(169) ASOC drew on the discussion of environmental impact of the IPY raised in IP 59 and pointed out that a thorough assessment of the cumulative impacts of IPY activities that have taken place is now possible and needed. It would not change the environmental footprint of the IPY but would advance the consideration of cumulative impacts resulting from Antarctic operations.

(170) Romania introduced IP 65 rev.1 *IPY 2007-08. The Results of the Polar Research Workshop - The European Polar Research Icebreaker Aurora Borealis – FP7 Project, The 2nd International Symposium of Polar Scientific Research*. Romania described a number of projects related to the abovementioned workshop and noted that there were participants from 10 countries.

(171) China made a brief introduction about the Chinese IPY Programme and the PANDA Programme.

(172) Spain presented an outline of their significant effort made during IPY that can be summarised in five Arctic, ten Antarctic, three bipolar and one sub-polar project. Ten of them were performed with Spanish logistics and infrastructure.

(173) India briefly introduced IP 128 *Indian IPY Activities*, which included details on their scientific projects, papers and their outreach programmes in relation to the IPY.

(174) Other Information Papers submitted under this Agenda Item included:

- IP 88 *Antarctic Treaty Summit: Science-Policy Interactions in International Governance* (IPY-IPO)
- IP 103 *Cooperación internacional a través de actividades científicas argentinas y el Año Polar Internacional* (Argentina)
- IP 111 *International Polar Year - Census of Antarctic Marine Life (IPY CAML) New Zealand Ross Sea Marine Research Voyage* (New Zealand)
- IP 113 *International Polar Year – Education and Outreach in New Zealand* (New Zealand)

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

Overview of the Antarctic Tourist Activity in the 2007/08 Season

(175) IAATO presented IP 85 *IAATO Overview of Antarctic Tourism: 2007-08 Antarctic Season and the Preliminary Estimates for 2008-2009 Antarctic Season* and IP 19 *Chairman's Report from the Miami Meeting (March 17-19, 2008) on Antarctic Tourism*. IP 85 contained a report of known tour operators, the number of departures, names of vessels and aircraft, registry and activities conducted throughout the Antarctic summer season. Growth trends were noted for both ship-borne and air-land-based tourism. While tourism has increased during the 2007-08 season, IAATO estimated that the overall numbers of tourists will decrease during the 2008-09 season because, *inter alia*, of the withdrawal of one ship. This information is collected from operator end of season reports and the ATCM agreed Post Visit Report Forms. Following the Antarctic season, these forms are loaded into the tourism database and generally in August of each year additional tourism statistics are loaded on to the IAATO website for general access.

(176) IAATO convened a meeting in Miami to address the future of tourism and the challenges for stakeholders. The meeting was attended by nine Antarctic Treaty Parties, IAATO companies, ASOC and invited experts. IAATO felt that the summary and conclusions of the Miami meeting could be relevant to the ATCM's discussion on tourism. Topics discussed at that meeting included: a strategic approach to Antarctic tourism, a regulatory framework to ensure no more than minor or transitory impacts in line with measures agreed by the ATCM, ship-borne and land based tourism, and transportation by tourist vessels of staff from national programmes. IAATO asked Parties to provide data on yacht activities for its database.

(177) Parties thanked IAATO for this overview, noting its value to the ATCM and its deliberations on tourism issues. Some Parties noted that although IAATO predicted a dip in tourist activity for the coming year, in general the trend had been an increase in tourist activity. Many Parties were of the view that the ATCM should take a more proactive approach to tourism management. Japan supported the concept of taking a proactive approach based on anticipation of tourism activities. Some Parties suggested that a mechanism be developed through the Secretariat to compile tourism statistics, stressing that the ATCM should not have to rely on an industry organization for such information. Argentina pointed out the importance of operators making Post-Visit Reports readily available to Parties when calling at port every time they return from Antarctica.

(178) ASOC noted that the IAATO papers indicated an increasing trend in passengers, including the number of passengers on board large ships that did not land, as well as the increase in the diversity of activities undertaken by tourists in Antarctica during the last decade. It considered Antarctic tourism and the management of these activities to be increasingly complex, and that the ATCM needed to take a range of actions in this regard.

(179) Welcoming the contributions of IAATO to the ATCM, the Chair noted that this was Mrs Denise Landau's final meeting as IAATO representative, and thanked her for her contribution over the years.

Vision/Directions for Antarctic Tourism Policy

(180) The United Kingdom presented WP 51 *Developing a Strategic Vision of Antarctic Tourism for the Next Decade*, and noted that Measures and Resolutions agreed during recent years were largely directed at the conduct of tourism within Antarctica, and that there had been little discussion about whether Parties should place greater controls on the overall size, geographic limits or diversity of tourism activities in Antarctica. The UK proposed that the ATCM take a proactive approach through the development of a strategic vision of tourism. The United Kingdom had discussed options for developing such a strategy with government, NGOs and industry, and found general support for the overall concept. The UK proposed that development of the vision should include general principles for the overall development of tourism in Antarctica and should aim to articulate, as far as was practicable, a more precise volume and form of tourism that Parties would wish to see in the future. Essentially, the aim of the vision would be to clarify:

- what the ATCM expected tourism activities in Antarctica to look like – for example, in terms of volume, geographic and seasonal limits, and diversity;
- how tourism in Antarctica would be managed in order to deliver such a vision;
- how information about tourism activities would be collected, analysed and reported; and
- how the Antarctic environment would be monitored to identify any potential impacts of tourism activities.

(181) The UK proposed that such a vision, as a non-mandatory and aspirational tool, be developed in time for ATCM XXXII to form part of the celebrations of the 50th Anniversary of the signing of the Antarctic Treaty.

(182) The Meeting thanked the United Kingdom for its proposal and welcomed the elements identified in the paper as a good starting point, with the understanding that all the elements were still open for discussion.

(183) Some Parties expressed the view that science should be the basis for informed thinking and decisions when addressing the issue of risk. Many Parties took the view that a precautionary approach was necessary especially when information was limited.

(184) One party noted that, when considering management tools such as limitations, it was important to consider what management objectives were being pursued.

(185) Some Parties noted that there were differences of view on the definition of a "minor or transitory impact", while others noted the difficulty in achieving clarity on this. Some Parties considered one of the key questions to be addressed is related to which values the ATCM is trying to protect.

(186) Some Parties were of the view that a strategy should not take a prescriptive approach with regard to tourism, and should focus on basic principles. Some Parties also suggested that Parties should consider additional issues, such as the benefits of Antarctic tourism and lessons that may be learned from other protected areas around the world, including their management. Some Parties said that tourism regulation should be carried out consistent with values contained in the Treaty and the Protocol including the aesthetic and wilderness values of Antarctica.

(187) Australia noted that the nature of the experiences of visitors was an important consideration, as well as the relationship between visitor experiences and the values for which Antarctica is protected. Australia also reflected that issues relating to access and participation by tourists and companies from the Treaty Parties might also need to be considered.

(188) Argentina encouraged Parties to develop concrete proposals on specific aspects related to tourism. It also pointed out that scientific information on impacts associated with tourism might take considerable time to be produced and this should not prevent Parties from proposing measures to regulate tourism activities. Some Parties supported these proposals.

(189) Several Parties noted that tourist activities could conflict with science. It was noted that science and science support activities should take precedence over tourism. Other Parties stated that tourism was a legitimate activity under the Treaty and the question was how to balance the legitimate activities in Antarctica taking also into account their impact on the environment and the priorities defined in the Treaty and the Protocol.

(190) Some Parties, noting the increasing complexity of tourist activities in Antarctica, advocated the early development of a "tourism Annex" to the Protocol and a codification of the regulations adopted by the ATCM on this subject. Some Parties expressed the view that a "tourism annex" is not necessary at this point in time, and that any codifications of regulations should not affect the existing flexibility of the Antarctic Treaty System.

(191) Several Parties asserted that the possible cumulative impacts of tourism should be considered further. Some Parties considered that this was particularly important in those places where a greater concentration of tourism was occurring.

(192) The United Kingdom offered to receive Parties' proposals for elements for a strategy on tourism intersessionally (before the end of November), with a view to presenting a paper highlighting areas of commonality at the next ATCM. Parties welcomed this approach.

(193) The Russian Federation introduced WP 50 *Proposals for Regulating the Adventure Tourism and Non-Governmental Activity in the Antarctic*. It outlined several complexities associated with tourist activity in Antarctica, noting that in its opinion, issues related to adventure tourism and non-governmental expeditions in the Antarctic had become one of the most important current problems for the ATCM to address. In particular, Russia noted the differences in national legislation implementing the

Protocol, which in its view could allow the evasion of national procedures by groups or individuals.

(194) Russia informed the Meeting of vandalism at Leningradskaya station. Although the station had been visited several times in recent years, no reports of the visits were submitted to Russia. It stressed the need to develop a new legally binding "code" regulating tourism and non-governmental activity in the Antarctic. It concluded that, as proposed by the United Kingdom, the development of a new strategy would be an important first step.

(195) Several Parties noted the need to ensure that existing measures were fully implemented, in particular Measure 4 (2004) and Resolution 4 (2004). Some Parties also highlighted the requirement for advance notification and clarified that tours organized or conducted from a State Party are subject to the legislation of that state party. Japan stated that it was difficult to implement Measure 4 (2004) under its domestic law.

(196) IAATO noted that unregulated tourism was of great concern and could harm IAATO's responsible operators.

(197) The United States introduced WP 43 *Further Development of Antarctic Tourism Policies*, proposing issues for action by the ATCM. The United States recalled that the ATCM made progress last year by the adoption of Resolutions 4 (2007) and 5 (2007) at ATCM XXX. It observed that the sinking of the *M/S Explorer* was a wake-up call, and noted that it was fortunate that lives were not lost. In its view, the ATCM had a responsibility to treat tourism policy as a priority, particularly with regard to safety and protection of the environment.

(198) The United States proposed that the ATCM request the International Maritime Organization to review the existing guidelines for tendering passengers between vessels and shore and for Search and Rescue, and to consider whether additional equipment was necessary on life boats. The United States also proposed that Parties continue work on the risk analysis through the intersessional contact group, with a view to identifying additional issues to be referred to expert bodies, and indicated that there was a need to improve navigational data and information on areas with heaviest passenger vessel traffic. In order to assist the ATCM in developing tourism policies, it suggested the ATCM invite the CEP to review the ways in which data could be collected on the impacts of tourist activities in Antarctica.

(199) The United States also noted the need to build on past efforts and to prioritize monitoring and best practices, including with regard to cumulative impacts. As part of a larger review, it suggested that Parties may wish to consider in the CEP sharing data on routine discharges from passenger vessel operations. It also emphasized the importance of advance notification. The United States also noted that robust implementation of the Protocol could go a long way in addressing pending tourism issues.

(200) Parties welcomed the United States' paper, noting the reference to the recent accident of the *M/S Explorer* which could have ended in more of a tragedy. Parties considered that better regulation of tourist activities was a crucial issue.

(201) Regarding the *M/S Explorer* incident, Argentina underscored that it would be highly desirable that all tourist vessels, including IAATO member vessels, carry an Ice Master, with sufficient knowledge to navigate in Antarctic waters.

(202) ASOC thanked Argentina and Chile for their actions towards assessing and mitigating the environmental impacts that resulted from the sinking of the *M/S Explorer* and expressed concern about possible environmental impacts from the fuel that remained in the wreck.

(203) The US proposed that the ATCM ask the CEP to work on a series of issues related to environmental impacts of tourism activities. The Meeting welcomed the advice from the CEP that the Committee had identified as a high priority in its five-year work plan consideration of the environmental impacts of tourism and non-governmental activities. The Meeting requested the CEP Chair to convey to Committee Members its interest in the results of this and other relevant work, and looked forward to progress reports at upcoming ATCMs. It was noted that the work of the CEP would be conducted in parallel with, and without prejudice to, continuing ATCM work on tourism matters.

(204) France introduced WP 34 *A Mechanism for Centralising Tourism and Non-governmental Activity Declarations and Authorization Requests Suitable for Taking Cumulative Impacts into Account*. It noted that although the impact of a single tourist activity in a given site could be assessed as less than minor or transitory, there was a need to look at the cumulative impact resulting from visits by several operators to a given site. France proposed a complementary mechanism for centralising tourism and non-governmental activity authorization to allow national competent authorities to access these data in real time prior to each season, with the intention of improving consideration of possible cumulative environmental impacts.

(205) Several Parties welcomed this proposal, while others expressed some concern about the feasibility of implementing it in practical terms, given the different domestic reporting requirements.

(206) Parties also recalled that the issue of cumulative impacts of tourism had been raised several times in both the CEP and the ATCM. Others noted the need to consider the cumulative impacts of tourism jointly with the total cumulative impacts produced in Antarctica by all human activities.

(207) Some Parties recalled other tools available to the ATCM, including past work addressing cumulative environmental impacts, site guidelines, and monitoring programmes, as mechanisms to reduce the possible cumulative impact associated with tourist activities.

(208) Argentina concurred that the issue of cumulative impact was very important. It also supported the strengthening of information exchange and added that tour operators should provide information both when travelling to Antarctica and when calling at port on returning.

(209) Argentina indicated that it reserved its right to establish, at any of its stations, infrastructure for land-based tourism, with lodging capacities, similar to presently

existing ones, which are not deemed to substantially contribute to a long term degradation of the Antarctic environment and its dependent and associated ecosystems. It would otherwise be considered as discriminatory. It stated that tourism is a legal activity and should be carried out in a responsible manner. Argentina supported by other Parties further underscored that in case of conflicting uses, scientific and logistics associated activities should be prioritized over any other use.

(210) France indicated that it was willing to receive comments from Parties on its proposal intersessionally, and the Parties welcomed this approach.

(211) ASOC presented IP 41 *A Decade of Antarctic tourism: Status, change, and actions needed* summarizing tourism trends, concerns, and proposals for action. It noted that tourism over the past decade had been characterized by increases in total number and diversification of activities, and that the current management regime includes local and technical aspects, voluntary guidelines, and Measure 4 (2004), which had not yet become effective. The paper summarized these instruments, many of which had been in reaction to tourism developments. ASOC noted that tourism could become the predominant activity in Antarctica, and result in erosion of values in the Treaty and Protocol.

(212) ASOC noted that a range of actions is needed, including development of a strategic vision as a first priority, as well as development of new instruments and improvement in implementation of existing instruments. It was its view that a resolution concerning the ATCM's views on the growth of tourism would be a concrete action that could be taken at this meeting. It also noted the importance of working with the IMO on shipping guidelines and taking action to prevent the establishment of new land-based tourism facilities. ASOC further suggested that the ATCM could build on existing tools, in particular ASMAs, site guidelines, and the environmental impact assessment process.

(213) Parties thanked ASOC for its useful and thought-provoking paper, noting this was an excellent synthesis of the status of the tourism issues in the Treaty area. One Party noted that it would be useful to clarify definitions of terms such as "government sponsored tourism", "commercial tourism", and "non-commercial tourism".

(214) Parties discussed the reference in the ASOC paper to World Park Antarctica. Several Parties noted a variety of views on the management and role of "parks" vs. "reserves". Some Parties recalled that under the Protocol Antarctica was designated a natural reserve devoted to peace and science and that in all cases, tourism needed to be consistent with environmental and aesthetic values in Antarctica and with the scope and purposes of the Treaty and the Protocol.

(215) Chile thanked ASOC for the list of infrastructures already existent in Antarctica. Another Party requested clarification from Parties listed in IP 41 as the competent authorities for land-based tourism concerning certain descriptions in the report. Parties clarified their positions as follows:

- Chile noted that the Air Force Hotel was currently used by staff from national programmes, not tourists. Chile noted that it had determined state-sponsored tourism at their stations would be unconstitutional and illegal.

- Uruguay clarified that all of their work in Antarctica is currently related to the International Polar Year, and that its land-based facilities are not currently in use for tourism. The visitors programme at BCAA was implemented on a small scale and like a non-commercial activity.
- The United Kingdom noted that it had undertaken an investigation of White Desert. It found that this company markets space already in use under other authorized programmes through other Parties. The United Kingdom also noted that Port Lockroy was a former base and was now a living museum, and a study location for human impacts.
- Argentina clarified that the planned museum referenced to Argentina's Army was actually under management of Argentina's national programme.
- The United States noted that the ALE operation at Patriot Hills was subject to US regulations, had undergone a thorough environmental impact assessment, and that it is a temporary field camp, which was subject to advance notification requirements.

(216) New Zealand coordinated a draft Resolution on the "Unending Increase and Diversification of Tourism in the Antarctic Treaty area". Many Parties agreed on the need for the ATCM to address the uncontrolled growth of tourism in the Antarctic Treaty area, which was neither desirable nor necessary, and supported a proposal by the United Kingdom to undertake work on a proactive strategy on the future of tourism in the Antarctic Treaty area.

(217) Some Parties viewed the draft resolution as a proactive step in addressing management of Antarctic tourism.

(218) Several Parties sought clarification on what terms such as "increase" and "diversification" were intended to address, suggesting these terms were ambiguous. Several Parties supported the proposed resolution coordinated by New Zealand in its initial version. Some Parties raised concerns that taking a position against "unending tourism" could imply that Parties already now were willing to set limits on tourism, and suggested instead referring to "unmanaged" tourism. Japan stated that the environmental impact of these activities should be the determinant factor to declare a policy on tourism in Antarctica.

(219) Consensus could not be reached on the proposed resolution. However, it was noted that the concepts discussed in relation to this proposal were applicable to the informal consultations on development of a strategic vision for Antarctic tourism.

Passenger Ship Issues

(220) Norway introduced WP 36 *Report of the Intersessional Contact Group on Issues Concerning Passenger Ships Operating in Antarctic Waters*, which detailed the outcomes of discussions in the ICG established at ATCM XXX. It reported that several Parties and experts had engaged actively in the ICG and noted that the ICG's focus had been on issues potentially endangering human life and the Antarctic

environment as result of maritime accidents. Norway clarified that the ICG had not focused on risks to property.

(221) Norway reported that there was consensus among ICG participants that risk-based decision-making should guide the identification of issues on which the ATCM should take the lead, and those on which it should eventually engage maritime experts at IMO and elsewhere. It noted the ICG had made progress on identifying important vessel hazards and risks and the mitigation of risks in the event of a maritime accident. The report considered that an extension of the terms of reference would enable the ICG to begin exploring possible specific proposals for addressing priority hazards and risks and referring appropriate issues to expert bodies.

(222) The ICG recommended that Parties work actively in IMO to update and extend to Antarctica the Guidelines for Ships Operating in Arctic Ice-covered Waters, to assess whether the IMO's Enhanced Contingency Planning Guidance for Passenger Ships Operating in Areas Remote from SAR Facilities could be further refined for Antarctic operations, and to ensure a rapid amendment of MARPOL to prohibit the use and carriage of Heavy Fuel Oil (HFO) as fuel on ships in the Antarctic area. The group also recommended that the ATCM should task the CEP or other appropriate bodies to examine the environmental impact of routine passenger vessel operations.

(223) Parties thanked Norway for chairing the ICG and welcomed the ICG report. Some Parties noted that the IMO was already looking at various instruments in accordance with past requests from the ATCM. Several Parties noted that it was important for the ATCM to agree a clear understanding of which issues are for the ATCM to determine and when and how it should relate to the IMO, and that it was crucial for representatives of ATCPs to collaborate with their domestic colleagues representing their Parties at the IMO.

(224) Parties expressed support for the ICG recommendations and follow up in a continued ICG. Several Parties noted that IMO involvement is crucial because of its experience in shipping, but felt that some risks needed to be more fully discussed in the ATCM, and that some issues should be addressed only by the ATCM.

(225) The United States highlighted its proposals in WP 43 to submit questions on tender operations and search and rescue to the IMO. The United States proposed a draft Decision to refer these matters to the IMO.

(226) Some Parties further noted that, prior to referring additional matters to the IMO, the ATCM should undertake additional analysis to identify what measures have already been agreed and the extent to which these measures have been implemented, in order to identify areas where the IMO could usefully assist. A clear indication of what the Parties would like the IMO to achieve in any referral to the IMO would be desirable.

(227) New Zealand offered to host in Wellington an Antarctic Treaty Meeting of Experts on the management of ship-borne tourism in the Antarctic Treaty area in the second half of 2009. The agenda could include many of the issues covered by the ICG, as well as Search and Rescue. It noted that the last such Meeting of Experts in 2000

considered guidelines for Antarctic shipping which were still being discussed in IMO. Parties welcomed this offer and noted that the ICG could provide a useful input into this meeting. The terms of reference for this Meeting will be discussed at ATCM XXXII.

(228) The Meeting decided to extend terms of reference for the ICG and explicitly focus its work on those issues related to preventing and mitigating the effects of a maritime incident. The Meeting asked the ICG to continue and refine its process of risk analysis to develop proposals for further discussion or action by the ATCM as appropriate, including possible recommendations for proposals for referral of appropriate issues to the IMO and/or other relevant bodies for their consideration.

(229) The Meeting also welcomed Norway's offer to continue to act as convener of the ICG.

(230) While consensus could not be reached on the US draft IMO-related Decision, the United States agreed with Norway that specific issues related to tendering operations and search and rescue could be considered in the context of the work by the ICG. Such issues included: the adequacy of safety and operational requirements for tendering passengers between vessels and shore, review of existing search and rescue guidelines, and consider action as to whether additional equipment aboard survival craft could be improved. The Meeting requested Parties, Observers and Experts to submit evidence relating to these issues to the ICG.

Tourist Vessels Flagged to Non-Parties

(231) New Zealand presented WP 22 *Implications of Tourist Vessels flagged to non-Parties for the effectiveness of the Antarctic Treaty System*, recalling consideration of this issue at the previous two ATCMs. According to Article 94 of the UN Convention on the Law of the Sea, the flag state has the duty to "effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag". New Zealand noted that if the Flag State was a Party to the Antarctic Treaty and its Protocol, it was bound by the obligations of those agreements. If the Flag State was not a Party and not bound by such obligations, there existed a significant gap in coverage, which had the potential to undermine the effectiveness of the Antarctic Treaty System. New Zealand outlined three such gaps:

- There was no obligation on non-Party Flag States to provide emergency response action under article 15 of the Protocol.
- In the case of a non-Party vessel, there was no obligation to enable an inspection under Article VII of the Antarctic Treaty.
- There was no obligation on non-Party vessels to enable an inspection under Article 14 of the Protocol.

(232) New Zealand also noted that figures provided by IAATO showed that approximately 40 percent of commercial tourist vessels operated by IAATO Members were flagged to countries that were neither Party to the Antarctic Treaty nor the Protocol, and that the average number of passengers per voyage was greater on non-Party vessels.

Recalling that during ATCM XXX the Meeting had agreed this was an issue of considerable concern, New Zealand suggested that Parties consider whether they should discourage the use of non-Party vessels in the Antarctic Treaty area, and how this might be done. New Zealand also expressed its concern at the paucity of information available from Liberia, the flag state of the *M/S Explorer*, which sank in November 2007.

(233) Parties welcomed the paper and several echoed New Zealand's concerns. Some Parties noted a need to examine means by which the ATCM could engage flag states of non-Party flagged vessels in future. In this context, Argentina expressed its views that by means of applying non-compliance procedures, in conformity with international law, flags of convenience could be persuaded to comply with the Protocol. The United Kingdom suggested that, in line with practice at CCAMLR, the ATCM could consider modifying its rules of procedure to allow invitations of non-Parties to the ATCM.

(234) It was suggested that the vessels operated by non-Parties are not necessarily unregulated. It was pointed out that in most cases involving a vessel flagged by a non-Party, the operator was regulated by a Party to the Protocol, and thus to that extent, the requirements of the Protocol applied to these expeditions. Some Parties noted that freedom of navigation needed to be considered.

Non-Governmental Land Based Infrastructures

(235) Germany introduced WP 6 *Environmentally Sound Tourism in the Antarctic Treaty Area* (co-sponsored by Germany and France), noting that there was a clear upward trend in tourism and that it was important that the ATCM become more proactive in anticipating trends, rather than reacting as had been the case for several years.

(236) Germany and France proposed that Parties should adopt a moratorium on permanent land-based tourist infrastructure until the ATCM agreed upon an overall strategy for environmentally sound tourism in the Antarctic Treaty Area.

(237) There was detailed discussion of the proposed draft Resolution attached to WP 6. Many Parties were supportive of the concepts addressed in the proposed resolution. Some Parties noted that the values of the Antarctic Treaty and the Protocol should be prioritized. Some Parties were of the view that this matter was addressed by Resolution 5 (2007) and that this Resolution prohibits, according to their interpretation, the establishment of hotels. Other Parties were concerned by the apparent gradual modification of Resolutions agreed in the past.

(238) Some Parties noted that Resolution 5 (2007) had already effectively addressed this matter and if the issue were to be revisited this should be done with the reference and within the framework of that Resolution. Chile added that the understanding underlying the above-mentioned Resolution pointed towards a prohibition rather than a moratorium. Argentina reminded that Resolutions do not have a legally binding character.

(239) Following the discussion in the plenary and the work of a Contact Group, Germany and France introduced a revised text which said in its operative part that the Parties discourage the establishment of hotels in the Antarctic Treaty Area in order to avoid any tourism activities which may substantially contribute to the long-term degradation of the Antarctic environment and its dependent and associated ecosystems. This wording was supported by many Parties. However, other Parties expressed concern that the draft Resolution as proposed may result in an implication contrary to its intention.

(240) Japan stressed that, even though Resolutions were non-binding, it takes the Resolutions seriously and therefore may only agree to the content that can be implemented domestically. Japan stated that, under the Treaty and the Protocol and their domestic legislation implementing them, its government could discourage activities, including activities related to tourism, only when they have adverse environmental effect. According to Japan, a facility called "hotel" may or may not have those effects.

(241) Although the Meeting did not reach consensus on this proposal, Germany thanked delegations for the positive exchange of views. Germany agreed to use this discussion as a basis for further consultations with Parties leading up to ATCM XXXII and indicated that it would contact Parties via e-mail.

(242) New Zealand presented WP 21 *Control of Permanent Land-Based Facilities in Antarctica* and recalled Resolution 5 (2007) which it had sponsored at ATCM XXX. New Zealand proposed that in order to limit the potential for disputes among the Contracting Parties in respect of jurisdiction in Antarctica in the face of the rapid expansion and diversification of tourism, the Parties should require all permanent land-based facilities which may be developed in Antarctica to be included within and under the control of a national Antarctic programme. The proposed Resolution would ensure all permanent facilities were covered under the jurisdictional framework provided in Article VIII of the Treaty. At the same time New Zealand made clear that for its part it did not consider the provision of facilities for tourism beyond humanitarian assistance and basic hospitality to be the proper purpose of a national Antarctic programme.

(243) Some Parties spoke in favor of the draft Resolution, recognizing the concerns about jurisdiction over infrastructure in Antarctica.

(244) Other Parties indicated they had reservations. Some Parties noted their concern that science should take precedence over tourism and did not agree that tourist activities should fall within the ambit of national programmes. India stated that the Resolution could lead to national programmes becoming overstretched by diverting resources from science to tourism. Several Parties indicated that they would be unable under their own domestic laws to incorporate private activities into their national programmes. Some Parties suggested that the Resolution would send a message encouraging or inviting the development of tourist infrastructure.

(245) New Zealand noted that the Resolution did not propose that any Party should incorporate tourism activities within its national programme. Where, however, Parties were providing tourist facilities at their research stations, they should accept

responsibility for those facilities. New Zealand nevertheless noted that the discussion indicated the time was not yet ripe for a decision on the matter and withdrew the draft Resolution. New Zealand indicated it would return to the matter at ATCM XXXII.

(246) The United States referred to IP 109 *Amundsen Scott South Pole Station, South Pole Antarctic Specially Managed Area (ASMA No. 5) First Year Management Report*. It noted that the section on NGO activities is relevant to these discussions. The United States reported on the steady increase in NGO visitor numbers in the past few years. The United States informed the Meeting that, due to the pressure on their science and operation activities, it can no longer support the current level of outreach activities such as station tours. They explained that they may institute an allocation system for South Pole Station visits, such as is done for Palmer Station. The US noted that it looks to advance notification as required under the Treaty to provide information on plans by non-governmental organizations to visit the station.

(247) IAATO presented IP 84 *Land-Based Tourism and the Development of Land-Based Tourism Infrastructure in Antarctica: An IAATO Perspective*, hoping that it would make a constructive and practical contribution to the discussion on land-based tourism. IAATO welcomed the comments from various Parties that referred to IP 84 in previous discussions.

(248) IAATO recalled that it had supported the adoption of Resolution 5 (2007) and noted that it was not currently interested in promoting or funding the construction of major facilities, such as hotel accommodations.

(249) Parties thanked IAATO for its useful paper. They expressed encouragement to non-IAATO operators to provide data on their operations to the ATCM.

(250) The Meeting thanked IAATO and ASOC for their information in IPs 41 and 84 identifying land-based facilities currently used to support and/or manage tourism.

(251) Japan would welcome IAATO and ASOC to come to ATCM XXXII with as much information as possible and an analysis of land-based facilities. Japan also requested all Parties involved to verify such information and to provide supplementary information.

Other Matters

(252) The Meeting took note of the following IPs submitted by IAATO:

- IP 81 *Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations, Safety and Related Issues*
- IP 82 *Update on the Antarctic Peninsula Landing Site Use and Site Guidelines*
- IP 83 *Regulation of Antarctic Tourism: A Marine Perspective*
- IP 86 *Report of the International Association of Antarctica Tour Operators 2007-08 Under Article III (2) of the Antarctic Treaty*

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

(253) Argentina presented WP 54 *Proposal to revise the inspection checklists contained in Resolution 5 (1995)*. As a first step Argentina proposed establishing an Intersessional Contact Group (ICG) to review List A *Permanent Antarctic Stations and Associated Installations* appended to Resolution 5 (1995).

(254) The ATCM welcomed the proposal and adopted Resolution 4 (2008). The Meeting decided to establish, with support from the Secretariat, an open-ended web-based ICG to review Checklist A *Permanent Antarctic Stations and Associated Installations* appended to Resolution 5 (1995) as the first step towards reviewing all the checklists included in this Resolution. Argentina agreed to be the convenor of the ICG and to report progress to ATCM XXXII. The ATCM invited interested Non-Consultative Parties, Observers and Experts to submit information documents to the ICG.

(255) The following terms of reference were agreed for this group:

- Identify which questions in Checklist A seek information that should already be provided by Parties to the Antarctic Treaty Information Exchange System;
- Consider the possible updating of the Checklist by rewording these questions and/or by adding new ones to enable the Checklist to facilitate the inspection of permanent Antarctic stations and associated installations, and suggest which questions might more appropriately be answered by direct observation and which questions could be preliminarily answered by consulting the documents and information regarding the base in question.
- Submit a report with a draft revised checklist to the next ATCM, mindful that questions should not be deleted if the information sought is currently unavailable in other databases or information exchanges, and that the report should not preclude inspection teams from asking questions in addition to those contained in any checklist.

(256) Japan informed the Meeting that it was in the process of preparing its first inspection. It welcomed inspection reports from Parties that have conducted inspections already as a means of aiding its preparation process. Norway noted that it was also considering carrying out an inspection in the near future.

(257) The Meeting agreed that a record of inspections constitutes important background information for those Parties planning future inspections. The Meeting instructed the Secretariat to make available and keep updated on its website a list of inspections and, for recent inspections where reports were available, they should be linked to the list. Argentina stated that it was also important for reports made by Parties whose stations have been inspected to also be placed on the website. Parties agreed to provide information to the Secretariat about their inspections.

Item 13: Science Issues, Including Climate-related Research, Scientific Co-operation and Facilitation

(258) SCAR presented WP 10 rev. 1 *Status of the regional, Antarctic population of southern giant petrel - Progress*. SCAR noted that in-depth discussion of the document had taken place at CEP XI.

Climate Change

(259) Norway briefly introduced WP 35 *Antarctic Climate Change Issues*, a paper submitted jointly with the United Kingdom, and highlighted the six recommendations at the end of the paper. Several Parties recognized the work done by SCAR regarding the scientific issues related to climate change as well as the work by COMNAP through the Energy Management Network, ENMANET. In reference to a proposed Meeting of Experts, the United Kingdom noted that it would coordinate with Norway to take forward work towards a possible meeting in early 2010, after a report from SCAR. Parties also noted the importance of climate change research in the Antarctic.

(260) ASOC presented IP 56 *Impacts of Climate Change on Antarctic Ecosystems*. It noted that discussion on climate change had brought endorsements of best energy management practices, improved energy efficiency and shared logistics. ASOC expressed its hope that the ATCM would seize the moment to move these initiatives forward, not only to address climate change but also to increase efficiency and reduce fuel costs of Antarctic operations.

(261) Some Parties believed that emissions' calculations could be a useful tool in the Antarctic and were therefore of high priority. Many Parties observed that emissions in Antarctica are insignificant in a global context. Some Parties noted that emissions at a local scale in Antarctica are insignificant with respect to Climate Change, and stressed the importance of research including sustained scientific monitoring to understand trends as supported by Resolution 3 (2007). Many Parties believed that further action should be taken to reduce emissions in Antarctica, and that this should be given high priority. COMNAP and several Parties explained that energy saving procedures and alternative energy were in place in many stations.

(262) Many Parties stressed that reduction in greenhouse emissions from Antarctic operations was important as a best practice and to set a good example.

(263) The Russian Federation introduced IP 47 *Variability of Antarctic climate*, stressing the importance of climate modelling to assess climate change. The Russian Arctic and Antarctic Research Institute of St Petersburg conducted research in its Antarctic stations with support from SCAR's READER project.

(264) SCAR presented IP 62 *Antarctic Climate Change and the Environment: A Progress Report*, and drew attention to 8 statistically significant changes in the Antarctic that had taken place since 1950 and the present and that seemed to be caused by global warming. In some instances these were associated with extreme stratospheric cooling

caused by the ozone hole; both the warming and the stratospheric cooling were anthropogenic.

(265) Bulgaria introduced IP 104 *Permafrost and Climate Change in the Maritime Antarctic (PERMANTAR) - an Excellent Example for International Collaboration*, submitted together with Spain. Bulgaria pointed out that this project contributed to the global scientific effort to bridge the gap in the knowledge of Antarctic permafrost characteristics, sensitivity and implications for climate change. The project is strongly interdisciplinary in nature and there is international collaboration between Spain, Bulgaria, Portugal, Chile and Argentina.

(266) Spain mentioned a project on *Atmospheric-Sea interactions by Organic Carbon and Contaminants: The implication for Climate Change and Polar Ecosystems* (ATOS). It is connected to a Canadian Project: *Atmospheric inputs of mercury to the polar ocean: rates, significance and outlook* (ATMER). ATOS, which is a bipolar project, aims at investigating the significant increasing role of sea-air exchanges of materials and contaminants in the polar seas. ATOS will advance current knowledge on the importance of sea-air interactions, and the evolution of complex polar ecosystems. It will also provide a basis to record the effects of expected reductions of sea ice in the polar regions and near ocean areas, on the contamination of the complex ecosystems.

Scientific Co-operation and Facilitation

(267) The Republic of Korea introduced IP 37 *Collaborations with Other Parties in Science and Related Activities during 2007/08*. Among other projects, Korea mentioned its joint work with China and Japan on ITASE (International Trans-Antarctic Scientific Expedition) and the Hydro Acoustic Monitoring Project in the Bransfield Strait, carried out together with the United States.

(268) Romania introduced IP 64 *Grove Mountains, East Antarctica - between scientific research and environmental protection*, IP 66 rev.1 *Romanian scientific activities in polar areas in cooperation with US/National Science Foundation and Denmark/ Copenhagen University - Greenland 2008* and IP 67 *Romania application for SCAR admission*. Romania thanked China and the Russian Federation for their support and transport during the Romanian Antarctic scientific activities 2002-07.

(269) Japan introduced IP 78 *Highlights from Japanese Antarctic Research Expeditions (JARE) in 2007–08*, describing its study of the ozone hole at Syowa Station, the Japanese-Swedish Antarctic Expedition (JASE) 2007–08 and the Geological Survey conducted in the Sør Rondane Mountains.

(270) Japan also briefly presented IP 76 *Asian Forum for Polar Sciences (AFoPS) Report to XXXI ATCM*, describing the outcome of the VII and VIII AFoPS Delegates Meeting as well as other related activities. Detailed information can be found at *www.afops.org*.

(271) China noted that it will be the chair country of AFPS during 2009-10 and that China would like to continue to enhance the cooperation in the collaboration with Asian countries in scientific and logistic aspects.

(272) Australia presented IP 29 *Australia's Antarctic Scientific Research Programme 2007/08*, noting that the major field programmes conducted by Australia in the 2007/08 Antarctic season occurred principally in the Southern Ocean.

(273) Venezuela presented IP 132 *Primera Expedición Científica Venezolana al Continente Antártico* and IP 133 *Actividades de Hidrografía y Cartografiado de Venezuela en la Antártida*. It described its first expedition to Antarctica, carried out with support from Uruguay and in accordance with the provisions of the Madrid Protocol. Venezuela also informed the Meeting that it was preparing its Antarctic Programme.

(274) Other papers submitted under this agenda item were:

- WP 10 rev. 1 *Status of the Regional, Antarctic Population of the Southern Giant Petrel – Progress* (SCAR)
- IP 23 *Australia's Antarctic and Southern Ocean Climate Science* (Australia)
- IP 40 *Finland's Antarctic Research Strategy* (Finland)
- IP 48 *Report on scientific studies in the Antarctic at the second stage of the Subprogramme "Study and research of the Antarctic" in 2003-07* (Russian Federation)
- IP 50 *Antarctic Peninsula: rapid warming in a pristine environment* (United Kingdom)
- IP 95 *Scientific Research of Peru in the period 2007-08* (Summer Season) (Peru)
- IP 10 *Visit by the UN Secretary General to the Antarctic* (Chile)
- IP 69 *The Czech activities on the James Ross Island in austral summer 2007/08* (Czech Republic)
- IP 72 *Report on the Research Expedition of the Czech Geological Survey to Antarctica, 2008* (Czech Republic)
- IP 73 *India's Antarctic Science Programme 2007-08* (India)

The SCAR Lecture

(275) A lecture on space weather and its effects was organised by SCAR and submitted as IP 60. The lecture was given by Dr Louis J. Lanzerotti. An abstract is in Annex H, in page 645 of this report. The slides from the lecture will be available from the SCAR website.

Item 14: Operational Issues

(276) SCAR submitted WP 12 *Human disturbance to wildlife in the broader Antarctic region: A review of findings*. Several Parties recognized the importance of the document and encouraged SCAR to maintain its studies to understand the response of the Antarctic fauna to intrinsic and extrinsic factors.

(277) Many Parties and experts emphasised that due to increases in costs and in order to avoid duplication of effort, more collaboration on international logistics was desirable.

SCAR was encouraged to promote international collaboration in long term research and logistical support at its next meeting. It was noted that the need for Parties to collaborate efficiently and effectively was one of the mandates of the Antarctic Treaty.

(278) One Party suggested that information exchange should include monitoring and follow-up programmes. This would produce a clearer idea of the progress in research being carried out.

(279) Germany introduced IP 112 *Neumayer Station III - Progress during the first season of construction 2007/08*, describing work done during the past season. It noted there had been significant delays due to the heavy sea ice conditions. Germany also described briefly its plans to continue the construction during the coming season, noting that more information could be found at its website *www.awi.de/en/infrastructure*.

(280) The United Kingdom presented IP 21 *Update on Wildlife Awareness Information for Aircraft Operations in Antarctica*, noting that since its launch in 2006, the Wildlife Awareness Manual has proved a useful practical tool to support the UK's national programme in Antarctica. The UK noted that it planned to update the manual for the 2009-10 season and welcomed feedback and additional information from COMNAP, Parties or other stakeholders.

(281) COMNAP confirmed it was working on the issues highlighted in paragraphs 158-159 of CEP IX Report, and in particular was looking at integrating some wildlife awareness information in the Antarctic Flight Information Manual (AFIM).

(282) The Republic of Korea introduced IP 38 *Korea Icebreaker, Araon*, noting that the vessel, currently under construction, was scheduled to be completed by the end of 2009. She would be used for research and logistic activities in the bi-polar regions. Korea emphasised its willingness to share onboard facilities with other Parties.

(283) Australia introduced IP 53 *Australia's Antarctic Air Service 2007/08* and presented a video out of session.

(284) Japan presented IP 63 *Japan's New Icebreaker, the Shirase: Outline and Performance*, describing the main features of the new Japanese icebreaker. Other Parties would be welcome on board the new ship, once it was in service.

(285) Introducing IP 87 *Recent operational developments within the South African National Antarctic Programme (SANAP)*, South Africa highlighted its plans to replace the SA Agulhas with a new multipurpose ship, following a review of the efficiency of the South African Antarctic programme conducted by the National Treasury. Current supply vessels would be replaced by "green" ships and South Africa would consult widely with other Parties. It expected the first funds to be available on 1 April 2009.

(286) Commenting on COMNAP IP 92, ASOC expressed its support for the Parties' call for increase in collaboration and highlighted the large amount of collaboration that was taking place already. ASOC hoped that the discussion about collaboration and momentum generated under IPY could lay the ground for the first international research station.

(287) Other papers submitted under this Agenda Item were:

- WP 12 *Human Disturbance to Wildlife in the Broader Antarctic Region: A Review of Findings* (SCAR)
- IP 92 *Information Paper on International Scientific and Logistic Collaboration in Antarctica* (COMNAP)
- IP 106 *Manual de Primeros Auxilios para Zonas Polares* (Ecuador)
- IP 122 *Monitoring of Human Impacts at McMurdo Station, Antarctica* (United States)

Item 15: Education Issues

(288) The Republic of Korea introduced IP 39 *Korean Public Awareness Programme 'Pole-to-Pole Korea'*, describing the launching ceremony of the IPY held at the National Assembly in Seoul. Korea noted that it had also held a special photo exhibition on polar landscapes and carried out research activities in the National Science Museum in Daejon and staged a further exhibition on Korean Polar activities.

(289) Argentina presented IP 131 *International Course on Antarctic Navigation offered by Argentina*, describing the main features of this revised course. This year the course would take place from August 25 to September 5 in Buenos Aires (for details of the course see *http://www.inun.edu.ar/menues/Navantar/Navantar.asp*).

(290) New Zealand introduced IP 116 *The Graduate Certificate in Antarctic Studies course*, describing the main features of the fourteen-week course taught by Gateway Antarctica, the Centre for Antarctic Studies and Research at the University of Canterbury in Christchurch, New Zealand. More information was available on the website *www.anta.canterbury.ac.nz*

(291) Other papers submitted under Agenda Item 15 were:

- IP 20 *Education website for schools: www.discoveringantarctica.org.uk* (United Kingdom)
- IP 123 *Example of US IPY Education Project: Online Magazine for Polar Science in Schools* (United States)
- IP 93 *Non-native Species Awareness Campaign: "Don't Pack a Pest" When Travelling to Antarctica* (United States)

Item 16: Exchange of Information

(292) The Secretariat introduced SP 12 *Electronic Information Exchange System*, informing the Meeting that in the last intersessional period it had received feedback from 15 Parties which participated in the trial version.

(293) The Secretariat presented a demonstration of the importing features of the EIES. COMNAP noted that the main challenge in the collaboration with the Secretariat in the EIES was to implement a reliable importing function to avoid duplication and

ensure consistent information. Several Parties noted the difficulties in submitting information when the data came from different national authorities. One Party noted the need to specify who would provide the information in the case of shared facilities. It was suggested that the difference between mandatory and discretionary fields should be more clearly highlighted in the EIES.

(294) Some Parties stressed that, regardless of the means used to exchange information, non-compliance with the requirements of the exchange of information provided for in Article III of the Treaty was an issue of concern.

(295) Many Parties thanked the Secretariat and COMNAP for their work, emphasizing that the EIES would be a sensible and useful way to exchange information. Parties also agreed that having a single source of information would be more reliable than the current situation.

(296) The Meeting urged Parties to provide the Secretariat with the information required by the EIES at the earliest opportunity, especially information corresponding to the permanent information category.

(297) The Meeting directed the Executive Secretary to begin operation of the EIES by adopting Decision 5 (2008) (see Annex B, page 361).

Item 17: Biological Prospecting in Antarctica

(298) The Netherlands introduced WP 4 *Report of the ATCM Intersessional Contact Group* to examine the issue of biological prospecting in the Antarctic Treaty Area and Belgium introduced WP 11 *An update on biological prospecting in Antarctica, including the development of the Antarctic Biological Prospecting Database*. UNEP informed the meeting of discussions on related issues that had taken place in the UN, CBD, FAO, WTO and WIPO.

(299) Parties thanked the Netherlands and Belgium for the work they had done, and UNEP for its update. Some Parties expressed interest in seeing the database expanded under Belgian guidance.

(300) The Meeting agreed that the ICG and its informal nature had been useful and provided valuable input to the discussions at this ATCM. It supported the need for the ATCM to continue to monitor the issue.

(301) Parties noted that it was important to have information on any biological prospecting activities being carried out in the Antarctic Treaty areas. Without that information, several Parties noted that it was difficult to consider and address the issue.

(302) Argentina noted that prior to any legal considerations Parties should also have information on the environmental impact of activities which had been undertaken and the association between official scientific entities and the industry regarding commercial developments that may have occurred. On this matter, Argentina and Chile recalled their position that all maritime spaces of the law of the sea applied.

(303) It was noted that there were already instruments and institutions in place which could be relevant to the issue of biological prospecting. These included Articles II and III of the Treaty, the Committee for Environmental Protection (CEP) and CCAMLR regarding marine species. Some Parties expressed the view that some biological prospecting activities may be potentially inconsistent with these Articles. Other Parties expressed the view that biological prospecting was a legitimate activity under the Antarctic Treaty and related instruments. Many Parties highlighted the value of an analysis of any gaps in the existing instruments which needed to be supplemented, while other Parties suggested that it was premature to undertake that analysis.

(304) In addition, many Parties highlighted the value of a review of the Antarctic biological prospecting database and the development of working definitions relating to biological prospecting in the Antarctic Treaty Area. Other Parties preferred that SCAR's views be sought prior to further work.

(305) It was noted that only Argentina, by submitting information, had responded to Resolution 7 (2005) on biological prospecting and that it would be useful to gather information on difficulties in implementing the Resolution. Chile recalled that Parties reported all activities undertaken by the national scientific programmes under the exchange of information and that Chile subsequently provided an overview of the work done on Antarctic biological resources by Chilean scientists.

(306) Belgium suggested that, in order to facilitate the provision of information on biological prospecting activities, the Parties share such information through the Electronic Information Exchange System developed by the Secretariat.

(307) While several Parties noted the need to move forward and for more intersessional work, others questioned whether significant additional work was desirable prior to the receipt of additional information. It was noted that if an ICG, either electronically or by means of a meeting, were to take place, then it needed to have clear terms of reference. After informal consultations, it was agreed not to proceed with an ICG as there was no agreement on terms of reference.

(308) The Meeting invited SCAR to prepare a paper for ATCM XXXII, at which time the biological prospecting issue would be discussed further.

(309) After consultations, SCAR agreed to provide a paper at ATCM XXXII in response to the following questions:

> a) review the most recent published research that may involve biological prospecting in the Antarctic Treaty region and provide an assessment of these efforts from discovery, to development, to commercialisation, to product use, based on fundamental scientific principles.
>
> b) provide a survey of ongoing biological prospecting research being undertaken within the SCAR community.

(310) SCAR noted in this connection that its review of recent research would involve a review of existing databases.

(311) Some Parties noted that one of the results of recent research was the Antarctic biological prospecting database and that they therefore expected that SCAR would include this database in its review.

Item 18: Preparation of ATCM XXXII Meeting

a. Date and Place

(312) The Meeting welcomed the kind invitation of the Government of the United States of America to host the 32nd ATCM from 6 to 17 April 2009 in Baltimore, Maryland.

(313) The United States introduced WP 48 *The Antarctic Treaty at Fifty Years: Planning for Antarctic Treaty Consultative Meeting XXXII (Baltimore, 2009)* and reported on its planning for the Baltimore ATCM. The Meeting expressed support for ideas expressed in the report. In particular, it indicated its approval for the establishment for the Baltimore meeting of a "50th Anniversary Working Group" to discuss themes related to the future of Antarctica. It also agreed that for ATCM XXXII the Meeting would return to the practice of Heads of Delegation submitting opening interventions for the report. The Meeting requested that polar science programmes and institutes prepare a standard-sized poster describing their work, which would then be displayed at the Convention Centre, and requested assistance from COMNAP in alerting its members to this request. The Meeting supported the US proposal to include a day focused on the International Polar Year, to which the Arctic Council delegations would be invited.

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

- 2010: Uruguay
- 2011: Argentina

(315) Uruguay announced that it had secured the necessary funding to host ATCM XXXIII in 2010, and that the ATCM would probably take place in the first two whole weeks of May. The Meeting appreciated this news.

b. Invitation of International and Non-Governmental Organizations

(316) 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 XXXII: the Interim Secretariat of ACAP, ASOC, IAATO, IHO, IMO, IOC, the IPY International Programme Office, IUCN, UNEP, WMO and WTO.

c. Invitation to Malaysia

(317) The Chair reported on informal contact with the Delegation of Malaysia in the margins of ATCM XXXI. The Chair reported that Malaysia had provided details of its Antarctic

scientific research activities and the ongoing steps Malaysia was taking in regard to accession to the Antarctic Treaty. Malaysia had identified at least eighteen Malaysian laws which would have to be amended by the Parliament, and indicated that a specific law regarding involvement in Antarctica might have to be enacted. 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 XXXII in Baltimore as a basis for taking concrete steps towards accession.

d. Preparation of the Agenda for ATCM XXXII

(318) The Meeting approved the Preliminary Agenda for ATCM XXXII (see Annex I, page 649) including the item: 50th Anniversary: Looking to the Future of Antarctica.

e. Organisation of ATCM XXXII

(319) Pursuant to the newly revised Rule 11, the Meeting decided to continue to convene the same Working Groups at ATCM XXXII as at this Meeting, along with the 50th Anniversary Working Group proposed by the United States.

Item 19: Any Other Business

(320) With respect to errors and incorrect references in some documents and publications, *inter alia*, in IAATO documents, regarding the use of incorrect toponomy, references made to an alleged vessel registry, to alleged authorities of the Malvinas, South Georgia and South Sandwich Islands, as well as to private entities funded by such alleged authorities, all this in relation to the territorial status of the Malvinas, South Georgia and South Sandwich Islands, which are subject to a sovereignty dispute between the Argentine Republic and the United Kingdom recognized by the United Nations and several other international organizations, the Argentine delegation reaffirmed that the Malvinas, South Georgia and South Sandwich Islands and surrounding waters are an integral part of the Argentine National territory.

(321) In response, the United Kingdom reiterated that it had no doubt about its sovereignty over the Falkland Islands, South Georgia and the South Sandwich Islands and their surrounding maritime areas. In that regard, the United Kingdom had no doubt about the rights of the Government of the Falkland Islands to operate a shipping register for UK-flagged vessels.

(322) Argentina rejected the UK's statement and reiterated its legal position which is known to all delegations.

Item 20: Adoption of the Final Report

(323) The Meeting adopted the Final Report of Antarctic Treaty Consultative Meeting XXXI.

(324) The Chair of the Meeting, Prof. Sergiy Komisarenko made closing remarks.

(325) The Meeting was closed on Friday, 13 June 2008 at 16:30 following the closing address made by Dr Maxim Strikha, Deputy Minister for Education and Science of Ukraine.

PART II

MEASURES, DECISIONS AND RESOLUTIONS

ANNEX A

Measures

Measure 1 (2008)

Antarctic Specially Managed Area No 7: South-west Anvers Island and Palmer Basin

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 the agreement of ATCM XVI (1991) that Parties should require, voluntarily, that their national programme operators and, to the maximum extent possible, persons subject to their jurisdiction comply with the provisions of the proposed Multiple-Use Planning Area at South-west Anvers Island and vicinity;

Recalling

- Recommendation VIII-1 (1975), which designated Litchfield Island as Specially Protected Area (SPA) No 17,

- Decision 1 (2002), which renamed and renumbered SPA 17 as Antarctic Specially Protected Area ("ASPA") No 113, and

- Measure 2 (2004), which annexed a Management Plan for ASPA 113;

Recalling

- Recommendation XIV-5 (1987), which designated South Bay, Doumer Island, Palmer Archipelago as Site of Special Scientific Interest ("SSSI") No 28 and annexed a Management Plan for SSSI 28,

- Resolution 3 (1996), which extended the expiry date of SSSI 28 from 31 December 1997 to 31 December 2000,

- Measure 2 (2000), which extended the expiry date of SSSI 28 from 31 December 2000 to 31 December 2005,

- Decision 1 (2002), which renamed and renumbered SSSI 28 as Antarctic Specially Protected Area No 146;

Noting that the Committee for Environmental Protection has advised that South-west Anvers Island and Palmer Basin be designated as an Antarctic Specially Managed Area and has endorsed the Management Plan annexed to this Measure;

Recognising that South-west Anvers Island and Palmer Basin is an area where activities are being conducted, in which it is desirable to plan and co-ordinate activities, avoid possible conflicts, improve cooperation between Parties and avoid possible environmental impacts;

Desiring to designate Anvers Island and Palmer Basin as an Antarctic Specially Managed Area, within which ASPA 113 and ASPA 146 are located, and to approve a Management Plan for the Area, without any modification to the Management Plan for ASPA 113 which is annexed to Measure 2 (2004) or to the Management Plan for ASPA 146 which is annexed to Recommendation XIV-5 (1987);

Noting that South-west Anvers Island and Palmer Basin contains marine areas and that the Commission on the Conservation of Antarctic Marine Living Resources approved its designation as an Antarctic Specially Managed Area at its 26th meeting;

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

That:

1) South-west Anvers Island and Palmer Basin be designated as Antarctic Specially Managed Area No 7; and

2) the Management Plan which is annexed to this Measure be approved.

Management Plan for Antarctic Specially Managed Area No 7

SOUTH-WEST ANVERS ISLAND AND PALMER BASIN

Introduction

The region that includes south-west 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

1(i) Scientific values

The diverse and easily accessible assemblages of marine and terrestrial flora and fauna in the south-west 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 behaviour 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 south-west 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 (200,000km^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 400km 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 50km^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 south-west 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.

1(ii) Flora and fauna values

The south-west 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.

1(iii) Educational and visitor values

The south-west 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 south-west 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 cooperation 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 South-west 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

- 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

6(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 25km west of the Antarctic Peninsula. It is bounded by Neumayer Channel and Gerlache Strait in the south-east and Bismarck Strait to the south (Map 1). Anvers Island is heavily glaciated, the south-western half being dominated by the Marr Ice Piedmont, a broad expanse of permanent ice rising gently from the coast to around 1000m 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

south-western extremity of Anvers Island, and Cape Lancaster in the south-east. 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 (~22km 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 100m 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 south-western 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 2.7km 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 south-east include Shortcut, Christine, Hermit, Limitrophe, Laggard and Cormorant islands (Map 3). More distant, Biscoe Point, ASPA No 136, lies on a small island ~14km to the south-east 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 9.4km respectively NW of Palmer Station in Wylie Bay.

There are three dominant marine features in the Palmer Basin region:

Shallow shelves: extend from Anvers Island and the adjacent island groups to depths of 90-140m.

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.

Palmer Basin: the only deep basin in the area, located 22km south-west of Palmer Station and with a maximum depth of ~1400m. 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 south-east, and is surrounded by shelves shallower than 165m. A channel of ~460m depth connects Palmer Basin to the continental shelf edge west of the Area.

Boundaries of the Area

The South-west Anvers Island and Palmer Basin ASMA encompasses an area of approximately 3275km^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 north-eastern boundary of the Area is defined as a line extending parallel to and approximately one kilometer inland from the south-west Anvers Island coastline. This terrestrial boundary extends from a northerly location at 64°33'S, 64°06'03"W, ~3.1km 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 7.9km across Bismarck Strait to 64°55'36"S on Wednesday Island, the most easterly of the Wauwermans Islands. The boundary then follows a general south-westerly 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 (~3.1km 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 south-west 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 53km 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 north-east.

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 10m 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 south-western 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 south-west 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 south-west 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 north-easterly 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 south-west 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 south-west 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 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). 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 north-west 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 south-west 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 (~5km) '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).

6(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.

6(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 South-west 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 50m from the shore into any adjacent marine area (Map 2). A 50m 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 50m 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 north-eastern 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 south-west 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.

6(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, 25km south-east 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, 30km 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.

7(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 50m 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 50m 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 400m 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.

7(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.

7(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.

7(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.

7(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).

7(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.

7(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.

7(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.

7(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 South-west Anvers Island and Palmer Basin ASMA;
- Appendix D: References.

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 5km (3 miles) from the station and no closer than 300m 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;

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 south-west 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 50m 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 South-west 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	*Hydrurga leptonyx*	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

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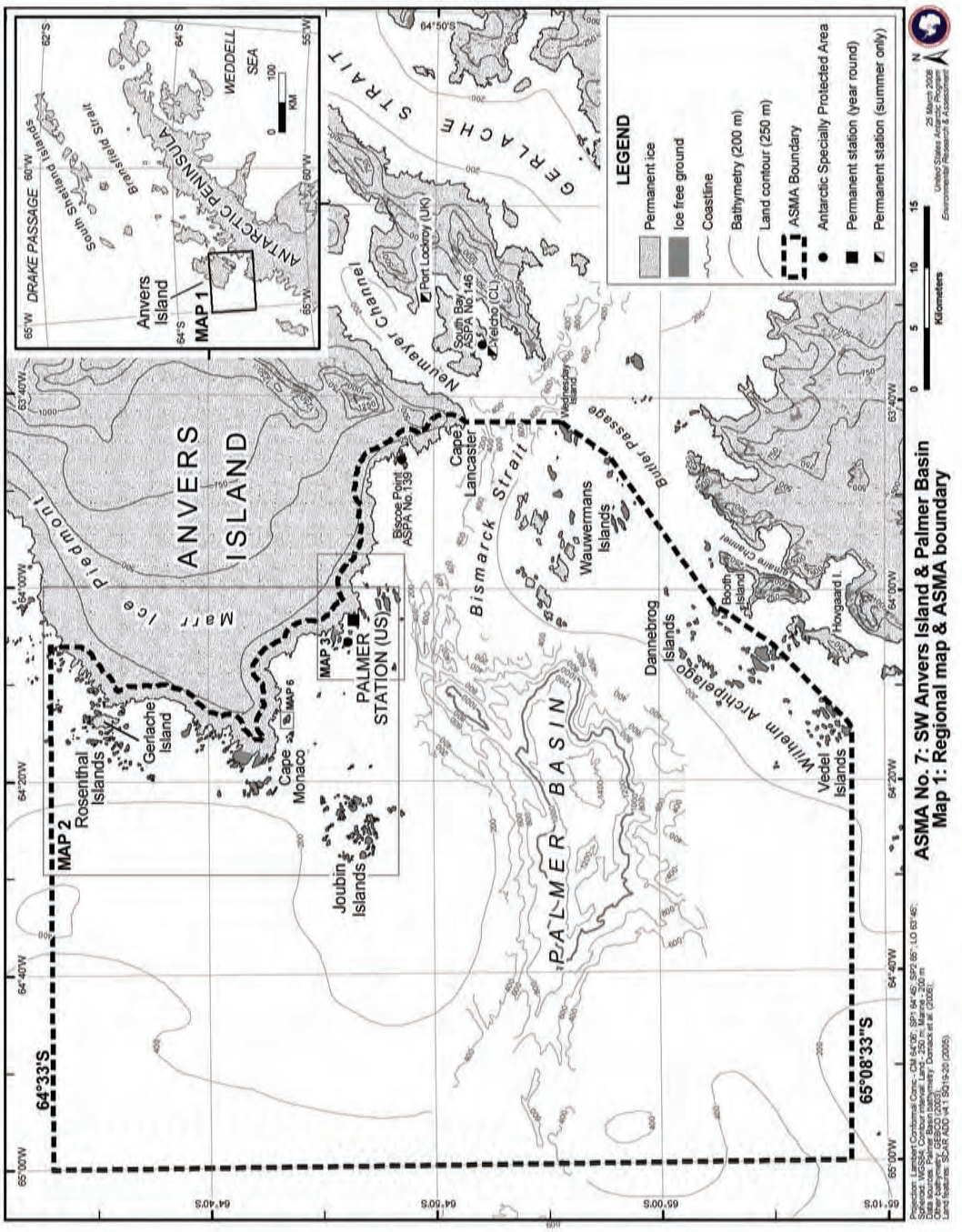
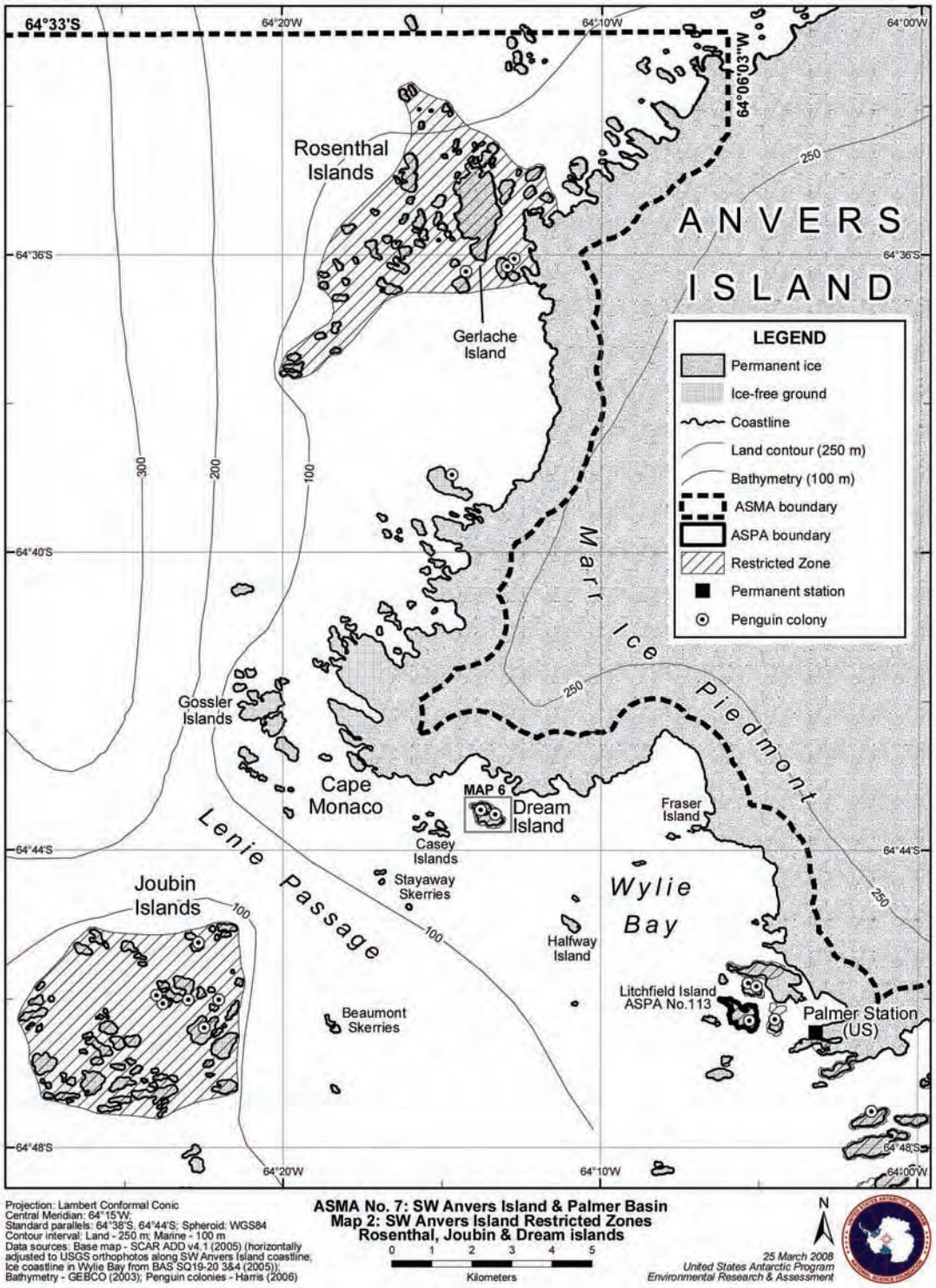

ASMA No. 7: SW Anvers Island & Palmer Basin
Map 1: Regional map & ASMA boundary
LEGEND
Permanent ice
Ice free ground
Coastline
Bathymetry (200 m)
Land contour (250 m)
ASMA Boundary
Antarctic Specially Protected Area
Permanent station (year round)
Permanent station (summer only)
ANVERS ISLAND
PALMER BASIN
PALMER STATION (US)
MAP 2
MAP 3
MAP 1
Anvers Island
Rosenthal Islands
Gerlache Island
Cape Monaco
Joubin Islands
Biscoe Point ASPA No.139
Cape Lancaster
Bismarck Strait
Wauwermans Islands
Dannebrog Islands
Wilhelm Archipelago
Vedel Islands
Hovgaard I.
Booth Island
Butler Passage
Neumayer Channel
Port Lockroy (UK)
South Bay ASPA No.146
Velcho (CL)
Wednesday Island
GERLACHE STRAIT
Marr Ice Piedmont
DRAKE PASSAGE
WEDDELL SEA
ANTARCTIC PENINSULA
South Shetland Islands
Bransfield Strait
64°33'S
65°08'33"S
64°50'S
63°40'W
64°00'W
64°20'W
64°40'W
65°00'W
64°40'S
64°60'S
65°00'S
65°10'S
Kilometers
25 March 2008
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

25 March 2008
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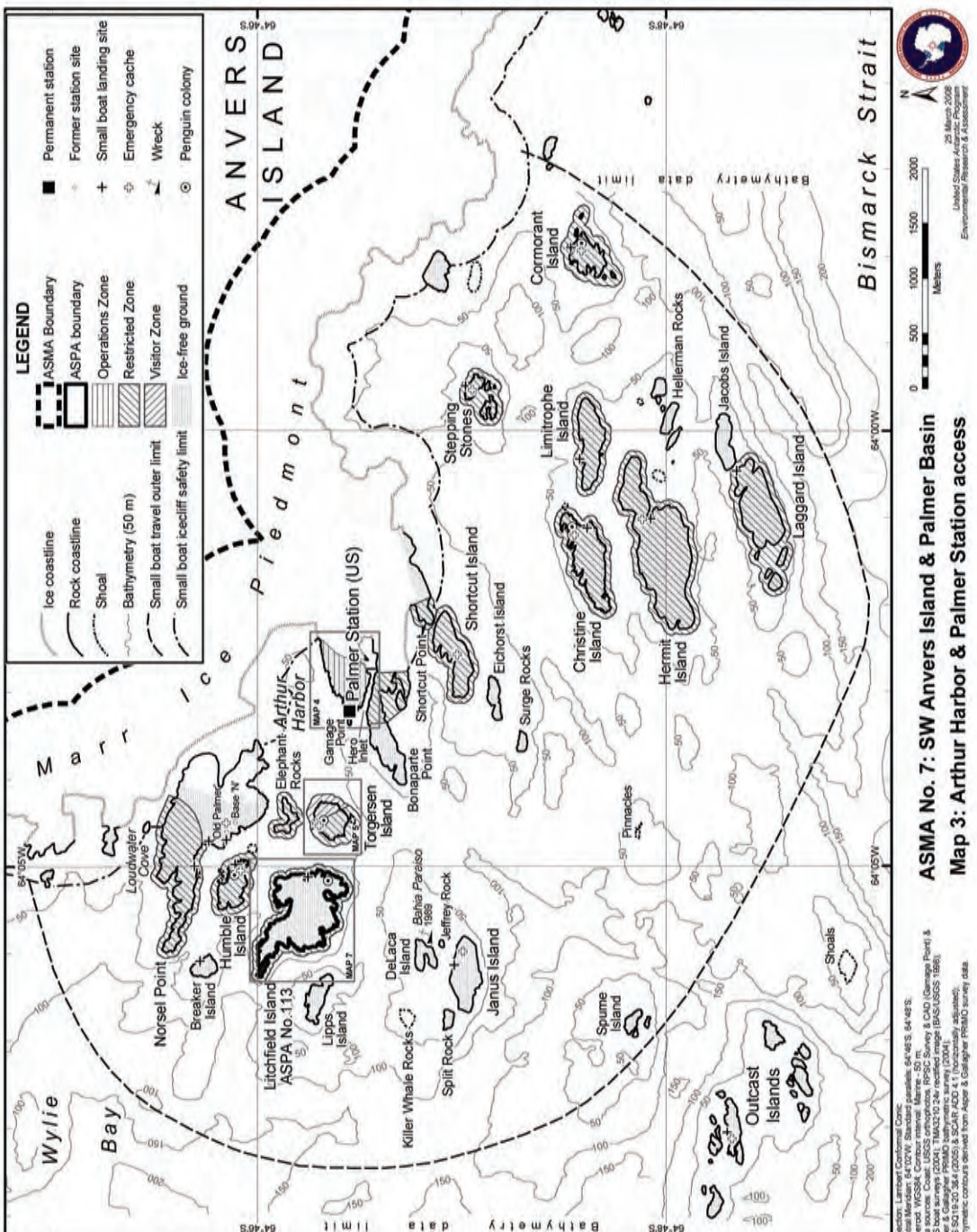
LEGEND
Ice coastline
Rock coastline
Shoal
Bathymetry (50 m)
Small boat travel outer limit
Small boat icecliff safety limit
ASMA Boundary
ASPA boundary
Operations Zone
Restricted Zone
Visitor Zone
Ice-free ground
Permanent station
Former station site
Small boat landing site
Emergency cache
Wreck
Penguin colony
ANVERS ISLAND
Marr Ice Piedmont
Wylie Bay
Bismarck Strait
Palmer Station (US)
Arthur Harbor
Litchfield Island ASPA No.113
Norsel Point
Humble Island
Breaker Island
Loudwater Cove
Old Palmer Base 'N'
Elephant Rocks
Garage Point
Hero Inlet
Torgersen Island
Bonaparte Point
Shortcut Point
Shortcut Island
Eichorst Island
Surge Rocks
Stepping Stones
Cormorant Island
Limitrophe Island
Christine Island
Hermit Island
Hellerman Rocks
Jacobs Island
Laggard Island
Pinnacles
Lipps Island
DeLaca Island
Bahia Paraiso 1989
Jeffrey Rock
Janus Island
Killer Whale Rocks
Split Rock
Spume Island
Shoals
Outcast Islands
Bathymetry data limit
Meters
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 3: Arthur Harbor & Palmer Station access
25 March 2008
United States Antarctic Program
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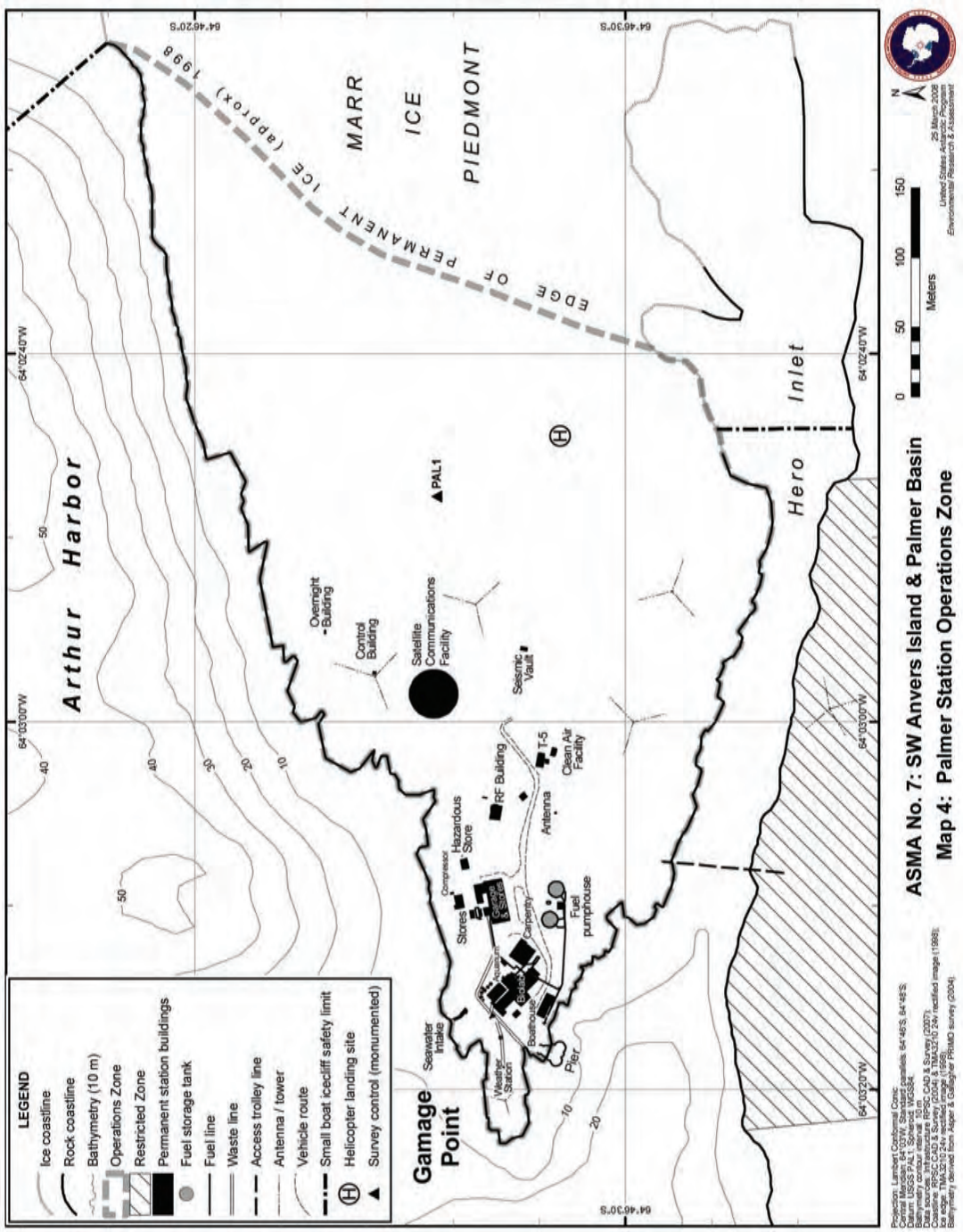
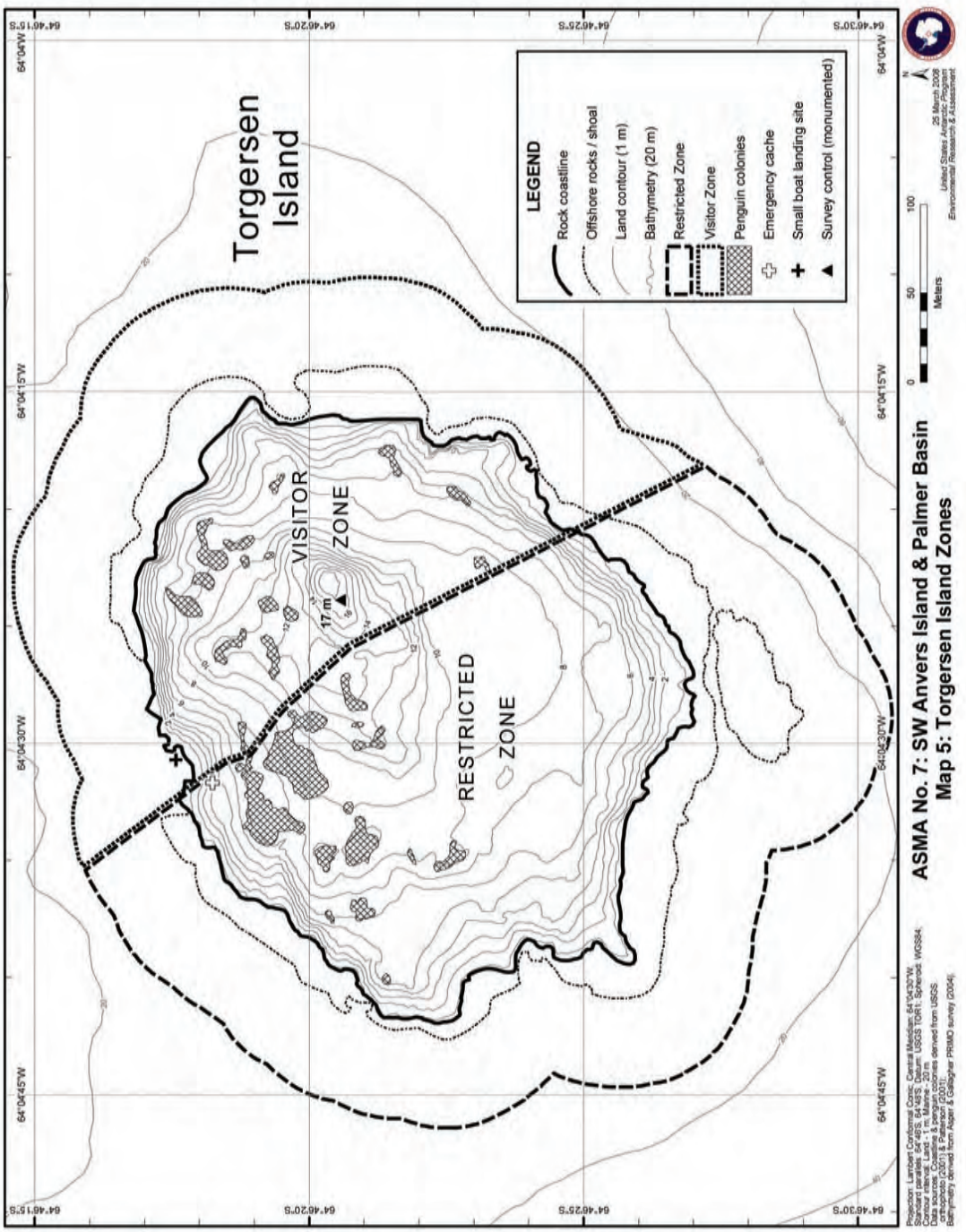
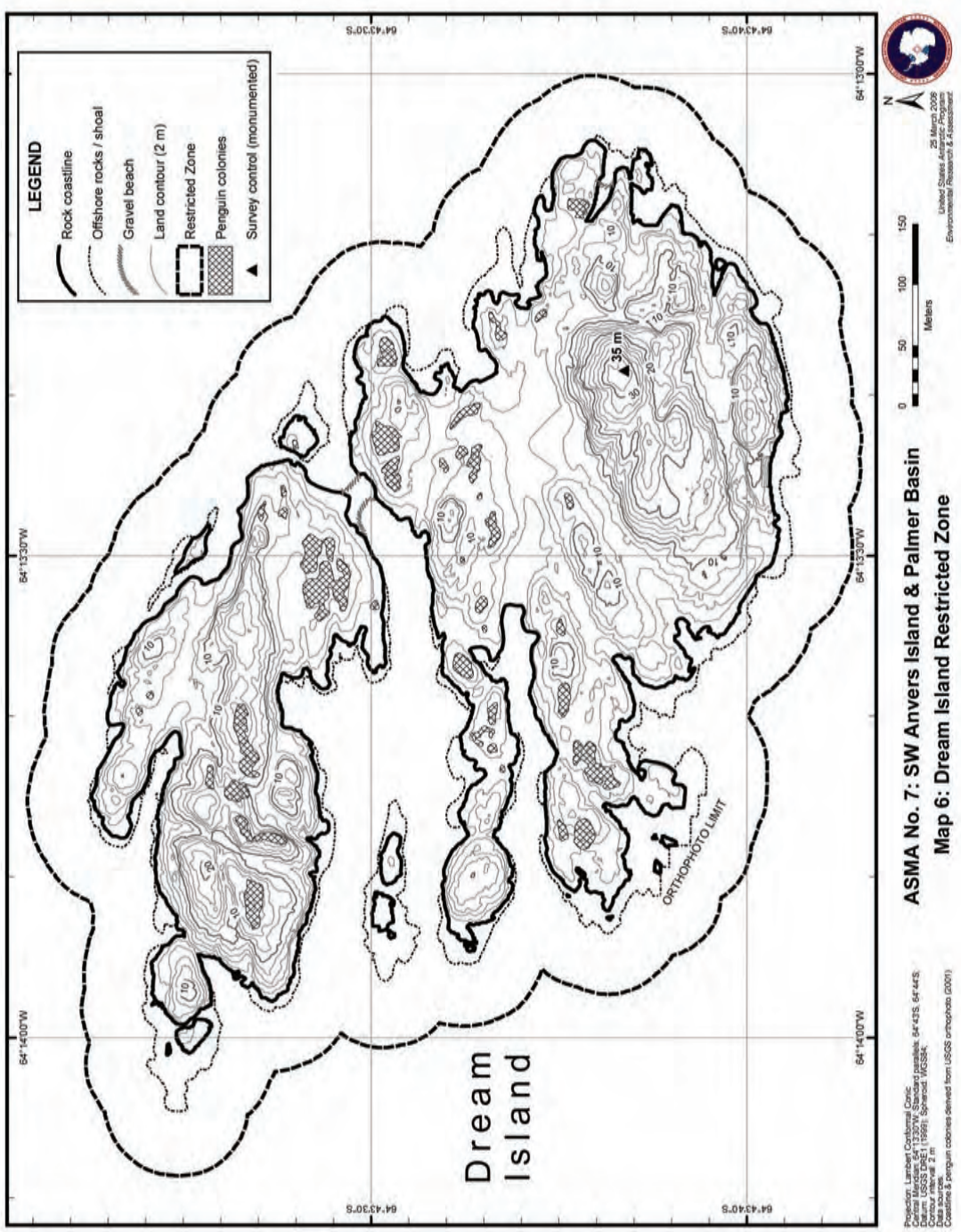
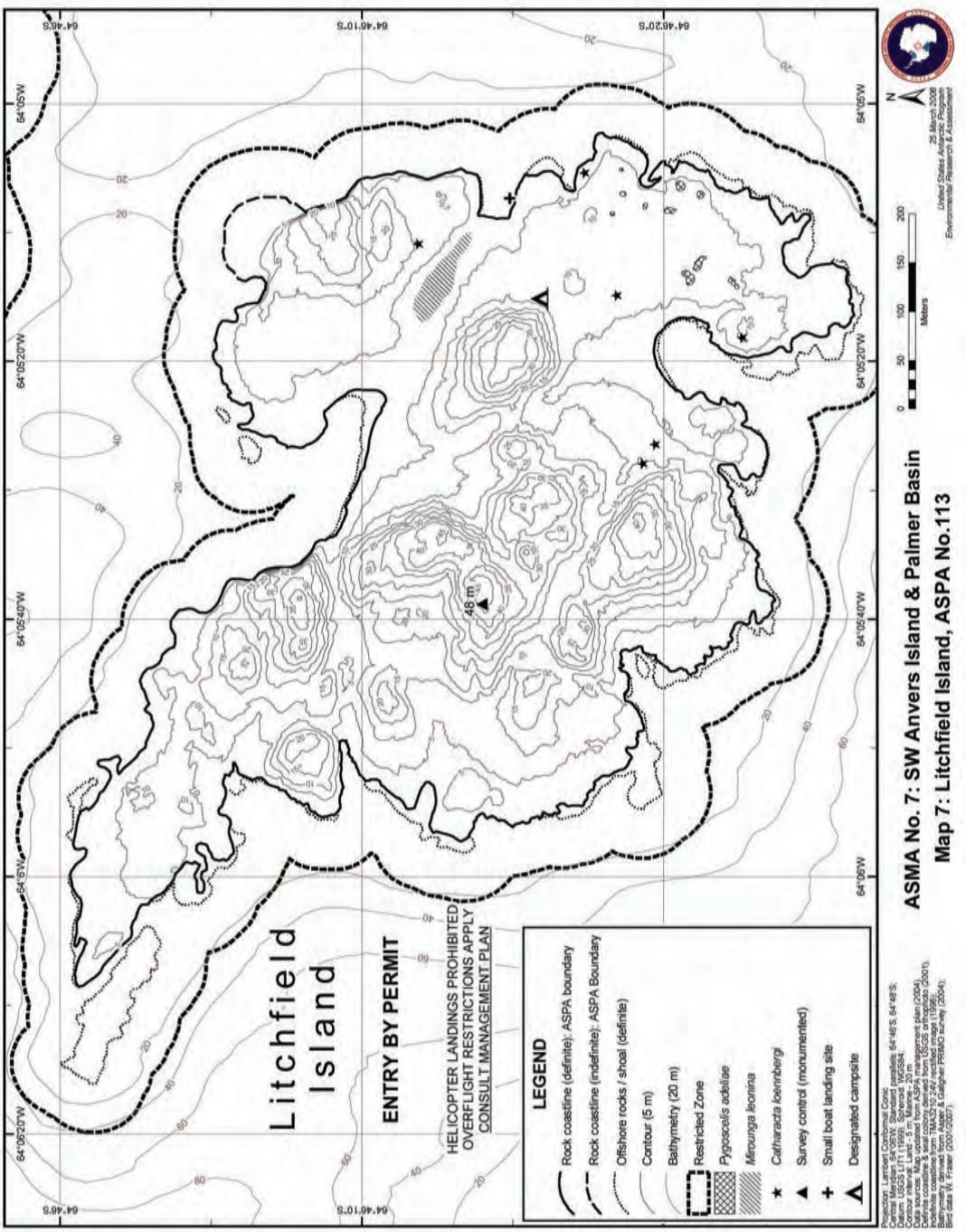
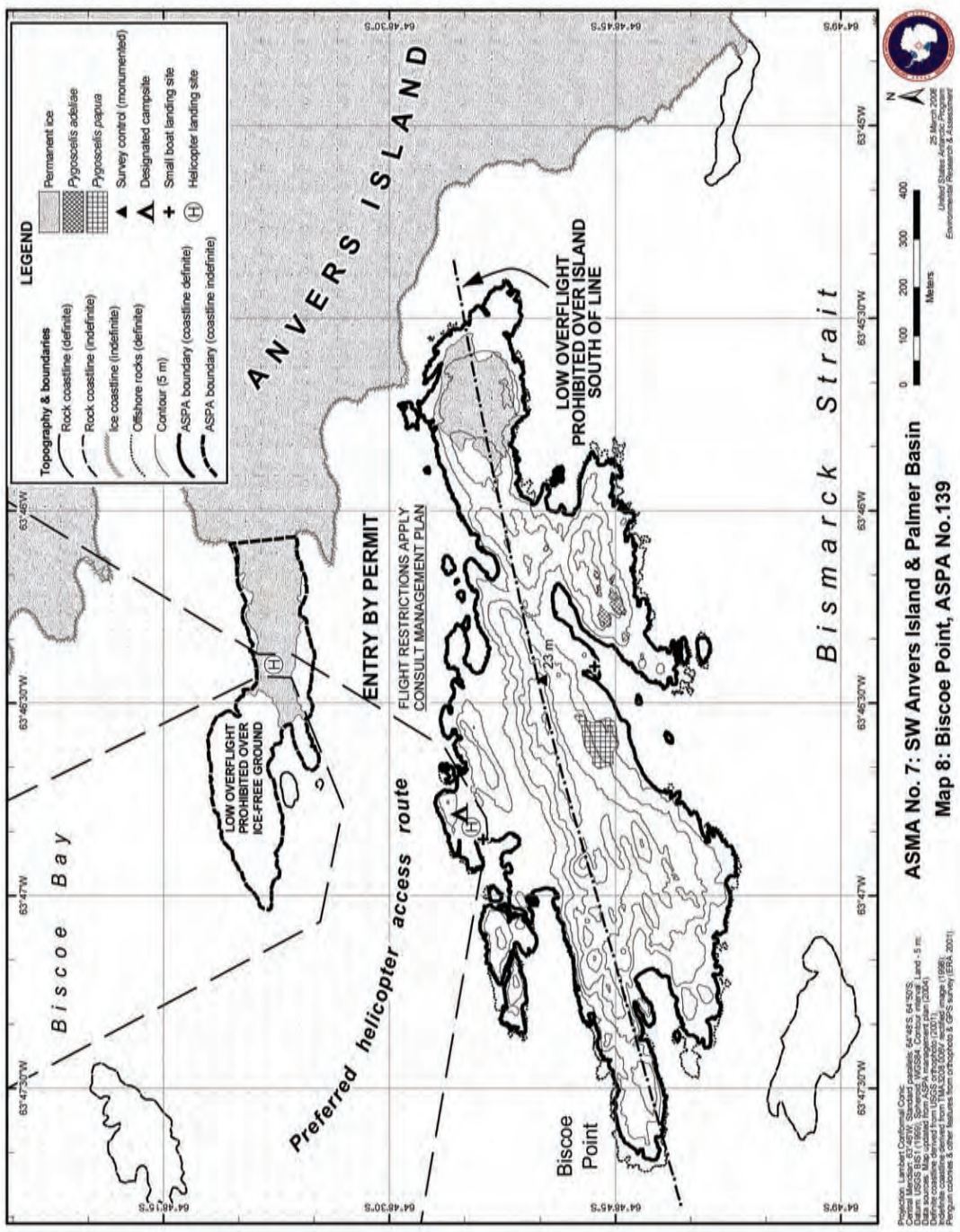

LEGEND
Ice coastline
Rock coastline
Bathymetry (10 m)
Operations Zone
Restricted Zone
Permanent station buildings
Fuel storage tank
Fuel line
Waste line
Access trolley line
Antenna / tower
Vehicle route
Small boat icecliff safety limit
Helicopter landing site
Survey control (monumented)
Arthur Harbor
Gamage Point
MARR ICE PIEDMONT
EDGE OF PERMANENT ICE (approx) 1998
Hero Inlet
Overnight Building
Control Building
Satellite Communications Facility
PAL1
Seismic Vault
RF Building
T-5
Clean Air Facility
Antenna
Hazardous Store
Compressor
Stores
Garage & Store
Carpentry
Aquarium
Generator
Boathouse
Fuel pumphouse
Seawater intake
Weather Station
Pier
64°46'20"S
64°46'30"S
64°03'00"W
64°02'40"W
64°03'20"W
0
50
100
150
Meters
N
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 4: Palmer Station Operations Zone
25 March 2008
United States Antarctic Program
Environmental Research & Assessment


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)
0
50
100
Meters
N
25 March 2009
United States Antarctic Program
Environmental Research & Assessment
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 5: Torgersen Island Zones
64°46'15"S
64°46'20"S
64°46'25"S
64°46'30"S
64°04'W
64°04'15"W
64°04'30"W
64°04'45"W


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
64°43'30"S
64°44'0"S
64°14'00"W
64°13'30"W
64°13'00"W
0
50
100
150
Meters
N
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 6: Dream Island Restricted Zone
25 March 2009
United States Antarctic Program
Environmental Research & Assessment


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
Pygoscelis adeliae
Mirounga leonina
Catharacta loennbergi
Survey control (monumented)
Small boat landing site
Designated campsite
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 7: Litchfield Island, ASPA No.113
Meters
25 March 2008
United States Antarctic Program
Environmental Research & Assessment


LEGEND
Topography & boundaries
Rock coastline (definite)
Rock coastline (indefinite)
Ice coastline (indefinite)
Offshore rocks (definite)
Contour (5 m)
ASPA boundary (coastline definite)
ASPA boundary (coastline indefinite)
Permanent ice
Pygoscelis adeliae
Pygoscelis papua
Survey control (monumented)
Designated campsite
Small boat landing site
Helicopter landing site
ANVERS ISLAND
Biscoe Bay
Bismarck Strait
ENTRY BY PERMIT
FLIGHT RESTRICTIONS APPLY
CONSULT MANAGEMENT PLAN
LOW OVERFLIGHT
PROHIBITED OVER ISLAND
SOUTH OF LINE
LOW OVERFLIGHT
PROHIBITED OVER
ICE-FREE GROUND
Preferred helicopter access route
Biscoe
Point
23 m
63°47'30"W
63°47'W
63°46'30"W
63°46'W
63°45'30"W
63°45'W
64°46'15"S
64°46'30"S
64°46'45"S
64°47'S
0
100
200
300
400
Meters
N
ASMA No. 7: SW Anvers Island & Palmer Basin
Map 8: Biscoe Point, ASPA No.139
25 March 2006
United States Antarctic Program
Environmental Research & Assessment

Measure 2 (2008)

Antarctic Specially Protected Area No 168: Mount Harding, Grove Mountains, East Antarctica

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 Mount Harding, Grove Mountains, East Antarctica, 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 Mount Harding, Grove Mountains, East Antarctica 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) Mount Harding, Grove Mountains, East Antarctica be designated as Antarctic Specially Protected Area No 168; and

2) the Management Plan which is annexed to this Measure be approved.

Management Plan for Antarctic Specially Protected Area No 168

MOUNT HARDING, GROVE MOUNTAINS, EAST ANTARCTICA

1. Introduction

The Grove Mountains (72°20'-73°10'S, 73°50'-75°40'E) are located approximately 400km inland (south) of the Larsemann Hills in Princess Elizabeth Land, East Antarctica, on the eastern bank of the Lambert Rift(Map A). Mount Harding (72°512 -72°572 S, 74°532 -75°122 E) is the largest mount around Grove Mountains region, and located in the core area of the Grove Mountains that presents a ridge-valley physiognomies consisting of nunataks, trending NNE-SSW and is 200m above the surface of blue ice (Map B).

The primary reason for designation of the Area as an Antarctic Specially Protected Area is to protect the unique geomorphological features of the area for scientific research on the evolutionary history of East Antarctic Ice Sheet (EAIS), while widening the category in the Antarctic protected areas system.

Research on the evolutionary history of EAIS plays an important role in reconstructing the past climatic evolution in global scale. Up to now, a key constraint on the understanding of the EAIS behaviour remains the lack of direct evidence of ice sheet surface levels for constraining ice sheet models during known glacial maxima and minima in the post-14 Ma period.

The remains of the fluctuation of ice sheet surface preserved around Mount Harding, will most probably provide the precious direct evidences for reconstructing the EAIS behaviour. There are glacial erosion and wind-erosion physiognomies which are rare in nature and extremely vulnerable, such as the ice-core pyramid, the ventifact, etc. These glacial-geological features have not only important scientific values, but also rare wildness and aesthetic values and the disorderly human activities would cause perpetual, unrepairable damage to it.

The Chinese Antarctic Research Expedition (CHINARE) has visited the Grove Mountains for several times from1998 to 2006, focusing on research on geological tectonics, glacial geology and landscape, meteorology, ice-cap movement and mass balance, surveying and mapping, especially on fluctuation of Antarctic icecap surface since the Pliocene, and these research results in some new discoveries. The Australian Antarctic Programme has for many years visited the Grove Mountains to conduct a range of geoscience and glaciology research and support activities. It currently maintains a continuous GPS station on Tianhe Range and expects to continue to access the region for research and operational purposes. Besides, Russian Antarctic Research Expedition has ever tripped there in 1958 and 1973 for a short stay, but whether they have arrived at this area is unclear.

2. Description of values

The Mount Harding area designated as the site for the specially protected area (Map A) has the precious physiognomies of glacier erosion preserved in the ice sheet of inland Antarctic, which is of great scientific, aesthetic and wilderness values. The aim of this protected area is to preserve its scientific, aesthetic and wilderness values.

2(i) Scientific values

A lot of remains of ice sheet advance and retreat are preserved in Mount Harding, which are the direct evidence of the changes of cold and warm in the global environment since Pliocene. In this area, the scientists have found the rare extreme cold desert soil, the sedimentary rocks formed in the Neogene Period that are not consolidated completely, as well as the valuable spore pollen assemblages in those paleo-soils and sedimentary rocks. All of this implies there existed a warm climate event in this area; probably resulting in a large-scale retreat of the EAIS, and its margin might be even beyond the Grove Mountains, 400km south from its present coast of the EAIS.

The unique geomorphological features in this area includes the integral geologic-geomorphic remains and a series of special physiognomy, such as ice-core pyramid, ventifacts, ice-cored moraine (end moraine and lateral moraine), cold-desert soil, sedimentary erratics, pool of melted water, roche moutonee, etc.

2(ii) Aesthetic and wilderness values

A legacy of the various magnificent landscapes remains in this area, from pool of melted water, ice-core moraine, ice-core pyramid to ventifacts (photos 1-6).

Human beings have visited for many years this area, other area within Grove Mountains region to conduct for a range of scientific activities. It mainly includes scientists and support staff from China, Australia and Russia. In the future, especially during the 2007-2008 IPY, human activities perhaps will increase in this area.

3. Management objectives

The purpose of establishing a specially protected area for the remains of ice sheet advance and retreat around Mount Harding, Grove Mountains, East Antarctica, is to:

- Facilitate long-term scientific research while avoiding direct or cumulative damage to vulnerable geomorphological features;
- Allow compelling scientific research that cannot be carried out elsewhere;
- Authorize other scientific activities consistent with the management objectives;
- Allow visits for managerial purposes in support of the objectives of the Management Plan.

4. Management activities

Copies of the Management Plan (attached with maps) shall be made available at the Zhongshan Station (China), Davis Station (Australia), Progress Station (Russia), and the map of the protected area should be put up at conspicuous positions in the stations mentioned above (special restrictions of access to the protected area, and the equilibrium line separating the zone of net ablation from the inland zone of net accumulation, as well as a series of the special physiognomies unique to the inland ice sheet of East Antarctica within the protected area should be indicated in the map).

National Antarctic Programs operating in the region shall 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.

Visits should be paid to this area regularly (once every five years) so as to assess whether the objective of protection in this area is achieved and to ensure that various managerial measures are in place.

The Management Plan should be reviewed at least once every five years and, if necessary, updated or revised.

In case the Antarctic ice sheet continuously retreats so that the new remains of advance and retreat of EAIS are exposed in the vicinity of the protected area and the extent of remains of ice sheet advance and retreat expands, the boundary of the protected area should be updated periodically so as to include the newly exposed remains of ice cap advance and retreat in the area. This should be taken into consideration in examining the Management Plan.

5. Period of designation

Designated for an indefinite period.

6. Description of the Area

6(i) Geographical co-ordinates, boundary marks, general climate condition in summer and physiognomy

The Area is irregular, and approximately rectangular in shape, with a width of about 10km from east to west, a length of about 12km from south to north and an total area of about 120km^2 (Map A).

The proposed ASPA boundary was defined to in order to ensure that the unique geomorphological features, formed in ice sheet advance and retreat in Mount Harding, can be specially protected as a whole.

Geographical Co-ordinates

The Specially protected Area of Mount Harding, Grove Mountains, includes the open blue-ice zone from the moraine on the west side of Mount Harding to the east side of the Zakharoff Ridge as well as a number of nunataks, detritus zone, and moraine etc. within it (Map B). Its geographical co-ordinates are: 72°512 -72°572 S, 74°532 -75°122 E.

Boundary marks

The western boundary of the Area is the moraine on the west side of Mount Harding, with its northern end turning eastward to the open blue-ice detritus zone on the east side of the Zakharoff Ridge via the north flank of the northern ridge of Mount Harding and the northern end of the Zakharoff Ridge, turning southwards to the northern end of Davey Nunataks, and then heading westwards to the southern end of the Xi Lake moraine to close the whole area. The geographical coordinates of the nine control points located at its boundary are counter clockwise: 1. 74°57'E, 72°51' S, 2. 74°54'E, 72°53' S, 3. 74°53'E, 72°55' S, 4. 74°54'E, 72°57' S, 5. 75°00'E, 72°57' S, 6. 75°10'E, 72°57' S, 7. 75°12'E, 72°55' S, 8. 75°11'E, 72°52' S, 9. 75°08'E, 72°51' S.

No markers or signs are currently in place to mark the boundary.

General climate condition in summer

With an average altitude of more than 2000 meters in the Grove Mountains, the daily temperature range and strong wind frequency are greater than those at Zhongshan Station. When affected by the warm-moist current from the north, snowfall would appear constantly in this area, while under the control of the east current, the weather would mainly be sunny. The trend of daily wind speed change is greater than that at Zhongshan Station, where the maximum wind speed appears at around

05:00 am; the lowest records are seen from 16:00 and 17:00 in the afternoon, and minimum wind speed might appears at about 17:00 pm. Same as Zhongshan Station, the Grove Mountains area is influenced by the katabatic wind, but with a greater force than Zhongshan Station.

From December 1998 to January 1999, the average highest and lowest air temperature in the Grove Mountains area were -13.1°C and -22.6°C respectively, and the estimated average daily temperature range could be -9.5°C. In this area, in January in particular, the air temperature and snow temperature saw an obvious change during a day, where the average air temperature was -18.5°C, and the snow surface temperature was about -17.9°C, that is, the average snow temperature was higher than the average air temperature.

Physiognomy

Mount Harding in the central GMs is shaped as a crescent open to the north-west. Both the northern and southern ends are steep crests, protruding ~200m above the recent ice surface. The central segment of the ridge-line between two summits descends progressively until it reaches the ice surface in a central col, with a relic ice tongue hanging on the lee side. A stagnant field of blue ice, tens of km2 wide, lies inside the crescent. All of this, shining each other with the vast blue ice, forms the magnificent, beautiful scene of ice-eroded ice field geomorphology.

The nunataks within the area may be divided into two groups. The one in the west is the tall nunataks represented by Mount Harding, and the other is a small part of the area including the low linear nunatak chain on the Zakharoff Ridge. The stoss slopes of rocky nunataks show smoothly abraded bedrock, with surfaces sparsely erratic till patches. The lee and lateral sides of the nunataks show generally sharp bluffs, resulting from both ice flow scraping and collapse along sub-vertical crevasses of rocks. The nunataks leave pair of “wake zone” of superglacial debris tens km in length on the ice surface, marking the path of present local ice flow.

The upper parts of the higher nunataks are usually jagged ridge populating with well-developed ventifacts on the summits, facing the dominant wind from the SE. The scarcity of glacial erosive imprints, also meters of depth inside the hard rock delved by wind- force blowing out indicate that these higher slopes are ice free since rather long time. But the lower parts of slopes beneath ~100m above ice surface have the features of recent glacial erosion such as fresh trimlines and erratics. Some of small nunataks are typical “roches moutonnée” resulted from the past ice flow overriding. This regional borderline between wind and glacial erosions are considered to represent a former height of ice surface since certain phase, probably early Quaternary glaciations, and the later rises of ice surface did not exceed this limit.

Mount Harding is the largest nunatak in the Grove Mountains. On the west side of the crescent ridge there is a large stretch of lake shaped stagnant blue ice plain (Kunming Lake, Xi Lake) and a dozen ice-cored pyramids (ice-cored cone) are visible at the juncture of the ice lake and the foot of the rocky nunataks.

The geological and glacial phenomena or landscapes that deserve special protection include (Map C).

Ventifact (photo 1, 2): As a result of long-term blow and erosion by fierce winds, there have developed a large number of ventifacts with peculiar shape around the southern summit of Mount Harding. These ventifacts are the typical wind-erosion physiognomy rarely seen on the earth and are subject to the perpetual damage by disorderly human activities.

Ice-core pyramids (ice-cored cones, photo 3): Along the northern and southern banks of “Kunming Lake” are scattered a dozen ice-core pyramids. These ice-core pyramids are cone shaped with a height of 20-40m and a base diameter of 50-80m. These pyramids are the best marks for directly measuring the pneumatolysis of blue ice and of great importance to the research on the material

balance and evolutionary history of the EAIS. They are extremely vulnerable and any human climbing behaviour will lead to their perpetual alteration and destruction.

Floating ice-cored moraine (photo 4): On the north-west side of the stagnant blue ice pool lie some of linear floating moraine. These moraines are about 100m wide, 25-35m high and kilometres long. On the surface of the moraine there is a gravel bed with a thickness of 50-100 cm, below which is the blue ice. These exotic rock masses provide precious source material for studying the tectonics of the underlying base rocks of EAIS. The spore pollen assemblages contained in the sedimentary erratics are the key evidence of the large-scale retreat event of the EAIS during the Pliocene. Any walking or climbing activities will very probably cause the irreparable damage to these moraine dykes.

Cold-desert soil: Several cold-desert soil patches were found on the southern slope of Mount Harding above the regional erosion limit of 100m. The existence of such soils indicates also that the ice fluctuation has never been higher than this limit after the formation of soils because any higher rise of the ice would have scraped all of them away.

Microfossil assemblages in the sedimentary erratics: More than 25 species of Neogene microfossil of plant have been identified from such outwash sedimentary boulders. These spore and pollen assemblages provide useful information on the evolution of the EAIS since they are derived from a suite of glaciogenic strata hidden beneath the EAIS. Most of the pollen and spores are originated from local sources as in situ assemblages, representing a continental flora.

Pool of ice melted water (photo5): At the foot of the lee side of huge nunataks are often developed pools of ice melted water, large or small, each with an area from several dozen square meters up to a thousand square meters. The surface ice of these pools is extremely smooth and transparent, and the air bubbles are rich inside the ice from the bottom. The occurrence of the pool of ice melted water suggests the existence of a megathermal event.

Blue ice cliff: On the east side of the protected area are distributed blue ice cliffs or blue ice precipices, with the length of several thousand meters, usually 30-50m high, with a slope of 40-70°.

Roche moutonnees (photo 6): Typical roche moutonnees are distributed on the east and south sides of the protected area. They are peculiar in shape, have a large number of footprints of ice flow on their surfaces, and possess very high wilderness, aesthetic and scientific values.

Paleo-sedimentary basin (ice sheet leading edge): A paleo-ice erosion basin with the marginal sedimentary layer, at the front edge of ice sheet in the Pliocene is inferred to lie below the blue ice basin on the west side of Mount Harding. It is probably a brand-new type of subglacial lakes. Exploration of these paleo-sedimentary lake basins may yield the precious sedimentary records on the paleo-climatic and environmental changes during the Pliocene in this area.

6(ii) Geological condition

These nunataks consist mainly of upper amphibolite to granulite facies metamorphic rocks, syn-orogenic to late orogenic granite, and post tectonic granodioritic aplite and pegmatite. The absence of active structures and earthquakes, and the lack of Cenozoic volcanism suggest that this region, along with Prydz Bay, have been geologically stable at least since the Late Mesozoic Epoch. New geological evidence obtained from this area shows that in the inland East Antarctica there exists a huge "Pan-African" stage orogenic zone from the Prydz Bay, Grove Mountains to the Prince Charles Mountains, which should be the last segmented suture zone of the Gondwana land.

6(iii) Access to, and movement within or over, the Area

Access to the area may be gained overland by vehicle or by aircraft landing on snow- and ice-covered sites within or adjacent to the Area.

6(iv) Location of structures within and adjacent to the site

Australia maintains a continuous GPS station on Tianhe Ridge at 72°54'29.17479"S, 74°54'36.43606"E. The station consists of a GPS antenna mounted on a geodynamic survey pillar, three rugged cases containing batteries and GPS receivers, a solar panel frame holding four solar panels and a wind turbine. In addition there are three survey reference marks surrounding the GPS pillar, approximately 20m distant.

6(v) Location of other protected areas in the vicinity

There are no other protected areas nearby.

6(vi) Special Zones within the Area

There are no special zones proposed in this area.

7. Permit

Entry into the Area is prohibited unless a Permit issue by an appropriate national authority.

Conditions for issuing a Permit to enter the Area are that:

- Scientific research activities that cannot be carried out in any place other than this area; and the applicant for a Permit who needs to collect rock specimens or samples shall make an application. Before the permit is issued, the applicant shall demonstrate to the appropriate competent authorities that the specimens or samples already collected from other parts of the world so far cannot fully meet the needs of the researches (tasks) proposed;
- Managerial activities for the purpose of realizing the objectives of the Management Plan, such as inspection, maintenance and review;
- The actions permitted are in accordance with the Management Plan;
- The actions permitted will not jeopardize the values of the Area;
- Those who are within the specially protected area must carry with them the Permit or its valid copy;
- The period of validity must be stated in the Permit;
- Report on the activities must be submitted to the national authorities issuing the Permit and in charge of polar issues.

7(i) Access to and movement within the Area

Entry by land vehicles such as snowmobile and aircraft should avoid destroying the local equilibrium line separating the zone of net ablation from the inland zone of net accumulation, paleo-soil distribution zone, ventifacts, blue-ice cliff, ice-core pyramid, and other geological and natural physiognomy of important scientific research and environmental values.

As there have many ice crevice in this area, it is recommend that entry by snowmobile would drive down the route along the two sides of which Chinese expedition has set colourful poles for the sake of safety.

Aircraft operations within the Area should be mindful of the mountainous terrain.

Climbing up the ice-core pyramids, walking on the floating moraine dyke and roches montannees is strictly prohibited.

7(ii) Activities allowed to be conducted in the Area, including restrictions on time and place

Scientific researches which have to be carried out in the Area (cannot be conducted in any other parts of the world or in other areas of Antarctica) and which must not damage the value of the Area.

Major management activities, including monitoring, inspection, maintenance or review.

Other activities in support of scientific research or management within the Area, or essential for operational support of activities within or beyond the wider Grove Mountains area.

7(iii) Installation, modification and removal of structures

No structures or facilities shall be erected in the Area except those for conducting essential scientific and managerial activities or for the purpose of scientific research, as specified in the Permit.

All the facilities to be set up and installed within the Area shall be specified in the Permit issued by the competent authority of the particular country. Where possible, such installations should avoid sensitive geomorphological features.

Their permitting country, year of installation, principal investigators or responsible persons shall be clearly indicated. When no longer needed, these facilities shall be removed in time and so shall other abandoned equipment or materials as far as possible.

7(iv) Location of field camps

For safety reasons, the camping sites must be selected in such a way as not to destroy or affect the special geological and natural physiognomy.

If not destroying the local and adjacent geological and natural physiognomy, Camping is allowed within the Area when necessary for purposes consistent with this Management Plan and where authorised in a Permit. In this area, the encampment near Mount Harding (No 9) and the encampment near Zakharoff Ridge (No 8) are the preferred camping site, shown in Map B. Camping should choose snow or ice surface or rock surface to avoid the remnants of ice sheet.

7(v) Restrictions on materials and organisms which may be brought into the site

No depots of food or other supplies are to be left within the Area beyond the time period or activity for which they are required.

No live animals, plant material or micro-organisms shall be deliberately introduced into the Area.

All necessary precautions shall be taken to prevent accidental introduction.

All material 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 as to minimise the risk of environment impacts.

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

No native flora and fauna are present.

7(vii) The collection or removal of materials not imported 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, and which was not brought into the Area by the Permit holder or otherwise authorised, may be removed unless the impact of the removal is likely to be greater than leaving the material in situ. If this is the case, the appropriate national authority must be notified and approval obtained.

7(viii) Disposal of waste

At a minimum, all the wastes (non-human or human) should be managed in accordance with Annex III and not disposed of into freshwater streams or lakes, onto ice-free areas, or onto areas of snow or ice which terminate in such areas of high ablation.

7(ix) Measures that may be necessary to continue to meet the aims of the Management Plan

None.

7(x) Reporting requirements

After each Permit is issued, the responsible Permit holder shall prepare and submit a report on the activities conducted in the Area in the Visit Report form suggested by SCAR. The report shall be submitted to the competent authorities specified in the Permit as soon as possible, but no later than 6 months after the visit ends. Such reports shall be kept indefinitely and easily made available to the interested Parties, CCAMLR and COMNAP. If necessary, documentation of human activities within the area shall be provided to the above-mentioned parties.

The investigators should finish their investigation report within six months after the research activities are concluded. A copy of such report should be submitted to national authority so as to make revision and re-examination of the Management Plan in accordance with the requirements of the Antarctic Treaty. The report should include all the contents of the accepted Visit Report Form suggested by SCAR as well as other information as required according to the country's laws and regulations. The permit issuing authority should provide the information on these reports so that organizations such as SCAR, COMNAP and the interested countries may consult them.

8. Supporting documentation

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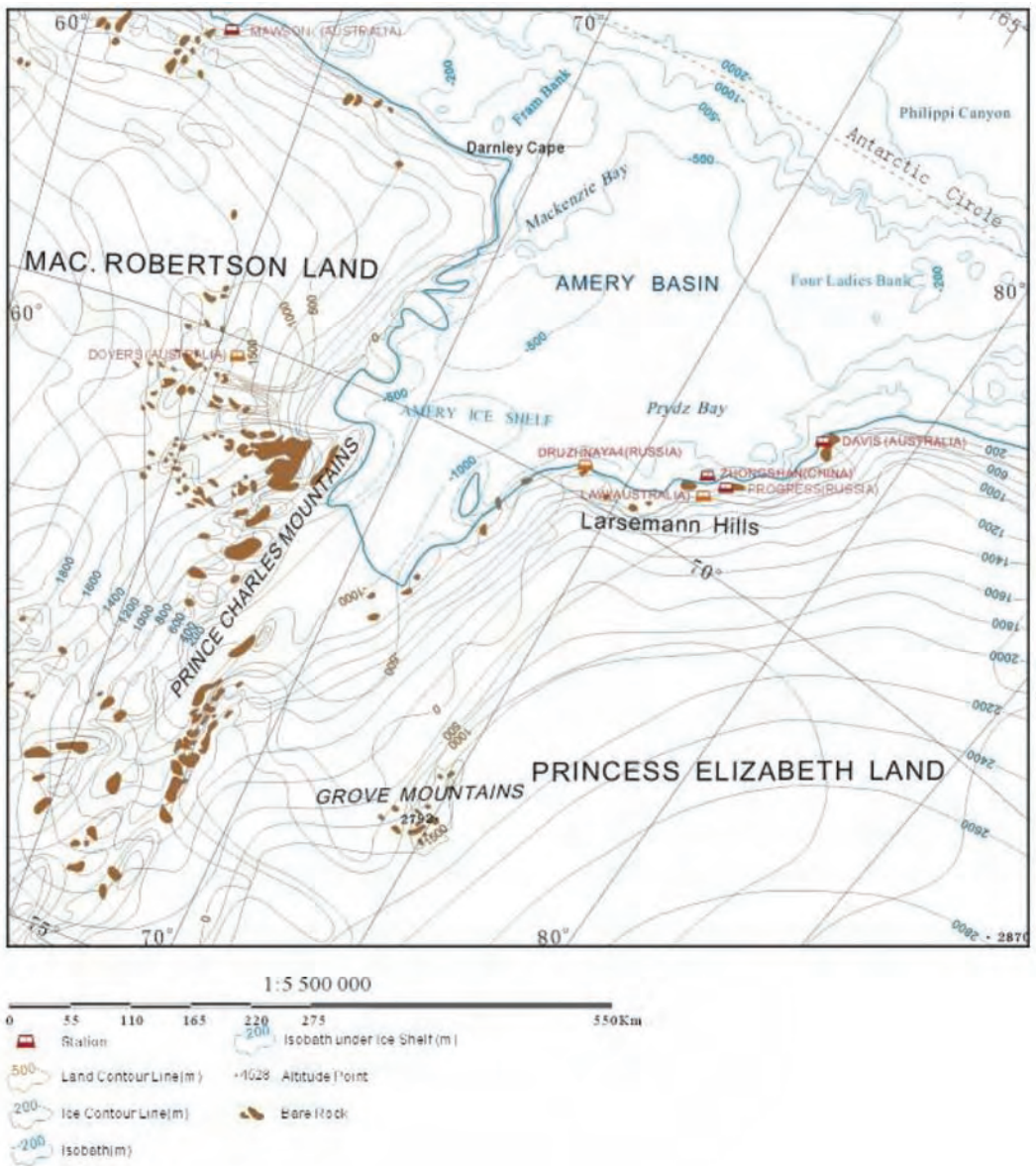
9. Maps

- Map A: A1: Position of Grove Mountain. A2: Grove Mountains Area, Antarctica
- Map B: Protected Area around Mount Harding, Grove Mountains, Antarctica
- Map C: Location of Nunataks and Direction of Ice Flow around Mount Harding, Grove Mountains, Antarctica.

Map A1. Position of Grove Mountains

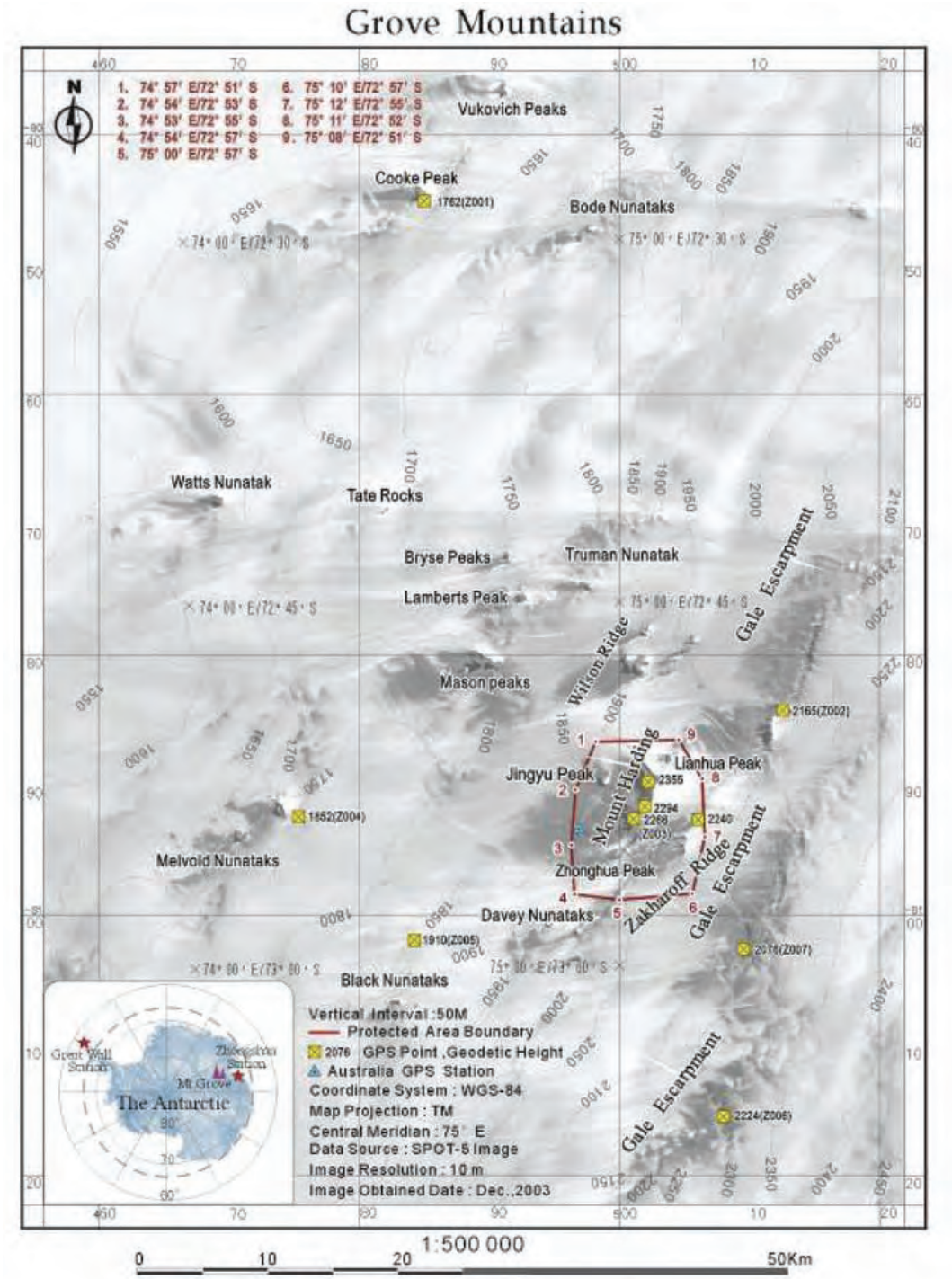
Mapping Standard: Projection: Normal Stereographic Horizontal datum:WGS-84
Manufacturer: Chinese Antarctic Centre of Surveying and Mapping, Wuhan University



Map A2. Grove Mountains Area, Antarctica

Mapping standards: Projection: TM, Horizontal datum: WGS-84

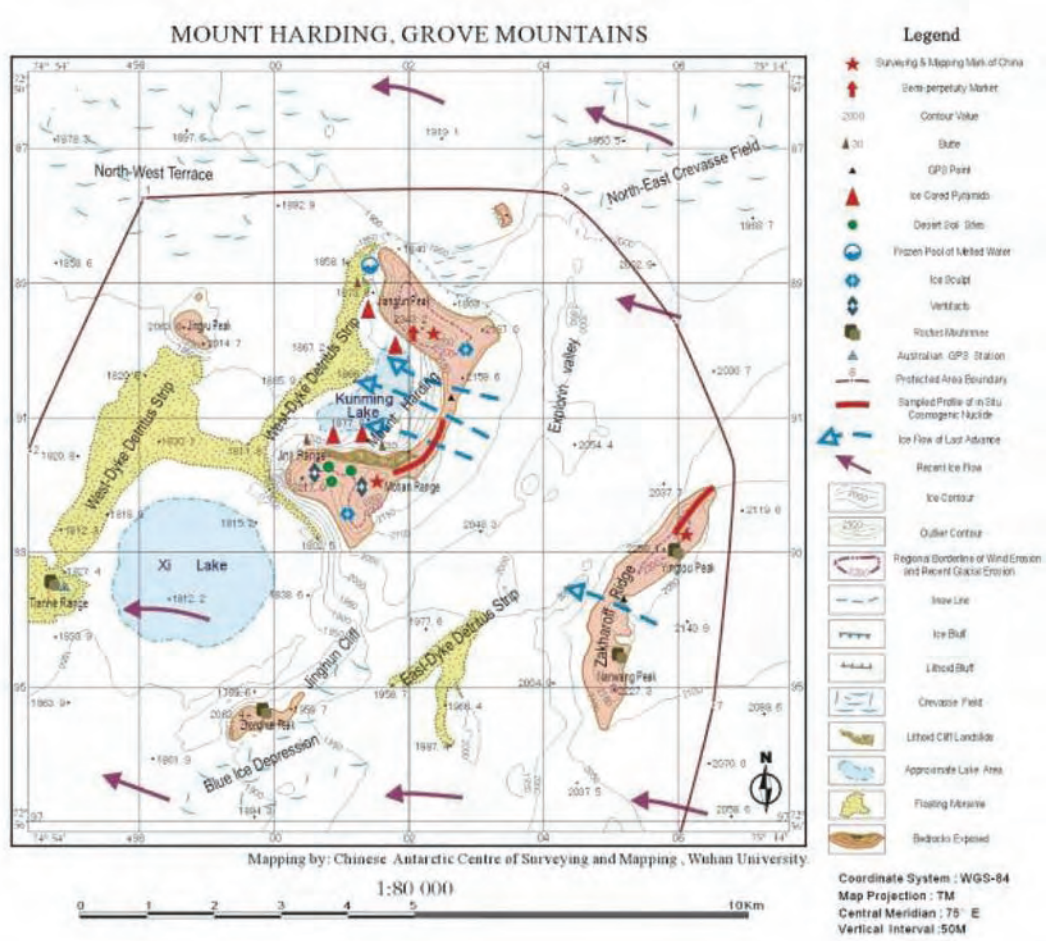
Manufacturer: Chinese Antarctic Centre of Surveying and Mapping, Wuhan University



Map B. Protected Area around Mount Harding, Grove Mountains, Antarctica

Mapping standards: Projection: TM Horizontal datum: WGS-84

Manufacturer: Chinese Antarctic Centre of Surveying and Mapping, Wuhan University



Map C. Location of Nunataks and Direction of Ice Flow around Mount Harding, Grove Mountains, Antarctica

Mapping standards: Projection: TM Horizontal datum: WGS-84

Manufacturer: Institute of Geology and Geophysics, Chinese Academy of Sciences

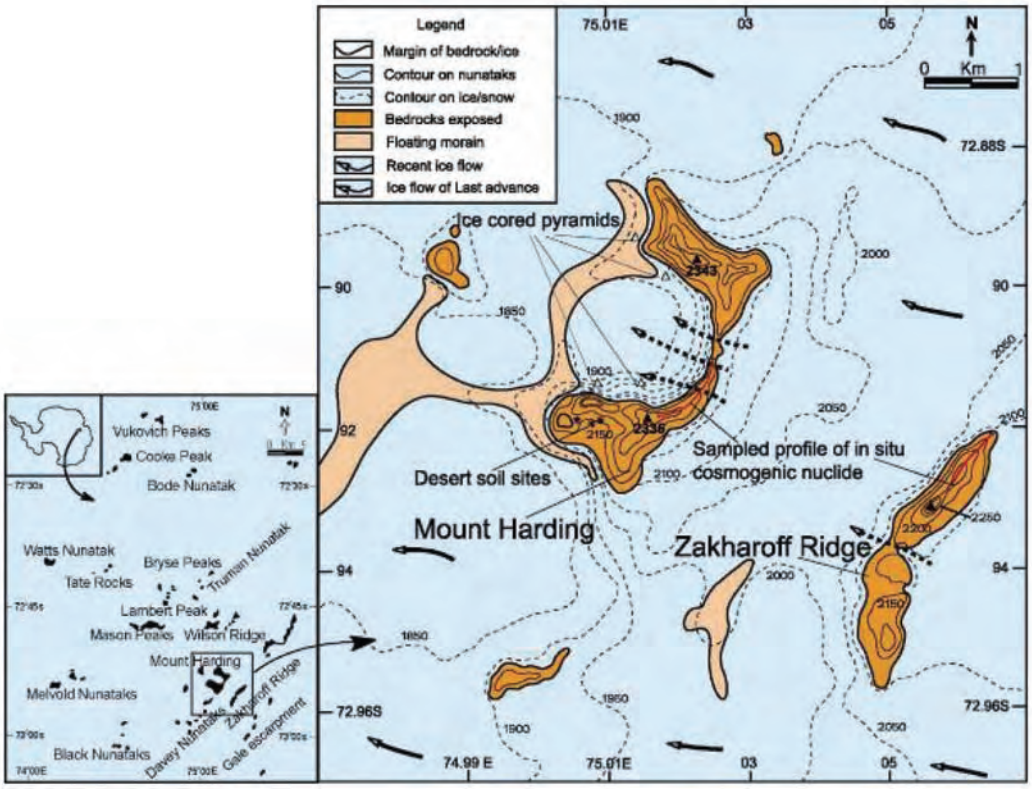


Photo 1: Ventifact, taken on January 13th, 2003

Photo 2: Ventifact, taken on January 13th, 2003

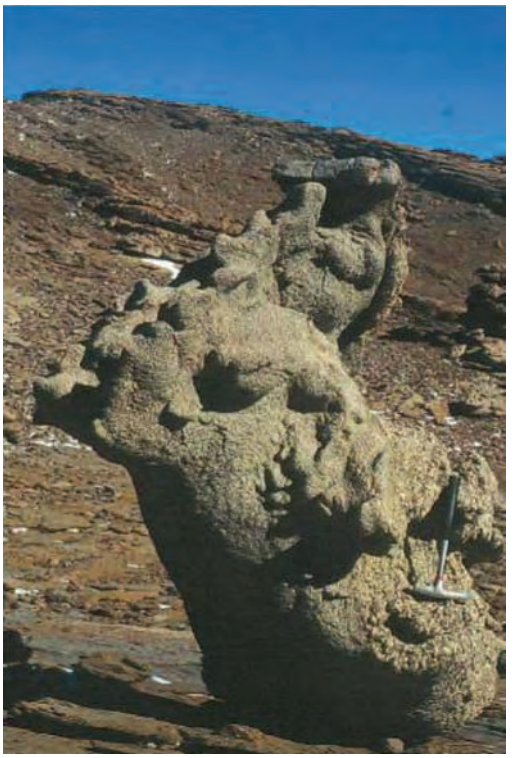


Photo3: Ice-core pyramid, taken on January 12th, 2003

Photo 4: Hanging moraine dyke, taken on January 14th, 2003

Photo 5: Pool of ice melted water, taken on January 14th, 2003

Photo 6: Roches montannees, taken on January 12th, 2003

Measure 3 (2008)

Antarctic Specially Protected Area No 169: Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica

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 Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica 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 Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica 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) Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica be designated as Antarctic Specially Protected Area No 169; and

2) the Management Plan which is annexed to this Measure be approved.

Management Plan for Antarctic Specially Protected Area No 169

AMANDA BAY, INGRID CHRISTENSEN COAST, PRINCESS ELIZABETH LAND, EAST ANTARCTICA

Introduction

Amanda Bay is located on the Ingrid Christensen Coast of Princess Elizabeth Land, East Antarctica at 69°15' S, 76°49'59.9" E. (Map A). The Antarctic Specially Protected Area (ASPA) is designated to protect the breeding colony of several thousand pairs of emperor penguins annually resident in the south-west corner of Amanda Bay, while providing for continued collection of valuable long-term research and monitoring data and comparative studies with colonies elsewhere in East Antarctica.

Only two other emperor penguin colonies along the extensive East Antarctic coastline are protected within ASPAs (ASPA 120, Point Géologie Archipelago and ASPA 167 Haswell Island). Amanda Bay is more easily accessed, from vessels or by vehicle from research stations in the Larsemann Hills and Vestfold Hills, than many other emperor penguin colonies in East Antarctica. This accessibility is advantageous for research purposes, but also creates the potential for human disturbance of the birds.

The Antarctic coastline in the vicinity of Amanda Bay was first sighted and named the Ingrid Christensen Coast by Captain Mikkelsen in command of the Norwegian ship Thorshavn on 20 February 1935. Oblique aerial photographs of the coastline were taken by the Lars Christensen expedition in 1937 and by the US Operation Highjump in 1947 for reconnaissance purposes. In the 1954/55 summer, the Australian National Antarctic Research Expedition (ANARE) on the Kista Dan explored the waters of Prydz Bay, and the first recorded landing in the area was made by a sledging party led by Dr. Phillip Law on 5 February 1955 on Lichen Island (69°19'59.9"S, 75°31'59.9 E). Extensive aerial photography was flown by ANARE from 1957 to 1960.

The first recorded visit to Amanda Bay itself took place in August 1957, when a surveying party observed an astro fix at the Larsemann Hills. During the return flight to Davis, the area was photographed and named Amanda Bay after the newly-born daughter of the pilot, RAAF Squadron Leader Peter Clemence. Between 1957 and 1997 the colony is known to have been visited approximately once every for years (see Appendix 1), however in recent years there has been increased visitation from research scientists, station personnel on overland traverses, and commercial tourism operators.

1. Description of Values to be Protected

The Area is primarily designated to protect the breeding colony of emperor penguins located at Amanda Bay for their intrinsic and scientific values. The colony lies adjacent to the highly productive area of Prydz Bay and provides an ideal opportunity for comparative studies with emperor penguin colonies of the Mawson Coast further to the west.

The emperor penguin colony consists of several thousand pairs located on the fast ice in the south-west corner of the bay. The current range of the number of breeding pairs at the colony is unknown as no systematic census has been carried out since 1983 when Cracknell (1986) counted 2339 chicks and 2448 adults in the colony on 29/30 September (see Appendix 1). Since that count was conducted half way through the breeding season, it is not possible to accurately estimate the size of

the breeding population, however it gives an indication of a minimal number of breeders present in that year.

Emperor penguins *Aptenodytes forsteri* live all year in Antarctic waters and have a circumpolar breeding distribution. Colonies occur chiefly in three main areas: (1) the Weddell Sea and Dronning Maud Land; (2) Enderby and Princess Elizabeth Lands; and (3) the Ross Sea. There may be as many as 40 known breeding colonies; the majority of these have not been visited or systematically counted for decades, so the total breeding population is not accurately known. Most colonies are located between 20°W and 110°E along the coast of East Antarctica, and there is a concentration of breeding pairs at six colonies in the Ross Sea East (160°E to 170°E). The latitudes of colonies range from 66°S to 78°S. Emperor penguin colonies are typically located on the winter fast ice in areas where the ice forms early in the year and remains stable until early summer. Only three colonies are known to be located on land: one on Dion Island in Marguerite Bay, on the western Antarctic Peninsula (ASPA 107, 67°52‘S, 68°43’W); one near Taylor Glacier, Mac. Robertson Land (ASPA 101, 67°28’S, 60°53’E); and one in the area of Richardson Lakes near Amundsen Bay in Enderby Land (66° 45’S, 50° 38’E).

2. Aims and objectives

Management at Amanda Bay aims to:

- avoid degradation of, or substantial risk to, the emperor penguin colony by preventing / minimising unnecessary human disturbance;
- provide for ongoing research and monitoring of the emperor penguin colony, and other compelling scientific activity which cannot be undertaken elsewhere; and
- gather survey data on the population status of the emperor penguin colony on a regular basis.

3. Management activities

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

- signs illustrating the location and boundaries, with clear statements of entry restrictions, shall be placed at appropriate locations on the boundary of the Area to help avoid inadvertent entry;
- information about the Area (describing the boundary and all special restrictions that apply) and copies of this Management Plan shall be made available at research/field stations in the Vestfold Hills and Larsemann Hills, and shall be provided to all ships visiting the vicinity;
- visits shall be made to the Area as necessary (where practicable, not 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 management activities are adequate; and
- the Management Plan shall be reviewed at least every five years and updated as required.

4. Period of designation

Designated for an indefinite period.

5. Maps

The following maps are provided:

- Map A: Amanda Bay Antarctic Specially Protected Area, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica. Location Amanda Bay on Ingrid Christensen Coast. Map Specifications: Projection: Lambert Conical Conformal; Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level.
- Map B: Amanda Bay Antarctic Specially Protected Area, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica. Location of Emperor Penguin Colony and Physical Features. Map Specifications: Horizontal Datum: WGS84; Vertical Datum: Mean Sea Level.

6. Description of the Area

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

Amanda Bay (69°15'S, 76°49'59.9"E) lies south-west of the Brattstrand Cliffs, between the Vestfold Hills to the north-east and the Larsemann Hills to the south-west on the Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica (Map A). Amanda Bay is approximately 3km wide and 6km long, and opens north-west into Prydz Bay. The south-west side of the bay is flanked by the Flatnes Ice Tongue secured by Cowell Island at its western corner. The southern and eastern sides are bounded by continental ice cliffs. There are small islets towards the centre of the bay and several un-named islands a few kilometres offshore.

The Amanda Bay Antarctic Specially Protected Area comprises the rocks, islands and water, including fast ice, lying within an irregular area, covering the general area of Amanda Bay, commencing at a point to the north-east of Hovde Island at the terminus of the Hovde Glacier, 76°53'54.48"E, 69°13'25.77"S; then south along the coastline at the base of the Hovde Glacier ice cliffs, to a point at 76°53'44.17"E, 69°16'22.72"S; then west along the coastline at the base of a series of ice-free bluffs to a point 76°49'37.47"E, 69°16'58'48"S; then north along the base of the Flatnes Ice Tongue ice cliffs, to a point at the terminus of the Flatnes Ice Tongue, 76°46'41.07'E, 69°14'44.37"S; then a straight line in a north-easterly direction connecting with the originating point at 76°53'54.48"E, 69°13'25.77"S (Map B).

Emperor Penguins

The Amanda Bay emperor penguin colony occupies fast ice in the south-west corner of Amanda Bay, between two small islands to the east and the glacier tongue to the west. The colony has occupied a number of sites within Amanda Bay location since its discovery in 1957.

In September – October 1986, the colony occupied an area of some 100m by 500m during winter. This was in an area about 3.3km south of that reported in 1961, but probably similar to the position reported in May 1960. In September – October 1986, the colony was divided into two major groups, the first occupying a dark–stained slope of consolidated snow, ice and excreta based on a strip of moraine landward of the tide cracks at the foot of the ice-cliffs. The second group was on the flat sea ice just seaward of the main tide crack zone. In October that year, open water was approximately 38km from the colony and there was a continuous movement of adults and chicks between the two groups. In winter 1997, the colony consisted of six groups of ranging in size and covering a site some 2.5km by 5km on the fast ice, approximately 10km from open water. The strong circular currents in Prydz Bay render the sea ice unstable for most of the year, and in so doing provide the penguins with good access northwards to open water for feeding.

The Amanda Bay colony was viewed from the air on three occasions in 1956/57, once in 1960 and again in December 1981. The only recorded ground count before 1970 was made on a one day visit on 21 May 1960. The Frozen Sea Expedition spent seven days at the colony, 27 September - 3 October and on 18 October 1983, and expeditioners made additional observations on sea ice offshore from the colony. This was the most recent thorough census, although observations during subsequent periodic visits from research stations in the Larsemann Hills and Vestfold Hills confirm the continued presence of the colony.

Other Biota

There are limited accounts of other fauna and no published accounts of flora in the immediate vicinity, although lichens have been collected from Hovde Island and the emergent headland moraine at the head of the bay at the edge of the polar plateau and the nunataks beyond. Adélie penguins (*Pygoscelis adeliae*), south polar skuas (*Catharacta maccormicki*), Wilson's storm petrels (*Oceanites oceanicus*) and Weddell seals (*Leptonychotes weddelli*) have been observed.

Climate

Limited data exists for the meteorology of Amanda Bay. The nearest areas with a substantial record of meteorological data are the Vestfold Hills (Davis), 75km to the north-east, and the Larsemann Hills (Zhongshan and Progress II station), 22km to the south-west. The prevailing wind within Amanda Bay appears to be highly variable east-south-east. The prevailing winds at Davis are north-east to east and of moderate strength, but in the Larsemann Hills violent southerly winds are often encountered. For most quarters of the wind, Amanda Bay would present ice cliffs to windward and leeward of the colony. Aerial photography has shown Amanda Bay to be almost completely filled by fast ice even during summer months.

Approximately 22km to the south-west of Amanda Bay are the Larsemann Hills, where there are permanent Russian and Chinese research stations. A major feature of the climate of the Larsemann Hills is the existence of persistent, strong katabatic winds that blow off the plateau from the north-east on most summer days. Daytime air temperatures from December to February frequently exceed 4°C and can exceed 10°C, with the mean monthly temperature a little above 0°C. Mean monthly winter temperatures are between -15°C and -18°C. Pack ice is extensive inshore throughout summer months, and the fjords and embayments are rarely ice-free. Precipitation occurs as snow and is unlikely to exceed 250 mm water equivalent annually.

Davis station, 75km to the south-west, experiences a mean monthly temperature range from +1°C in January to -18°C in July. Winds are predominantly from between north to east. The mean annual wind speed is 18km/hr. The windiest month is November, while the lightest winds are on average recorded in April. Snowfall is very light at Davis, and most snow accumulation is a result of drift snow blown from the plateau between March and October. The Vestfold Hills area is subject to frequently cloudy skies, very low absolute humidity, and a small amount of snowfall. The climate of Davis is less severe than most other locations in Antarctica because of the sheltering from katabatic winds by the Vestfold Hills. The extent of pack ice in September and October can reach as far north as 55°S. The fast ice edge in winter is usually between 5km to 15km south-west of Davis; the fast ice breaks up and is carried out to sea, usually in January.

Geology

Rock outcrops in southern Prydz Bay, comprising the Svenner Islands, the Brattstrand Cliffs, Amanda Bay, the Larsemann Hills, Bolingen Island, Søstrene Island, the Munro Kerr Mountains and Landing Bluff consist of interleaved paragneiss with high temperature mineral assemblages and structures about 500 Ma in age (Pan African). The paragneiss preserves no conclusive evidence of earlier

metamorphism, but the orthogneiss has local relics of high-grade metamorphism at 1000 Ma The Pan-African event involved crustal thickening and burial of the paragneiss, followed by exhumation. There are also a number of intrusions that post-date peak metamorphism, including granitoid plutons and widespread pegmatic dykes which cross-cut both paragneiss and the plutons. One such granitoid pluton is found at Amanda Bay. This is K-feldspar rich and post-dates early foliations in the country gneiss. It has biotite foliation and contains garnet, spinel, apatite, and is thought to be syn-tectonic.

6(ii) Special Zones within the Area

There are no special zones within the Area.

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

There are no structures within the Area.

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

There are no other protected areas in the near vicinity of Amanda Bay. Marine Plain, Antarctic Specially Protected Area No 143 (68°36'S, 78°07'E) and Hawker Island, Antarctic Specially Protected Area No 167 (68°35'S, 77°50'E) are located approximately 75km north-east in the Vestfold Hills. The Larsemann Hills, Antarctic Specially Managed Area No 6, is located approximately 22km to the south-west (69°30'S 76°19'58"E).

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:

- the actions permitted will not jeopardise the values of the Area;
- the actions permitted are in accordance with this Management Plan;
- the Permit, or an authorised copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- permits shall be issued for a finite period;
- Permit Holders shall notify the appropriate authority of any activities or measures undertaken that were not authorised permit; and
- all census and GPS data shall be made available to the permitting authority and to the Parties responsible for the development of the Management Plan.

7(i) Access to and movement within or over the Area

The coastline of Amanda Bay is partially comprised of a very large ice wall. Whenever possible, vehicle access should be from sea ice to the north of the colony, or overland from the south of the Area. Visitors to the Area are to take precautions to reduce vehicular and other disturbance to the penguins, and should avoid crossing between the colony and the sea.

It should be noted that conditions at Amanda Bay are seasonably variable, and when traversing the Area caution should be exercised. As a consequence it is not possible to be prescriptive about helicopter landing sites and access routes. Conditions should be assessed on each visit and caution exercised in accordance with the provisions of this Management Plan.

Vehicles should be kept at least 500m from any bird or concentrations of birds.

The following conditions apply to the use of helicopters:

- overflight of the colony is prohibited;
- helicopters may not land, take off or fly within 1000m of the colony;
- helicopters are to approach the Area from the north over the sea ice and, where sea ice conditions permit, land outside the Area, with access being by foot;
- helicopters approaching to land in the Area must fly low over the sea ice to avoid disturbing breeding penguins in the colony; and
- helicopters are not to be refuelled within the Area.

There are no marked pedestrian routes within the Area. Unless disturbance is authorised by permit, pedestrians should keep at least 50m from the penguins.

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 avifauna or the ecosystem of the Area.
- Essential management activities, including monitoring.
- Sampling, which should be the minimum required for the approved research programs.

As the penguins are particularly sensitive to disturbance during the following periods:

- from mid-May to late July, when they are incubating eggs;
- from late July to late September, when adults are brooding chicks; and
- from late November to late December when the chicks moult and fledge, and also during moult in late summer,
- authorised visitors should exercise particular care not to unduly disturb or interfere with the birds during these periods.

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

Field huts should be placed well away from the penguin colony at a point outside the Area. As conditions at Amanda Bay are seasonally variable, specific locations are not designated. Other structures may be installed within the Area subject to a Permit.

Markers, signs, equipment and structures erected in the Area for scientific or management purposes must be secured and maintained in good condition, and removed when no longer required. All such items should be made of materials that pose a minimum risk of environmental harm and must be marked to clearly identify the permitting country, name of principal investigator, year of installation and date of expected removal.

7(iv) Field camps

Temporary camping is allowed within the Area when necessary for purposes consistent with this Management Plan and where authorised in a Permit. As conditions at Amanda Bay are seasonally variable, specific campsite locations are not designated, but camping within 500m of the emperor penguin colony should be avoided.

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

No poultry products are to be taken into the Area, other than foods containing pasteurized egg powder, stock cubes, powdered soups and canned soups that contain poultry.

No depots of food or other supplies are to be left within the Area beyond the time period or activity for which they are required.

No live animals, plant material or micro-organisms shall be deliberately introduced into the Area.

The precautions listed in section 8(ix) shall be taken to minimise the risk of accidental introductions.

No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radionuclides or stable isotopes, which may be introduced for scientific or management purposes specified in a Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted.

Fuel is not to be stored in the Area unless required for essential purposes connected with the activity for which the Permit has been granted. All such fuel shall be removed at or before the conclusion of the permitted activity. Permanent or multi-year fuel depots are not permitted.

All material 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 as to minimise the risk of environment impacts.

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 taking or harmful interference with animals is involved this should, as a minimum standard, be in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.

7(vii) Collection 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 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, and which was not brought into the Area by the Permit holder or otherwise authorised, may be removed unless the impact of the removal is likely to be greater than leaving the material *in situ*. If this is the case, the appropriate national authority must be notified and approval obtained.

7(viii) Disposal of waste

All wastes, including all solid human wastes, 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

Permits may be granted to enter the Area to carry out biological monitoring and Area inspection activities, which may involve the collection of samples for analysis or review; the erection or maintenance of scientific equipment and structures, and signposts; or for other protective measures.

Any specific sites of long-term monitoring shall be appropriately marked and a GPS position obtained for lodgement with the Antarctic Data Directory System through the appropriate national authority.

Ornithological research shall be limited to activities that, where practicable, are non-invasive and non-disruptive to the breeding birds present within the Area. Invasive and/or disruptive research shall only be authorised if it will have only a temporary and transient effect on the population.

Visitors shall take special precautions against the introduction of alien organisms to the Area. Of particular concern are pathogenic, microbial or vegetation introductions sourced from soils, flora or fauna at other Antarctic sites, including research stations, or from regions outside Antarctica. To

minimise the risk of introductions, before entering the Area, visitors shall thoroughly clean footwear and any equipment to be used in the Area, particularly sampling equipment and markers.

7(x) Requirements for reports

Visit reports shall provide detailed information on all census data; maps and a description of locations of any new colonies or nests not previously recorded; a brief summary of research findings; comments indicating measures taken to ensure compliance with Permit conditions; and, where appropriate, copies of photographs take to illustrate reported matters.

Visitors are requested to make recommendations relevant to the management of the Area, in particular as to whether the values for which the ASPA was designated are being adequately protected and whether management measures are effective.

The report should be submitted as soon as practicable after the visit to the ASPA has been completed, but no later than six months after the visit has occurred. A copy of the report should be made available to the Permit issuing authority and to the parties responsible for development of the Management Plan (if different) for the purposes of reviewing the Management Plan in accordance with the Antarctic Treaty system requirements. Reports should include a completed SCAR Visit Report, or such information as required by national laws. The permitting authority should maintain a record of the report for an indefinite period and shall make this available to SCAR, CCAMLR, COMNAP, and to interested parties upon request.

7(xi) Emergency provision

Exceptions to restrictions outlined in the Management Plan are in an emergency as specified in Article 11 of Annex V of the Protocol on Environmental Protection to the Antarctic Treaty (the Protocol).

8. Supporting documentation

Some or all of the data used within this paper were obtained from the Australian Antarctic Data Centre (IDN Node AMD/AU), a part of the Australian Antarctic Division (Commonwealth of Australia).

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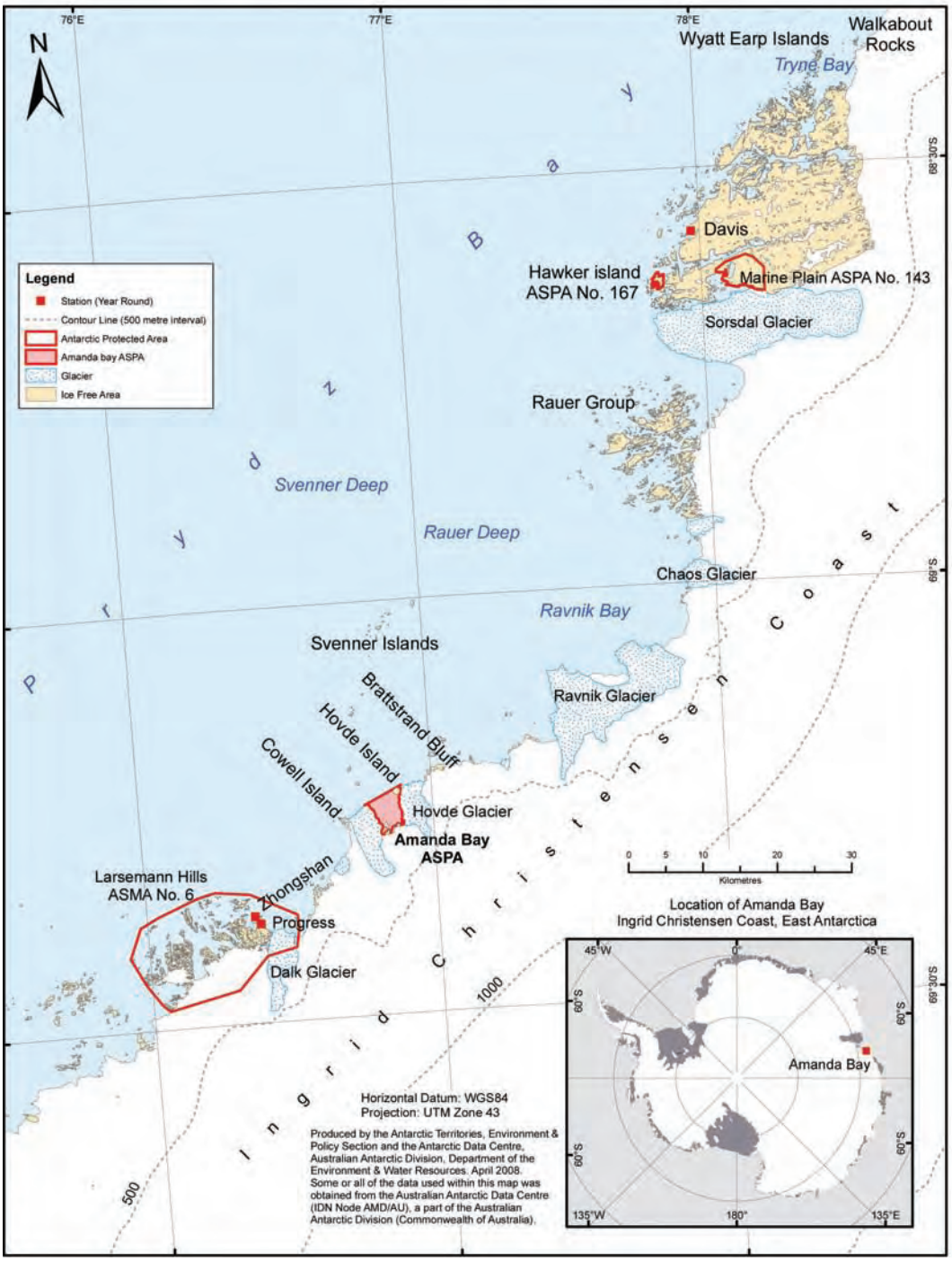
Appendix 1. History of emperor penguin population observations at Amanda Bay, 1956-1997

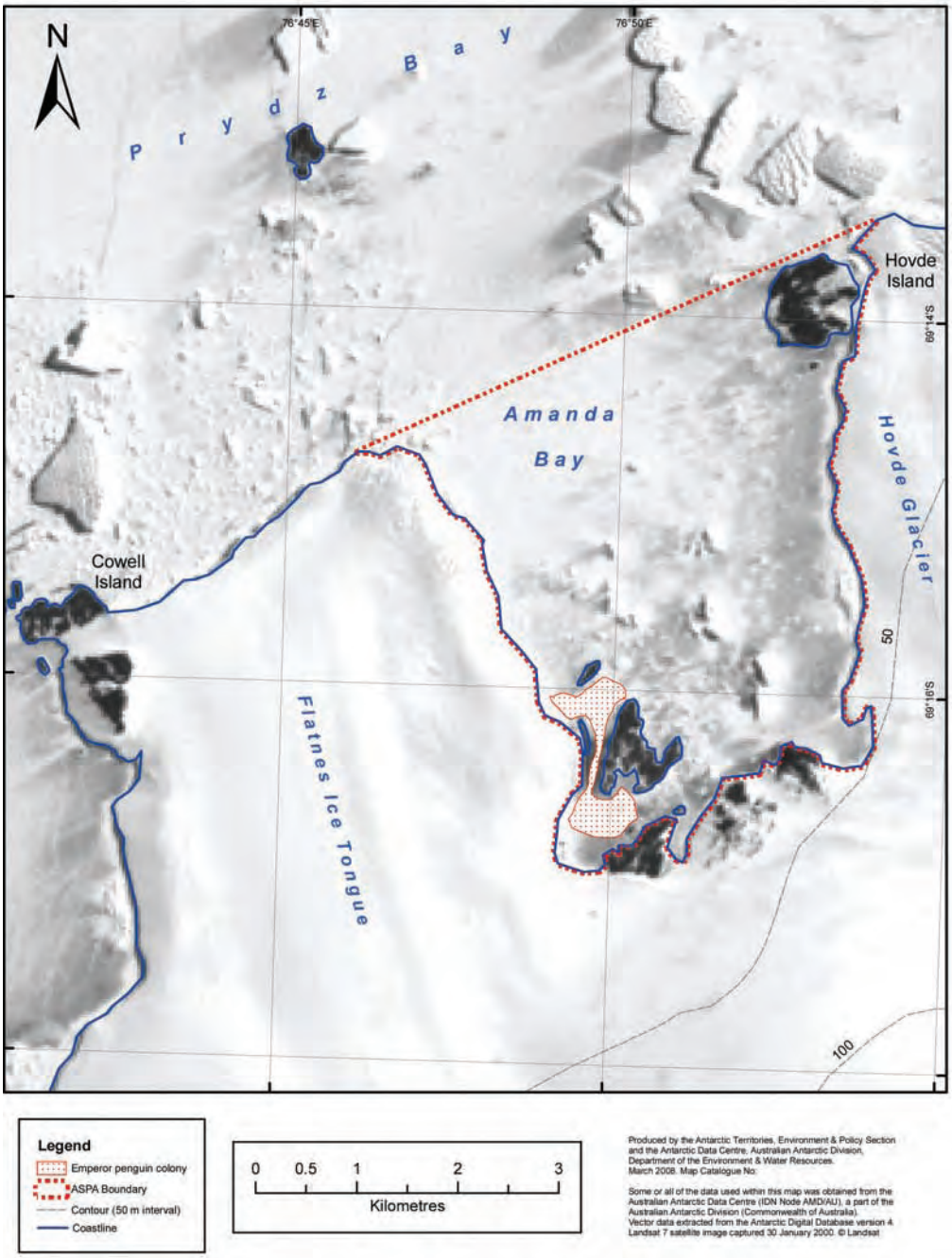
Date	Estimated number of penguins present in colony	Comments	Reference
1956/57	5000 birds along Ingrid Christensen Coast	General reference, no systematic census	Korotkevich 1964
September, 1957	1000 – 2000 birds	No systematic count, no distinction between adults and chicks	Willing 1958
1961	1500 adults	Unspecified reference, no date given, no systematic count conducted	ANARE in Horne 1983
29/30 Sep 1983	2339 ± 69 chicks, 2448 ± 23 adults	Adults: en masse count after Budd (1961), chicks: Combined en masse count group I and indirect count of group II (see Budd 1961)	Cracknell 1986
1987	9000 ?	Unspecified reference, no date, no specification of unit, no systematic census	ANARE in Woehler & Johnstone 1991
13 Dec 1992	5500 – 6000 chicks	Chicks in five groups, estimate based on grid counts	Todd 1999
21 Dec 1996	1000 – 5000 total birds	Rough estimate from overflight	Todd 1999
Nov 1997	8000 chicks	No systematic count, rough estimate	J. Gallagher, pers. comm, in Giese and Riddle 1999

Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division

Map A: Amanda Bay Antarctic Specially Protected Area No.169, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica. Location of Amanda Bay



Map B: Amanda Bay, Antarctic Specially Protected Area No 169, Ingrid Christensen Coast , Princess Elizabeth Land, East Antarctica. Location of Emperor Penguin Colony and Physical Features.



Measure 4 (2008)

Antarctic Specially Protected Area No 170: Marion Nunataks, Charcot Island, Antarctic Peninsula

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 Marion Nunataks, Charcot Island, Antarctic Peninsula, 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 Marion Nunataks, Charcot Island, Antarctic Peninsula 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) Marion Nunataks, Charcot Island, Antarctic Peninsula be designated as Antarctic Specially Protected Area No 170; and

2) the Management Plan which is annexed to this Measure be approved.

Management Plan for Antarctic Specially Protected Area No 170

MARION NUNATAKS, CHARCOT ISLAND, ANTARCTIC PENINSULA

Introduction

Marion Nunataks (75°15' W, 69° 45' S) lie on the northern edge of Charcot Island, a remote ice-covered island to the west of Alexander Island, Antarctic Peninsula, in the eastern Bellingshausen Sea. Marion Nunataks form a 12km chain of rock outcrops on the mid-north coast of the island and stretch from Mount Monique on the western end to Mount Martine on the eastern end. The Area is 176km2 (maximum dimensions are 9.2km north-south and 19.2km east-west) and includes all of the known ice-free land on Charcot Island.

Past visits to the Area have been few, rarely more than a few days in duration and focussed initially on geological research. However, during visits between 1997 and 2000, British Antarctic Survey scientists discovered a rich biological site, located on the nunatak at 69°44'55" S, 75°15'00" W.

The nunatak has several unique characteristics including two lichens species that have not been recorded elsewhere in Antarctica, mosses that are rarely found at such southerly latitudes and, perhaps most significantly off all, a complete lack of predatory arthropods and Collembola which are common at all other equivalent sites within the biogeographical zone. The nunataks are extremely vulnerable to introduction of locally and globally non-indigenous species that could be carried unintentionally to the site by visitors.

The Area fits into the wider context of the Antarctic Protected Area system by protecting the unique species assemblage found on Marion Nunataks and being the first to protect a substantial area of ground that is representative of the permanent ice-cap and nunataks that exist commonly in the southern Antarctic Peninsula. The Area is therefore designated as an Antarctic Specially Protected Area to protect its outstanding environmental values and to facilitate ongoing and planned scientific research.

1. Description of values to be protected

The outstanding environmental values of the Area are based on the following unique species assemblages found in the terrestrial environment:

The terrestrial fauna is unique for the maritime Antarctic in that it appears to contain neither predatory arthropods nor Collembola (springtails), which are otherwise ubiquitous and important members of the terrestrial fauna of the zone. As such, the site provides unique opportunities for the scientific study of terrestrial biological communities from the maritime Antarctic where key ecological components are absent.

The Marion Nunataks flora includes an exceptional development of three mosses that are encountered only rarely at latitudes south of 65 °S (*Brachythecium austrosalebrosum*, *Dicranoweisia crispula* and *Polytrichium piliferum*).

The Area includes two lichen species that are previously unrecorded from Antarctica (*Psilolechia lucida* and *Umbilicaria* aff. *thamnodes*) and represents the furthest south known occurrence for several lichen species (including *Frutidella caesioatra*, *Massalongia* spp., *Ochrolechia frigida*, *Usnea aurantiaco-atra* and *Usnea trachycarpa*).

2. Aims and objectives

The aims and objectives of this Management Plan are to:

- Permit only research of a compelling scientific nature, which cannot be served elsewhere, particularly relating to the simple ecosystems and isolated terrestrial communities of the maritime Antarctic.
- Minimise the risk of introduction of locally non-native soils, plants, animals and microorganisms into the Area and avoid changes to the structure and composition of the terrestrial biota.
- Avoid degradation of the values of the Area by preventing unnecessary human disturbance and sampling in the Area.

3. Management activities

Management activities that involve visits to the Area and erection of permanent structures may themselves significantly increase the risk of irreversible human impact, through introductions of locally non-native species. The emphasis for management of the site should be to avoid (1) unnecessary visits to the Area and (2) erection of permanent structures such as location notice boards and signs. The following management activities are to be undertaken to protect the values of the Area:

- Due to the sensitive nature of the Area and the severity of the consequences should non-native species be introduced, management visits shall be kept to an absolute minimum.
- Field parties shall be fully briefed by the national authority on the values that are to be protected and the precautions and mitigation measures detailed in this Management Plan.
- National Antarctic Programmes operating in the region are encouraged to consult together with a view to minimising human impact.

4. Period of designation

Designation is for an indefinite period of time.

5. Maps

- Map 1. Charcot Island in relation to Alexander Island and the Antarctic Peninsula. Map specifications: Projection: WGS84 Antarctic Polar Stereographic. Standard parallel: 71 °S. Central meridian 55 °W.
- Map 2. Charcot Island including the Marion Nunataks Antarctic Specially Protected Area boundary. Map specifications: Projection: Universal Transverse Mercator UTM Zone 18 S. Central meridian 75 °W. The map was produced from a Landsat image (reference number: 223109_26012002) from 26 January 2002.
- Map 3. Marion Nunataks with Antarctic Specially Protected Area boundary. The Area comprises the icesheet, nunataks, rocks, sea ice and islands lying within the rectangle. The Area does not include the marine environment below the low water mark. The circle shows the location of the known biological site. The penguin symbol shows the approximate location of the Adelie penguin colony. Map specifications: Projection: Universal Transverse

Mercator UTM Zone 18 S. Central meridian 75 °W. The map was produced from a Landsat image (reference number: 223109_26012002) from 26 January 2002.

- Map 4. Environmental domains analysis for Charcot Island (Morgan *et al.*, 2005; Landcare Research NZ) [see section 6(i) *Biogeography and environmental domains analysis*]. Map specifications: Projection: Universal Transverse Mercator UTM Zone 18 S. Central meridian 75 °W.

6. Description of the Area

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

Charcot Island is roughly circular in shape, approximately 50km across and is separated from north-west Alexander Island (~100km away) by Wilkins Sound and Wilkins Ice shelf (Maps 1 and 2). Charcot Island is ice-covered with the exception of Marion Nunataks (69°45' S, 75°15' W), which form a 12km chain of rock outcrops that overlook the mid-north coast of Charcot Island, and consist predominantly of steep north–facing cliffs (Map 3). Mount Monique lies towards the western end of the Marion Nunataks chain and Mount Martine to the eastern end. The summits of both peaks are between 750 and 1000 metres above sea level.

The Area comprises the icesheet, nunataks, rocks, sea ice and islands [including Cheeseman Island (69°43'24" S, 75°11'00" W)] lying within a rectangle enclosed by the following coordinates (Map 3):

	Latitude	Longitude
1	69°43'00"	75°30'00"
2	69°43'00"	75°00'00"
3	69°48'00"	75°30'00"
4	69°48'00"	75°00'00"

There are no boundary markers delimiting the Area. The maximum dimensions of the Area are 9.2km north-south and 19.2km east-west. The Area does not include the marine environment below the low water mark. The protected land area is 176km^2 and includes all of the ice-free land on Charcot Island (known as of 2008). The Area also includes ice cap that extends at least 4km to the south and east of the nunataks, which is intended to act as a buffer zone to prevent accidental importation of species not native to the Area (see Map 3).

Reports suggest that no landing on Charcot Island has ever been made by sea. The steep ice cliffs on the north coast of Charcot Island, make access from the sea difficult.

Climatic conditions

No climatic data are available, but Charcot Island lies in the track of depressions approaching the Antarctic Peninsula from the west. Satellite imagery indicates that the island is predominantly covered by cloud, and may not become free of winter pack ice until late summer, if at all.

Biogeography and environmental domains analysis

Research by Smith (1984) and Peat *et al.* (2007) describes the recognised biogeographical regions present within the Antarctic Peninsula. Antarctica can be divided into three major biological

provinces: northern maritime, southern maritime and continental. Charcot Island lies within the southern maritime zone (Smith, 1984), approximately 600km north of the major biogeographic discontinuity that separates the Antarctic Peninsula and continental Antarctica known at the Gressitt Line (Chown and Convey, 2007).

According to Morgan *et al*. (2005), almost all of Charcot Island falls within environmental domain C of the environmental domains analysis for the Antarctic continent. Domain C is generally found at the base of the Antarctic Peninsula, and also includes most of Alexander Island and adjacent coastal, islands and low-lying areas connected to the main continent by ice shelf. The high latitude results in lower estimated solar radiation and a shorter period with normal diurnal patterns than more northerly environments. Seasonal temperature ranges are also more pronounced.

A small area of environmental domain B exists over Marion Nunataks. The different classification is due to the increased average slope at the nunataks compared to the surrounding ice sheet.

The only other protected area in domain C is ASPA No 147, Ablation Valley, Ganymede Heights, which is situated on the eastern coast of Alexander Island. ASPA No 147 is atypical of domain C as it encompasses a large biologically rich area of ice-free ground. Marion Nunataks are more representative of domain C with a substantial proportion of the Area consisting of permanent ice cap.

Geology

The rocks of Marion Nunataks are turbiditic sandstones and mudstones, similar in appearance to those found on nearby Alexander Island. However, geochronology and isotopic analyses from detrital minerals (grains that survive erosion, transport and deposition and so preserve information on the source rock) suggest that Charcot Island rocks are different to those on Alexander Island, and possibly the whole of the Antarctic Peninsula (Michael Flowerdew, pers. comm.).

Alexander Island rocks are thought to have formed from sediments eroded off rocks from the Antarctic Peninsula. However, Charcot Island sediments were originally deposited within a deep marine trench that formed as a result of the destruction of the Pacific plate beneath the edge of the ancient continent of Gondwana. The sedimentary rocks were scraped off the Pacific plate as it was destroyed and accreted to the Gondwana continent, causing them to be folded and methamorphosed under high pressure. Charcot Island sedimentary rocks are thought to be Cretaceous (deposited around 120 million years ago), and may have been transported over long distances in a relatively short time interval before becoming juxtaposed to Alexander Island around 107 million years ago.

All geological samples taken from Charcot Island have been sampled from within the Area.

Biology

The known terrestrial biological site (located on the nunatak at 69°44’55" S, 75°15’00" W) extends approximately 200m east-west, by a maximum of 50m north-south and harbours an extensive biota (Convey *et al.*, 2000). This vegetated bluff consists of rock gently sloping to the north-west, which rapidly steepens to broken cliffs which drop to the sea. Water has been observed to be freely available at the site during all summer visits between December 1997 and January 2000.

Biota in the known terrestrial biological site include:

- Bryophytes: 16 mosses (including *Andreaea* spp., *Bartramia patens*, *Bryum pseudotriquetrum*, *Brachythecium austrosalebrosum*, *Ceratodon purpureus*, *Dicranoweisia crispula*, *Grimmia reflexidens*, *Hennediella heimii*, *Hypnum revolutum*, *Pohlia* spp., *Polytrichum piliferum*, *Schistidium antarctici*, *Syntrichia princeps*) and one liverwort (*Cephaloziella varians*). The dominant species are *Andreaea* spp., *Dicranoweisia crispula* and *Polytrichum piliferum*, which are usually only common in the sub-Antarctic. The abundance of *B. austrosalebrosum*

is remarkable as it is a hydric species requiring a continuous supply of water. The mosses generally occur on wet rock slabs irrigated by trickling melt water from late snow patches which has allowed the formation of cushions c. 15 cm deep. (Smith, 1998; Convey *et al*., 2000).

- Foliose alga: *Prasiola crispa* (Smith, 1998; Convey *et al*., 2000).
- Lichens: 34 species, plus two identified to genus level. The dominant lichen species are *Pseudophebe minuscule*, *Umbilicaria decussata*, *Usnea sphacelata* and various crustose taxa (Smith, 1998; Convey *et al*., 2000). Lichen communities occupy much of the dry, windswept stony ground and ridges. Melt channels on sloping rock slabs are lined with large thalli (up to ~15 cm across) of *Umbilicaria antarctica*. The Area includes two lichen species that are previously unrecorded from Antarctica (*Psilolechia lucida* and *Umbilicaria aff. thamnodes*) and represents the furthest south known occurrence for several lichen species (including *Frutidella caesioatra*, *Massalongia* spp., *Ochrolechia frigida*, *Usnea aurantiaco-atra* and *Usnea trachycarpa*). Unusually, the widespread *Usnea antarctica* was not recorded from the site.
- Invertebrates: Seven species of Acari, seven Nematoda and four Tardigrada were present in collections from Marion Nunataks. Uniquely, neither acarine predators nor Collembola were recorded (Convey, 1999; Convey *et al*., 2000).
- Vertebrates: A small colony of 60 Adelie penguins (*Pygoscelis adeliae*) containing many chicks was reported from the small islands just to the north-west of Mount Monique (Henderson, 1976; Croxall and Kirkwood, 1979). If still present, this is the most southerly colony of Adelie penguins on the Antarctic Peninsula. Other than the penguin colony, the Area has little vertebrate influence. South polar skuas (*Catharacta maccormicki*) are observed in the Area and a single nest was found on moss turf. Other birds observed and considered likely to breed in the area were small numbers of Antarctic terns (*Sterna vittata*), snow petrels (*Pagodroma nivea*), Antarctic petrels (*Thalassoica antarctica*) and Wilson's storm petrels (*Oceanites oceanicus* Kühl) (Henderson, 1976; Smith, 1998; Convey *et al*., 2000).

Although all elements of the biota recorded are typical of the maritime Antarctic biogeographical zone (Smith, 1984), community composition differs strikingly in detail from that found at other sites in the biome. The apparent absence of Collembola, recorded at all other known maritime Antarctic sites, contrasts directly with their importance elsewhere. Numbers of other animal species recovered from Marion Nunataks, suggest population densities comparable with those found in many other coastal maritime Antarctic sites and at least an order of magnitude greater than those usually found in Continental Antarctic sites, or on south-east Alexander Island at the southern limit of the maritime Antarctic. The numerical contribution made by springtails to faunas elsewhere in the maritime Antarctic appears to be replaced by several smaller prostigmatid mites (*Nanorchestes nivalis* and *Eupodes minutes*) on Charcot Island. The absence of predatory taxa is also an exceptional element of the Charcot Island arthropod community, particularly given the arthropod population densities.

The terrestrial biological communities on Charcot Island are extremely vulnerable to accidental human-mediated introduction of both native Antarctic and alien biota. Convey *et al*. (2000) write:

> *'As visitors to this island will inevitably arrive from other locations within the [Antarctic] Maritime zone, the potential for accidental transfer in soil or vegetation adhering to boots or clothing, rucksacks, etc. is great. Extreme caution is therefore required to avoid the transfer of native species between isolated populations within the Maritime Antarctic, highlighting an urgent need for strict control measures to be applied to all visitors to the site and others like it to conserve them for the future.'*

Past human activity

The Area is extremely isolated and difficult to access, other than by air, and as a result has been visited by only a small number of people, and these visits have been generally brief. Charcot Island was discovered on 11 January 1910 by Dr Jean Baptiste Charcot of the French Antarctic Expedition. The first landing on the island was made on 21 November 1947 by the Ronne Antarctic Research Expedition (RARE) when parts of the island were photographed from the air (Searle, 1963).

A temporary hut (30 m^2) and airstrip were established by the Chilean Antarctic Expedition and Chilean Air Force (FACH) in November 1982. The camp was situated on ice a few kilometres east of Mount Martine (69°43'S 75°00'W), on what is now the eastern boundary of the Area. The hut was buried by snow during the winter of 1983 and no evidence of the station remains on the surface (Comité Nacional de Investigaciones Antárticas, 1983; Verónica Vallejos, pers. comm.).

British Antarctic Survey (BAS) geologists and cartographers made brief visits to Marion Nunataks in January 1975, 9-13 February 1976 and 17 January 1995. BAS biologists made day trips to the nunatak at 69°44'55" S, 75°15'00" W on 22 December 1997, 20-21 January 1999, 5 February 1999 and 16 January 2000. Reports suggest that there have been less than 10 field party visits to Marion Nunataks since their first visit in 1975. Visits have generally been limited to a few days or hours. Importantly, no further visits have been made to Marion Nunataks Area since the discovery of its unique ecosystems (Convey *et al.*, 2000). As a result, it is probable that the ecosystem still exists in it original pristine state and no introduction of macrobiota has occurred.

6(ii) Restricted zones within the Area

None.

6(iii) Location of structures within the Area

No installations or caches are known to exist in the Area. One cairn was constructed on the highest point (~126m above sea level) of the small nunatak at 69°44'55" S, 75°15'00" W during the 1975-76 United States Geological Survey-British Antarctic Survey Doppler Satellite Programme (Schoonmaker and Gatson, 1976). The 0.6m high cairn marks the site of Station Jon and contains a standard USGS brass Antarctica tablet stamped 'Jon 1975-1976' set loosely in faulted rock. A metal tent pole (2.4 m) was erected in the cairn; however, there was no record of it in visit reports from 1995 onwards (Anonymous, 1977; Morgan, 1995).

6(iv) Location of other ASPAs and ASMAs within close proximity

There are no other protected or managed areas nearby, with the nearest being ASPA No 147, Ablation Valley - Ganymede Heights, which is situated 270km away on the eastern coast of Alexander Island.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a permit issued by an appropriate national authority under Article 3, paragraph 4, and Article 7 of Annex V to the Enviromental Protocol to the Antarctic Treaty.

Conditions for issuing a permit to enter the Area are that:

- it is issued only for a compelling scientific reason, which cannot be served elsewhere
- the activities permitted will not jeopardize the natural ecological system in the Area
- any management activities are in support of the objectives of the Management Plan

- the Permit, or an authorised copy, must be carried within the Antarctic Specially Protected Area
- a report is supplied to the authority or authorities named in the permit, which shall include a section on the environmental state of the Area
- any permit shall be issued for a stated period

7(i) Access to and movement within the Area

No access points are specified, but landings are usually most safely made by aircraft as access from the sea is made difficult due to step ice cliffs around much of the coastline.

Where possible, day visits to the Area are strongly recommended in order to reduce the requirement for camping equipment, and the associated risk of transferring locally non-native species. If scientific or management requirements cannot be met within the time scale of a single day visit, then longer visits requiring camping within the Area are permitted, but only after all other options have been full explored and rejected.

Entry of personnel or equipment arriving directly from other biological field sites to the Area is prohibited. It is a condition of entry into the Area that all visitors and equipment must travel via an Antarctic station or ship where thorough cleaning of clothing and equipment has been performed, as detailed in this Management Plan [section 7(ix)].

To protect the values of the Area and minimise the risk of introduction of locally non-native species, the following restrictions apply within the Area:

(a) Aircraft

Aircraft are only permitted to land in the Area if they have performed the measures as detailed in this Management Plan [section 7(ix)]. Otherwise aircraft must land outside the Area. Fixed and rotory wing aircraft are prohibited from landing within 100m of rock outcrops and associated flora and fauna within the Area.

Aircraft flying near the Adelie penguin colony on the small islands just to the north-west of Mount Monique (69°45’30" S, 75°25’00" W) must comply with the guidelines detailed in ‘Guidelines for the operation of aircraft near concentrations of birds in Antarctica’ (Antarctic Treaty Consultative Meeting, 2004).

(b) Land vehicles and sledges

Land vehicles shall not be taken into the Area unless essential for scientific, management or safety reasons.

Land vehicles and sledges are only permitted within the Area if they are compliant with the measures as detailed in this Management Plan [section 7(ix)].

Once inside the Area, skidoos, sledges and other land vehicles are prohibited within 100m of rock outcrops and associated flora and fauna. The remaining 100m of the approach to rock outcrops must be made on foot.

(c) Human movement

Pedestrian traffic shall be keep to an absolute minimum necessary to be consistent with the objectives of any permitted activities.

No pedestrian routes are designated but persons on foot should at all times avoid disturbance or damage to vegetation and periglacial features.

Visitors shall avoid walking on areas of visible vegetation or moist soil.

Strict personal quarantine precautions shall be taken as described in section 7(ix) of this Management Plan.

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

Compelling scientific research that cannot be undertaken elsewhere and which will not jeopardize the ecosystem of the Area.

Essential management activities, including monitoring.

7(iii) Installation, modification or removal of structures

No structures may be erected in the Area, nor equipment installed, except for essential scientific or management activities, as specified in the permit. If equipment is installed every effort must be taken to ensure the equipment is sterile and free of imported seeds, spores, propagules, soil, microorganisms and invertebrates [see section 7(ix)]. Existing structures must not be removed.

7(iv) Location of field camps

Camping within the Area is only permitted if scientific and management objectives cannot be achieved during a day trip to the Area. Camping may also occur within the Area during an emergency.

Unless unavoidable for safety reason, tents should be erected on snow or ice, at least 500m from the nearest rock outcrops.

Field camp equipment must be cleaned and transported as described in section 7(ix) of this Management Plan.

7(v) Restrictions on materials and organisms that may be brought into the Area

It is essential that activities conducted by visiting scientists or managers do not introduce new species into the Area. No living animals, plant material or microorganisms shall be deliberately introduced into the Area. All necessary precautions shall be taken to prevent accidental introductions. All sampling equipment brought into the Area shall have been thoroughly cleaned [see section 7(ix)].

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 a compelling scientific purpose 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. Fuel, food and other materials must only be deposited on snow or ice that is at least 500m from the nearest rock outcrop. Permanent depots are not permitted.

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

Any removal or disturbance of soil, vegetation or invertebrates is prohibited, except in accordance with a permit issued under Article 3 of Annex II to the Environmental Protocol by the appropriate

national authority. Any sampling is to be kept to an absolute minimum required for scientific or management purposes, and carried out using techniques which minimise disturbance to surrounding soil, ice structures and biota. Any sampling of experimental sites should be photographed and the location recorded in detail and reported to the permitting authority. When animal taking or harmful interference is involved this should, as a minimum standard, be in accordance with the 'SCAR code of conduct for the use of animals for scientific purposes in Antarctica'.

7(vii) Collection 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 issued under Article 3 of Annex II by the appropriate national authority. Debris of man-made origin likely to compromise the values of the Area, which was not brought into the Area by the permit holder or otherwise authorised, may be removed from any part of the Area, 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, including all human waste.

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

To help protect the ecological and scientific values derived from the isolation and low level of human impact at the Areas, visitors shall take special precautions against the introduction of non-native species. Of particular concern are animal or vegetation introductions sourced from:

- soils from any other Antarctic sites, including those near the stations
- soils from regions outside Antarctica

It is a condition of entry to the Area that visitors shall minimize the risk of introductions in accordance with the following measures:

(a) Aircraft

The interior and exterior of aircraft shall have been carefully inspected and cleaned as near as possible to the time of departure of the aircraft from the originating Antarctic station or ship. It is recommended that this include thorough sweeping and vacuuming of the inside of the aircraft and steam-cleaning or brushing of the exterior of the aircraft.

Any aircraft that has landed at other rock airstrips or near biologically rich sites since being cleaned at the Antarctic station or ship is not permitted to enter the Area.

Fixed-wing aircraft that departed from a gravel runway must have landed, or trailed their skis, on clean snow outside the Area in an attempt to dislodge any soil from the skis, before landing within the Area.

(b) Land vehicles and sledges

Before land vehicles and sledges enter the Area, all mud, soil, vegetation and excessive dirt and grease must have been removed. Ideally, this should have been completed on the originating Antarctic station or ship before transfer of the vehicles into the field.

Land vehicles shall not enter the Area if after cleaning they have been driven over areas of rock or soil outside the Area.

(c) Field camp equipment

All camping equipment, including emergency camping equipment, shall have been thoroughly cleaned (i.e. free of soil and propagules and, if practicable, sealed in plastic bags or sheeting) before being taken into the Area. This includes emergency camping equipment carried aboard any aircraft landing in the Area.

(d) Sampling equipment, scientific apparatus and field-site markers

To the greatest extent possible, all sampling equipment, scientific apparatus and markers brought into the Area shall have been sterilized, and maintained in a sterile condition, before being used within the Area. Sterilization should be by an accepted method, including UV radiation, autoclaving or by surface sterilisation using 70% ethanol or a commercially available biocide (e.g. Virkon®).

(e) General field equipment

General equipment includes harnesses, crampons, climbing equipment, ice axes, walking poles, ski equipment, temporary route markers, pulks, sledges, camera and video equipment, rucksacks, sledge boxes and all other personal equipment.

All equipment used inside the Area should be free of biological propagules such as seeds, eggs, insects, fragments of vegetation and soil. To the maximum extent practicable, all equipment used, or brought into the Area, shall have been thoroughly cleaned and sterilized at the originating Antarctic station or ship. Equipment shall have been maintained in this condition before entering the Area, preferably by sealing in plastic bags or other clean containers.

(f) Outer clothing

Outer clothing includes hats, gloves, fleeces or jumpers, jackets, fabric or fleece trousers, waterproof trousers or salopettes, socks, boots and any other clothing likely to be worn as a surface layer. Outer clothing worn inside the Area should be free of biological propagules such as seeds, eggs, insects, fragments of vegetation and soil. To the maximum extent practicable, footwear and outer clothing used, or brought into the Area, shall have been thoroughly laundered and cleaned since previous use. Particular attention should be given to removing seeds and propagules from Velcro®. New clothing, taken straight out of the manufacturer's packaging just before entering the Area, need not undergo cleaning.

Further procedures for ensuring non-native species are not transferred into the Area on boots and clothing depend upon whether the visit is via (i) a direct aircraft landing in the Area, or (ii) overland movement into the Area from outside its boundaries.

i. Direct aircraft landing in the Area

Sterile protective over-clothing shall be worn. The protective clothing shall be put on immediately prior to leaving the aircraft. Spare boots, previously cleaned using a biocide then sealed in plastic bags, should be unwrapped and put on just before entering the Area.

ii. Overland movement into the Area from outside its boundaries

Sterile protective over-clothing is not recommended as, once within the Area, significant amounts of travel over crevassed ground may be required and use of sterile protective over-clothing may interfere with safety equipment such as ropes and harnesses.

For overland movement into the Area, alternative measures must be used. Each visitor is required to bring at least two sets of outer clothing. The first set should be worn for the journey to the Area

boundary. The second set of outer clothing, which has previously be cleaned and sealed in plastic, should only be worn inside the Area. Immediately before entering the Area, visitors should change into their clean set of outer clothing. Spare boots, previously cleaned using a biocide then sealed in plastic bags, should be unwrapped and put on just before entering the Area. The removed unclean outer clothing should be stored in sealed, labelled plastic bags, preferably outside the Area.

On leaving the Area by overland travel, the clothing worn in the Area should be (1) removed and stored in a clean, labelled plastic bag until needed for any further trips into the Area, or (2) returned to the originating Antarctic station or ship for cleaning.

7(x) Requirements for reports

Parties shall require the principal holder of each permit issued by it to submit to the appropriate authority a report describing the activities undertaken within six months of the visit. Such reports should include, as appropriate, the information identified in the Visit Report Form suggested by SCAR. Under item 10 of this form (mode of transport to/from the area) particular note should be made of locations where aircraft took off and landed. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary description 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 organising the scientific use of the Area.

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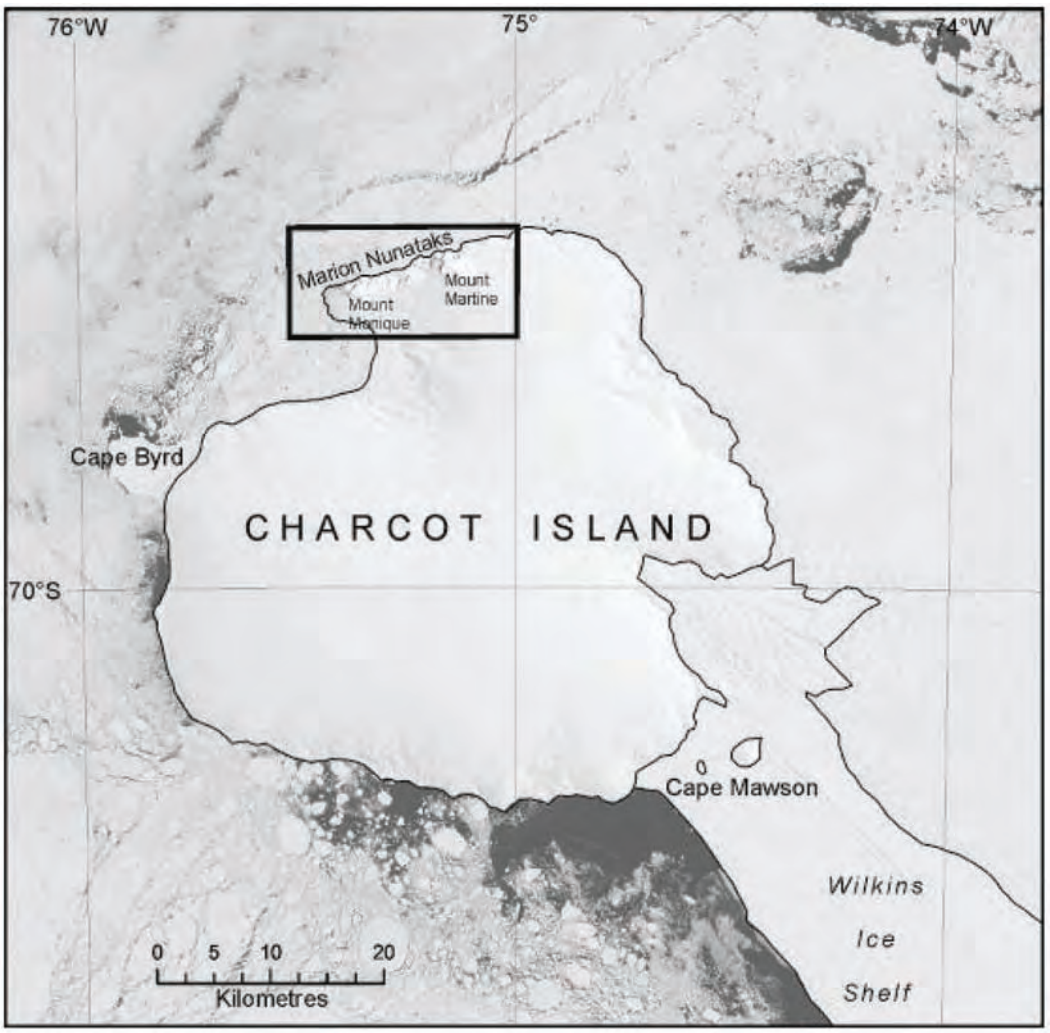
Map 1. Charcot Island in relation to Alexander Island and the Antarctic Peninsula. Map specifications: Projection: WGS84 Antarctic Polar Stereographic. Standard parallel: 71 °S. Central meridian 55 °W.

Map 2. Charcot Island including the Marion Nunataks Antarctic Specially Protected Area boundary.

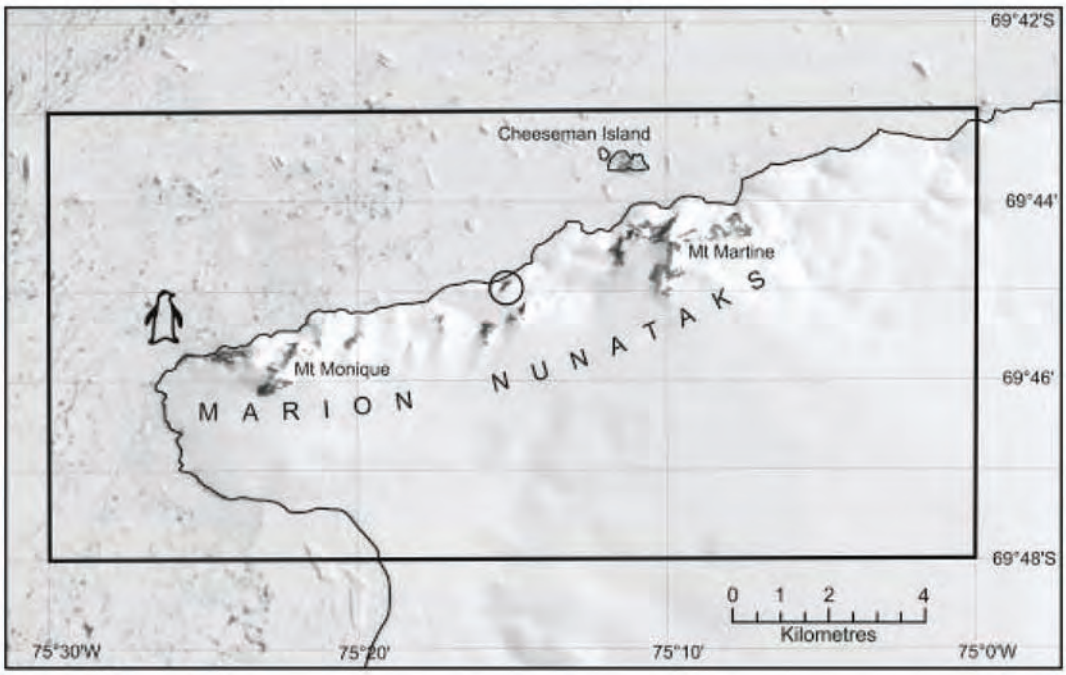
Map specifications: Projection: Universal Transverse Mercator UTM Zone 18 S. Central meridian 75 °W. The map was produced from a Landsat image (reference number: 223109_26012002) from 26 January 2002.



Map 3. Marion Nunataks with Antarctic Specially Protected Area boundary. The Area comprises the icesheet, nunataks, rocks, sea ice and islands lying within the rectangle. The Area does not include the marine environment below the low water mark.

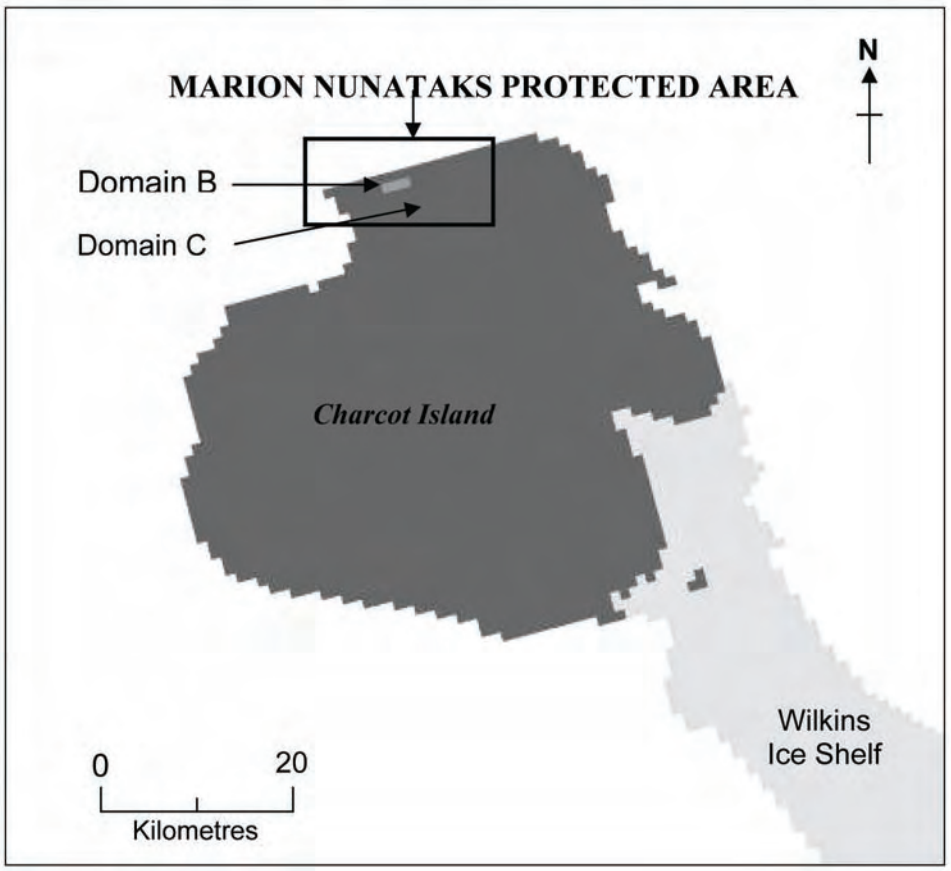
The circle shows the location of the known biological site. The penguin symbol shows the approximate location of the Adelie penguin colony.

Map specifications: Projection: Universal Transverse Mercator UTM Zone 18 S. Central meridian 75 °W. The map was produced from a Landsat image (reference number: 223109_26012002) from 26 January 2002.



Map 4. Environmental domains analysis for Charcot Island (Morgan *et al.*, 2005; Landcare Research NZ) [see section 6(i) *Biogeography and environmental domains analysis*].

Map specifications: Projection: Universal Transverse Mercator UTM Zone 18 S. Central meridian 75 °W.



Measure 5 (2008)

Antarctic Specially Protected Area No 118 (Summit of Mount Melbourne, Victoria 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 XIV-5 (1987), which designated Summit of Mount Melbourne, North Victoria Land as Site of Special Scientific Interest ("SSSI") No 24 and annexed a Management Plan for the Site;
- Resolution 3 (1996), which extended the expiry date of SSSI 24 from 31 December 1997 to 31 December 2000;
- Measure 2 (2000), which extended the expiry date of SSSI 24 from 31 December 2000 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 24 as Antarctic Specially Protected Area No 118;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 118;

Desiring to replace the existing Management Plan for ASPA 118 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 118: Summit of Mount Melbourne, Victoria Land which is annexed to this Measure, be approved; and

2) the Management Plan for ASPA 118 annexed to Recommendation XIV-5 (1987) shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 118

SUMMIT OF MOUNT MELBOURNE, VICTORIA LAND

1. Description of values to be protected

An area of 6km^2 on the summit of Mount Melbourne was originally designated in Recommendations XVI-5 (1987, SSSI No 24, Summit of Mount Melbourne) and XVI-8 (1991 SPA No 22, Cryptogam Ridge, Mount Melbourne) after proposals by New Zealand and Italy on the grounds that these areas contain geothermal soils that support a unique and diverse biological community. The warmest areas of ground created by fumaroles support patches of moss, liverwort and algae along with one species of invertebrate protozoan. ASPA No 118a (SPA No 22) was originally enclosed within ASPA No 118b (SSSI No 24) in order to provide more stringent access conditions to this part of the Mt Melbourne summit area. ASPA 118a and 118b have now been merged in the current plan, and Prohibited and Restricted zones provide for more stringent access conditions within the former SPA. The outer boundaries of the Area follow the original SSSI No 24 designation.

The biotic communities of the closest documented fumarolic ground, 400km to the south on Tramway Ridge, Mt Erebus and on Mt Rittman, in the Mountaineer Range over 180km to the north, are considered significantly different to that on Mt Melbourne. Mount Melbourne has the only known leafy example of the moss *Campylopus pyriformis* on the Antarctic continent (the moss is present on Mt Erebus only in the protonema stage). A new species of moss *Pohlia nutans* (very genetically similar to another species found on Mt Rittman) was discovered in 2002 in small mosses in the fumeroles on the NW slope of Mt Melbourne. The algae *Stigonema ocellatum* and *Chlorella* cf. *reniformis* are the only Antarctic records. Several other algal species are not recorded elsewhere in Antarctica, apart from Mt Erebus. An entirely new species of thermophilic bacteria, *Bacillus thermoantarcticus*, has also been discovered on the summit (Manca *et al* 1996; Lama *et al* 1996, 2001; Nicolaus *et al* 2000, 2001, 2002), and some enzymes have been isolated from these microorganisms (Lama *et al* 2001, 2004, 2005; Nicolaus *et al* 2002, 2004). Biochemical and microbiological studies have also been carried out on hot substrata in the area (Bargagli *et al* 2004; Pepi *et al* 2005).

The total cover of vegetation within the Area is hard to assess due to largely permanent snow cover, but is estimated at 100-200 m^2. Despite this relatively small area of cover, the uniqueness and fragility of the biological communities and their physical environment are such that the Area is of high scientific and conservation value and vulnerable to human disturbance. The dangers of introducing new organisms and disturbance by trampling and sampling are great and justify this site being given long-term special protection. Extensive ice-free geothermal areas at high altitude, supporting a unique community of flora and microbiota and accumulations of organic matter, make this Area of exceptional scientific interest.

2. Aims and objectives

Management at Mount Melbourne aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance;

- allow scientific research on the ecosystem in the Area, in particular on the plants, liverworts, algae and invertebrates, while ensuring protection from oversampling;
- allow other scientific research provided it is for compelling scientific reasons which cannot be served elsewhere;
- minimise the possibility of introduction of alien soils, plants, animals and microbes into the Area;
- preserve a part of the natural ecosystem of the Area, which is declared a Prohibited Zone, as a reference site for the purpose of future comparative studies;
- allow visits for the purposes of installation and maintenance of essential communications equipment that does not compromise the values of the Area;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

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

- Information showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently, and a copy of this Management Plan shall be kept available, in all of the research hut facilities located within 25km of the Area, and in the radio repeater equipment box on the summit of Mt Melbourne.
- Markers, signs or structures erected within the area for scientific or management purposes shall be secured and maintained in a 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.
- National Antarctic Programmes operating in the region are encouraged to consult together with a view to ensuring these steps are carried out.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map A: Mount Melbourne, location map. Map specifications: Projection: Lambert conformal conic; Standard parallels: 1st 72°40’0.000"S; 2nd 75°20’0.000"S; Central Meridain: 165°0’0.000"E; Latitude of Origin 74°0’49.2"S; Scale approx. 1:350,000. Spheroid: WGS84.
- Map B: Mount Melbourne, site map. Map specifications: Projection: Lambert conformal conic; Standard parallels: 1st 72°40’0.000"S; 2nd 75°20’0.000"S; Central Meridain: 165°0’0.000"E; Latitude of Origin 74°0’49.2"S; Scale approx. 1:16,000. Spheroid: WGS84. Photography USGS/DoSLI (SN7851) 22 November 1993.

6. Description of the Area

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

Mount Melbourne (2733m, 74º21'S 164º42'E) in northern Victoria Land, is situated between Wood Bay and Terra Nova Bay, on the western side of the Ross Sea, and Campbell Glacier, about 10km to the west (see Map A). The Area encompasses all terrain above the 2200m contour surrounding the main crater of Mt Melbourne. Boundary markers are not installed at points on the 2200m contour, due to access being predominantly via helicopter to the summit of the mountain, making assessment of altitude straightforward.

Mount Melbourne is part of the McMurdo volcanics, which are a line of dormant and extinct volcanoes running along the coast of Victoria Land. The Mt Melbourne area is thought to be late Quaternary in age and the most recent eruption may have been as little as 150 years ago. The volcanic rocks have been detailed as trachyte to trachyandesite on the mountain itself, with basalt at its base.

Mount Melbourne is an almost perfect low-angle volcanic cone with extensive areas of hot ground, fumaroles, and ice towers prominent around the summit crater and on some upper parts of the mountain. The summit caldera is about 1km in diameter and forms the névé for a westward flowing glacier. Several smaller basaltic cones and mounds occur near the base and on the flanks of the mountain. The summit also contains the most extensive areas of warm ground, marked by snow-free warm or steaming ground, fumaroles and ice towers or pinnacles. Surface soil (0-2cm depth) temperatures of up to 42ºC, areas of cooler ground where activity is discontinuous, and zones of geothermal activity are marked by ice and snow hummocks up to a metre in height.

There are three main areas exhibiting thermal activity (see Map B); two situated on the edge of the caldera, and a third about 250m lower on the northern slopes. However, areas of surface activity extend at least as low as 2400m on the north-west side of the mountain. These geothermal areas support a unique biological assemblage of species otherwise restricted to low altitudes. The species are not of a local provenance and must have been dispersed over long distances to reach the Area. The total cover of vegetation at the site is small, perhaps only 100-200 m^2 with plant life only possible through the occurrence of small water droplets formed by the condensation of steam keeping the soils moist. Known sites of vegetation are marked as A-E on Map B. Site D is known to have been disturbed and possibly contaminated by human activity.

Mount Melbourne exhibits high biodiversity relative to other geothermal sites in the Antarctic, both maritime and high altitude. Biota includes algal crusts and felts (11 species) that coat small stones, gravel and finer substrata, bryophytes (one species of moss and one of liverwort), a protozoan, and a range of microflora. A lichen association has been observed as a component of black crusts over small areas of warm soil. The warmest areas of ground support yellowish-green patches of the moss *Campylopus pyriformis,* along with the liverwort *Cephaloziella varians* and brownish crusts of algae. The unusual occurrence of shallow peat is evidence of bryophyte growth over at least several decades. The amoeboid protozoan *Corythion dubium* was observed as empty shells in both mineral substrates and amongst bryophytes. The species is not common in continental Antarctica, and only found at one other site in Victoria Land.

6(ii) Prohibited, restricted and managed zones within the Area

Prohibited and Restricted Zones - Cryptogam Ridge

An area on the southern rim of the main summit crater (known as Cryptogam Ridge) is designated as a Prohibited Zone and a Restricted Zone (see Map B) in order to protect the most extensive stand of vegetation and preserve part of the Area as a reference site for future comparative study. The

remainder of the Area, similar in biology, features, and character, is available for research programmes and controlled sample collection.

The zones consist of areas of snow-covered cool ground, warm snow-free ground, and ice-hummocks covering steam emissions and extend 40m in all directions from the ridge line. Most of Cryptogam Ridge is incorporated within the Restricted Zone, which may be accessed by permit for essential scientific reasons which cannot be met elsewhere in the Area. The western most 100m of the Cryptogam Ridge is a Prohibited Zone, to which access is strictly prohibited until such time it is agreed by management plan review that access should be allowed.

Managed Zones

Two Managed zones (see Map B) have been established within the Area where survey marks used in deformation studies need to be regularly accessed, and a radio repeater is installed and maintained each season. The zones extend 15m around the survey marks and are located as follows:

Summit of Mt Melbourne, containing survey mark No. 600 and radio repeater site; and

south-east of Cryptogam Ridge, containing survey mark No. 601.

6(iii) Structures within and near the Area

A total of six survey marks, consisting of a metal tube set into a concrete base, are located around the summit area (see Map B) and are used in an ongoing Italian scientific programme examining the deformation study on the mountain. A radio repeater to support communications for the Italian Antarctic programme, consisting of an equipment box and aerial, is also installed annually on cool, ice-free ground near the summit.

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

The nearest protected areas are: Edmonson Point ASPA No 165, approximately 13km east of Mt Melbourne; Cape Hallett, Victoria Land ASPA No 106 (SPA No 7), approximately 300km to the north; and, Botany Bay, Cape Geology, Victoria Land ASPA No 164 (SSSI No 37) approximately 300km to the south.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a specific Permit issued by the appropriate national authoritie under Article 3 of Annex II. Permits may be issued for the following purposes:

- For activities outside the Restricted and Managed zones, permits may be issued only for scientific study of the ecosystem, for a compelling scientific or management purpose that cannot be served elsewhere, or for essential management purposes consistent with the plan objectives such as inspection, monitoring or review.
- Permits to access to the Restricted Zone may only be issued for essential scientific or management purposes that cannot be met elsewhere in the Area.
- Permits to enter only the Managed Zones may be issued for essential operational or scientific purposes consistent with the objectives of the Management Plan, such as to access survey marks and radio repeater sites.

Conditions for issuing a Permit to enter the Area are that:

- the actions permitted are not likely to jeopardise the natural ecological system or scientific values of the Area;
- any management activities are in support of the objectives of the Management Plan;
- the actions permitted are in accordance with all requirements of the Management Plan;
- a Permit, or a copy, shall be carried within the Area, including a copy of all relevant maps from the Management Plan;
- a visit report shall be supplied to the authority named on the permit; and
- any Permit shall be issued for a stated period.

7(i) Access to and movement within the Area

The following restrictions apply within the Area:

- land vehicles are prohibited within the Area;
- helicopters may only land at the established survey marks within the two Managed Zones (see Map B), unless specifically allowed by Permit for purposes consistent with the aims of this plan;
- use of helicopter smoke grenades within the Area is prohibited;
- any overflight of the Prohibited or Restricted Zone must be more than 50m above the ground level; and
- hovering over any part of the Area is not permitted lower than 50m, and ice-free areas should be avoided unless absolutely necessary for access to the Area.

Visitors must avoid walking on areas of visible vegetation or moist soil, both on ice-free ground and among ice hummocks, and should not interfere with any ice structures unless specified in the permit. Pedestrian traffic should be kept to the absolute minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise effects.

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

As outlined above, permitted activities within the Area may include:

- scientific research that will not jeopardise the ecosystem of the Area and cannot be conducted elsewhere;
- essential management activities, including monitoring and inspection; and
- essential operational activities, such as access to survey marks and radio repeater sites.

7(iii) Installation, modification or removal of structures

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

7(iv) Location of field camps

Camping is permitted only in the ice-filled summit of the caldera or outside the Area (i.e. below the 2200m contour).

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

To avoid compromising the values of the ecosystem for which the Area is protected, the following restrictions apply to all activities in the Area:

- no living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions;
- chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from the Area at or before the conclusion of the activity for which the Permit was granted;
- fuel is not to be stored in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted and shall not be stored on ice free areas; and
- all materials introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimised.

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

Any removal or disturbance of the vegetation or invertebrates is prohibited, except in accordance with a Permit issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose. Any sampling is to be kept to the absolute minimum required for scientific or management purposes, and carried out using techniques which minimise disturbance to the surrounding soil, ice structures and biota. Any sampling or experimental sites should be photographed and the location recorded in detail and reported to the Permitting authority.

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 issued under Article 3 of Annex II by the appropriate national authority specifically for that purpose and should be limited to the minimum necessary to meet scientific or management needs. Sampling is to be carried out using techniques which minimise disturbance to the surrounding soil and biota. Material of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit holder or otherwise authorised, may be removed from any part of the Area, including the Restricted Zone, unless the impact of removal is likely to be greater than leaving the material *in situ*: if this is the case the appropriate authority should be notified.

7(viii) Disposal of waste

All wastes, including all human wastes, shall be removed from the Area.

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

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

Any specific sites of long-term monitoring shall be appropriately marked (as in 7iii above).

To help maintain the ecological and scientific values derived from the isolation and relatively low level of human impact at the Area, visitors shall take special precautions against introductions, especially when visiting several thermal regions in a season. Of particular concern are microbial or vegetation introductions sourced from:

- thermal areas, both Antarctic and non-Antarctic;
- soils at any other Antarctic sites, including those near stations;
- soils from regions outside Antarctica.

To this end, visitors shall take the following measures to minimise the risk of introductions:

- Any sampling equipment or markers brought into the Area shall be sterilised and maintained in a sterile condition before being used within the Area. To the maximum extent practicable, footwear and other equipment used or brought into the Area (including backpacks or carry-bags) shall be thoroughly cleaned or sterilised and maintained in this condition before entering the Area;
- Sterilisation should be by an acceptable method, such as by UV light, autoclave, or by washing surfaces in 70 percent ethanol solution in water.
- Sterile protective overclothing shall be worn. The overclothing shall be suitable for working at temperatures of -20°C or below and comprise at a minimum sterile overalls to cover arms, legs and body and sterile gloves suitable for placing over the top of cold-weather gloves. Disposable sterile/protective foot coverings are not suitable for the scoria surface and should not be used. Instead, all footwear should be thoroughly brushed to remove soil particles and wipes with 70 percent ethanol.
- Both the interior and exterior of helicopters should be cleaned as far as practicable before landing within Area.

7(x) Requirements for reports

Parties shall ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report Form suggested by SCAR. Under item 10 of this form (mode of transport to/from the area), particular note should be made of where any helicopter used took off from and which landing site was used.

Parties shall maintain a record of such activities and, in the Annual Exchange of Information, shall 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 reports in a publicly accessible archive to maintain a record of usage, to be used both for review of the Management Plan and in organising the scientific use of the site.

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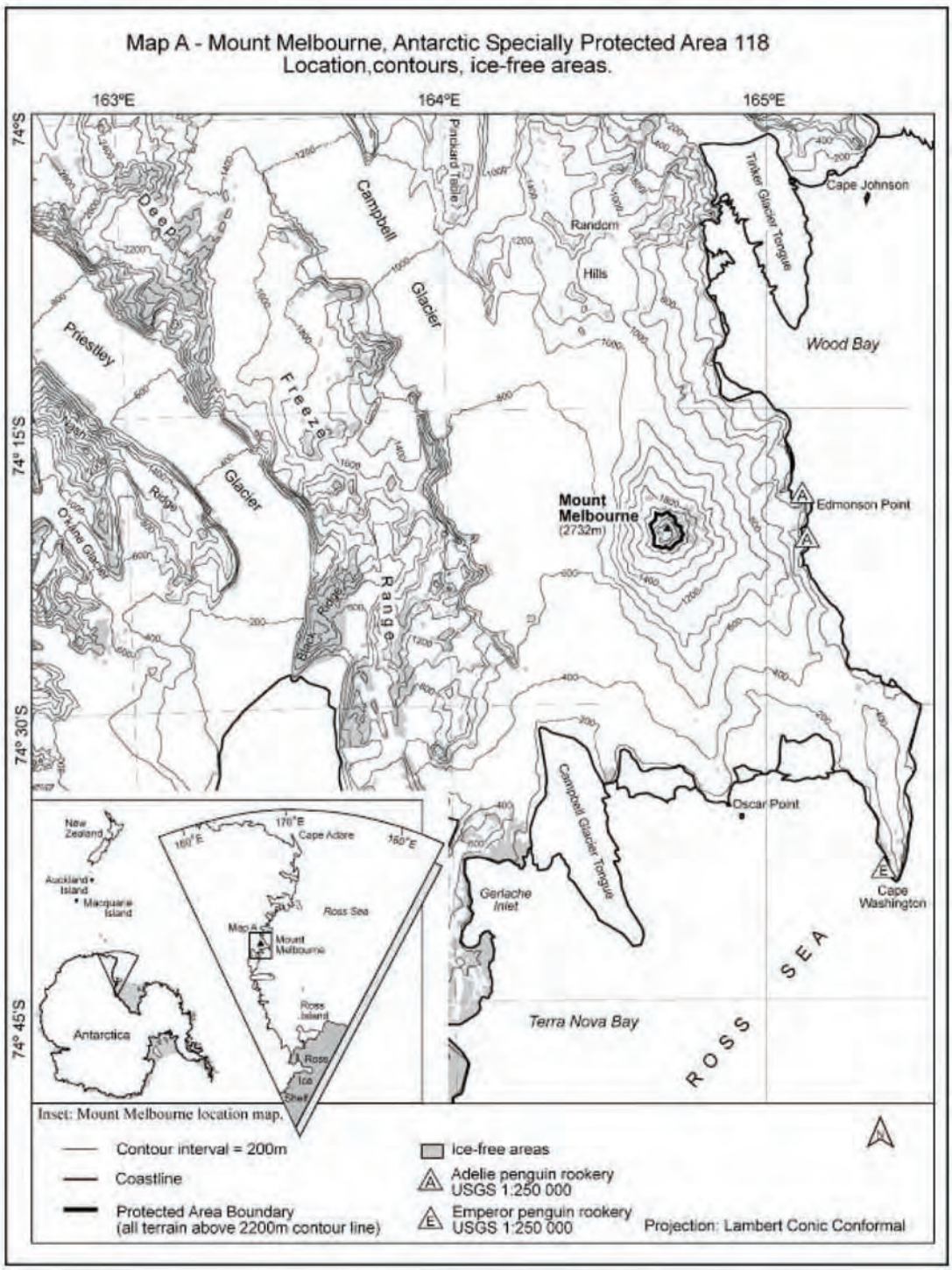
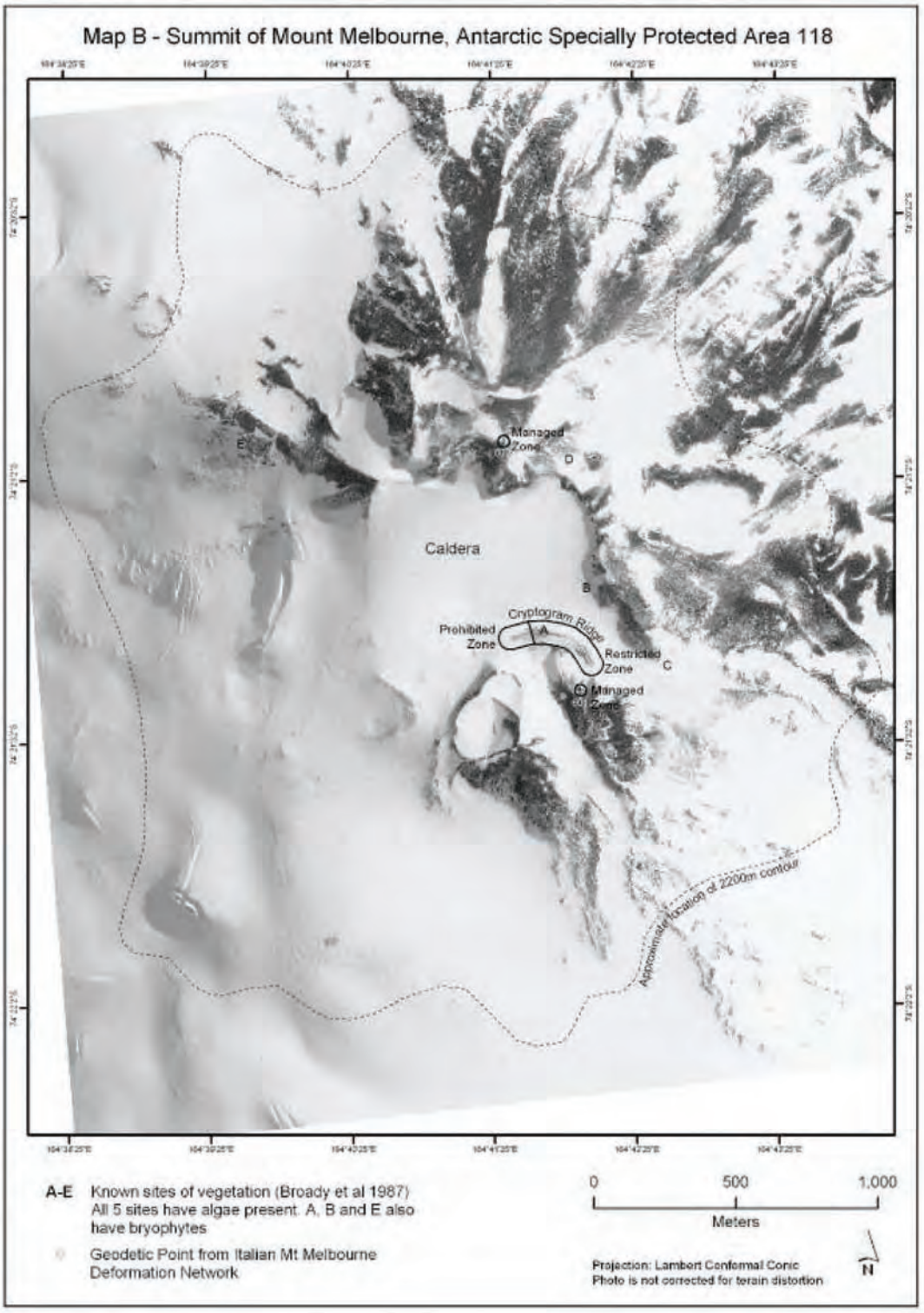

Map A - Mount Melbourne, Antarctic Specially Protected Area 118
Location,contours, ice-free areas.
163°E
164°E
165°E
74°S
74° 15'S
74° 30'S
74° 45'S
Deep
Priestley
Campbell
Glacier
Pinckard Table
Random
Hills
Trinter Glacier Tongue
Cape Johnson
Wood Bay
Freeze
Glacier
Ridge
Orkney Glacier
Mount
Melbourne
(2732m)
Edmonson Point
Black Ridge
Range
Campbell Glacier Tongue
Oscar Point
Gerlache
Inlet
Cape
Washington
Terra Nova Bay
ROSS
SEA
New
Zealand
Auckland
Island
Macquarie
Island
Antarctica
170°E
160°E
180°E
Cape Adare
Ross Sea
Map A
Mount
Melbourne
Ross
Island
Ross
Ice
Shelf
Inset: Mount Melbourne location map.
Contour interval = 200m
Coastline
Protected Area Boundary
(all terrain above 2200m contour line)
Ice-free areas
Adelie penguin rookery
USGS 1:250 000
Emperor penguin rookery
USGS 1:250 000
Projection: Lambert Conic Conformal


Map B - Summit of Mount Melbourne, Antarctic Specially Protected Area 118
Managed Zone
D
E
Caldera
B
Cryptogram Ridge
Prohibited Zone
A
Restricted Zone
C
Managed Zone
Approximate location of 2200m contour
A-E Known sites of vegetation (Broady et al 1987) All 5 sites have algae present. A, B and E also have bryophytes
Geodetic Point from Italian Mt Melbourne Deformation Network
0
500
1,000
Meters
Projection: Lambert Conformal Conic
Photo is not corrected for terain distortion
N

Measure 6 (2008)

Antarctic Specially Protected Area No 123 (Barwick and Balham Valleys, Southern Victoria 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 VIII-4 (1975), which designated the Barwick Valley, Victoria Land as Site of Special Scientific Interest ("SSSI") No 3 and annexed a Management Plan for the Site;
- Recommendation X-6 (1979), which extended the expiry date of SSSI 3 from 30 June 1981 to 30 June 1985;
- Recommendation XII-5 (1983), which extended the expiry date of SSSI 3 from 30 June 1985 to 31 December 1985;
- Recommendation XIII-7 (1985), which extended the expiry date of SSSI 3 from 31 December 1985 to 31 December 1995;
- Resolution 7 (1995), which extended the expiry date of SSSI 3 from 31 December 1995 to 31 December 2000;
- Measure 2 (2000), which extended the expiry date of SSSI 3 from 31 December 2000 to 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 3 as Antarctic Specially Protected Area No 123;
- Measure 1 (2002), which annexed a revised Management Plan for ASPA 123;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 123;

Desiring to replace the existing Management Plan for ASPA 123 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 123: Barwick and Balham Valleys, Southern Victoria Land, which is annexed to this Measure, be approved; and

2) all prior management plans for ASPA 123, namely those annexed to:

    a) Recommendation VIII-4 (1975); and

    b) Measure 1 (2002);

    shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 123

BARWICK AND BALHAM VALLEYS, SOUTHERN VICTORIA LAND

1. Description of values to be protected

An area of 325km^2 at Barwick Valley, including part of adjacent Balham Valley, was originally designated in Recommendation VIII-4 (1975, SSSI No 3) after a proposal by the United States of America on the grounds that it was "one of the least disturbed and contaminated of the Dry Valleys of Victoria Land" and was important as a reference base against which to measure changes in comparable ecosystems of the other Dry Valleys where scientific investigations were being regularly conducted. The site remains distant from field stations and has not been subjected to intensive visitation or research. The Barwick Valley was first visited in 1958 and several subsequent expeditions were conducted in the 1960s through to 1975, after which time visits have been few because of the designation of the SSSI. Although some human impacts from these early expeditions were visible within the region in 1993-94, Barwick and Balham Valleys are believed to remain one of the least impacted areas in the Victoria Land Dry Valleys region of Antarctica.

The boundaries of the original Area were enlarged in 2002 (Measure 1) to include more of the Balham Valley catchment, and rationalized to exclude the Victoria Upper Glacier catchment which was previously within the Area, resulting in a total area of 480km^2. The current Management Plan has been updated to include additional provisions to reduce the risk of microbial and vegetation introductions from soils at other Antarctic sites, or from regions outside Antarctica.

The Victoria Land Dry Valleys have a unique and extreme polar desert ecosystem. The Area contains examples of a wide variety of the environments found in this ecosystem, including desert pavements, sand dunes, patterned ground, glacial and moraine features, streams, freshwater and saline lakes, valleys and high-altitude ice-free ground. Some of the best examples of ventifact pavements and weathering-pitted dolerites are found on the valley floors, along with examples of chasmolithic lichens, layered communities of endolithic lichens, fungi, algae and associated bacteria, and populations of soil and lake microflora. Special protection of the Area provides the opportunity to conserve a relatively pristine example of this ecosystem as a baseline for future reference. Protection on a catchment basis serves to provide greater representation of the ecosystem features, and also facilitates management of the Area as a geographically distinct and integrated ecological system. The high ecological values, as well as the scientific, aesthetic and wilderness values derived from the isolation and relatively low level of human impact are important reasons for special protection at Barwick and Balham Valleys.

2. Aims and objectives

Management at Barwick and Balham Valleys aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- conserve the natural ecosystem as a reference area largely undisturbed by direct human activities;
- allow scientific research on the natural ecosystem and physical environment in the Area provided it is for compelling reasons which cannot be served elsewhere;

- minimize human disturbance to the Area by preventing unnecessary sampling;
- minimize the possibility of introduction of alien plants, animals and microbes to the Area;
- allow visits for management purposes in support of the protection of the values and features of the Area.

3. Management activities

- Copies of this management plan, including maps, shall be kept available in the principal research hut facilities in the vicinity of the Area and at McMurdo Station and Scott Base;
- 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;
- National Antarctic Programs operating in the region shall consult together for the purpose of ensuring that the above provisions are implemented.

4. Period of designation

Designated for an indefinite period.

5. Maps

Map 1: ASPA No 123 Barwick and Balham Valleys, Topography and boundary. Map specifications: Projection: Lambert conformal conic; Standard parallels: 1st 77° 15' S; 2nd 77° 25' S; Central Meridian: 161° 10' E; Latitude of Origin: 78° 00' S; Spheroid: WGS84 approximation; Datum: 'Camp Area' Local.

- Inset 1: Ross Sea region, showing the location of the McMurdo Dry Valleys and Inset 2.
- Inset 2: McMurdo Dry Valleys and Ross Island, showing location of McMurdo Station (US) and Scott Base (NZ), Antarctic Specially Managed Area No 2 McMurdo Dry Valleys (ASMA No 2), and the location of other Antarctic Specially Protected Areas in the McMurdo Dry Valleys (ASPA No 131, Canada Glacier, and ASPA No 138, Linnaeus Terrace).

6. Description of the Area

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

Barwick Valley (161° E, 77° 20' S) is situated about 65km inland from the Ross Sea coast of southern Victoria Land (Map and Insets). The Area includes Barwick and Balham Valleys and their respective catchments and is bordered on the south, west and north by the McKelvey Valley, the Willet Range and the divide between the Victoria and Barwick Valleys, respectively.

The boundary of the Area extends from its eastern extremity in the lower Barwick Valley (around the confluence of the Barwick, Victoria and McKelvey Valleys) several kilometers south towards the ridge leading SW to the summit of Mount Insel (1345m), from where the boundary follows the high points of the ridge of the Insel Range for 5km before descending to a low pass between the McKelvey and Balham Valleys at the location of Bullseye Lake. The boundary crosses the lake before ascending the ridge to a further high point on the Insel Range (approximately 1250m), and continues towards the upper reaches of the Balham Valley. As the terrain becomes gentler in the

upper Balham and approximately 7km east of the summit of Shapeless Mountain (2736m), the boundary extends northward at an elevation of approximately 1800m towards Apocalypse Peaks. The boundary extends NW from the Apocalypse Peaks for approximately 9km towards a prominent ridge leading to the summit of Mount Bastion (2477m, 160°29'E, 77°19'S). This ridge is followed in a northerly direction to Skew Peak (2535m, 160°41'E, 77°13'30'S), located at the head of the Barwick Valley. The boundary then descends along the east ridge of Skew Peak above Webb Glacier, before following the catchment boundary in a more southerly direction toward Parker Mesa. From Parker Mesa the boundary descends further to follow the dividing ridge between the catchments of the Victoria Upper Glacier and the Barwick Valley. The boundary extends east along this ridge for 13km to Sponsors Peak (1454m, 161°24'E, 77°18'S). The boundary descends the SW ridge of Sponsors Peak and Nickell Peak (approximately 1400m) to the lower Barwick to the eastern extremity of the Area, which is about 4km north-west of Lake Vida, Victoria Valley.

An extensive névé south of Skew Peak feeds the Webb Glacier in the upper Barwick Valley. Very little ice from the Polar Plateau flows over the scarp into the Barwick Valley, as flow vectors and debris cover patterns on the Webb Glacier in this location indicate that this part of the glacier is almost stationary. The Barwick and Balham Valleys merge in the south-east of the Area, 9km from where the Barwick joins the Victoria Valley. A series of lakes occupy the Barwick Valley, the largest being Webb Lake (approximate elevation 650m) at the snout of Webb Glacier. Lake Vashka (approximate elevation 507m), partially filling an unusually deep circular depression, is the second largest and 5.7km down-valley from Webb Lake. Hourglass Lake (approximate elevation 625m), the next largest, is approximately half way between Webb Lake and Lake Vashka. An intermittent stream connecting this series of lakes terminates at Lake Vashka, which has a level well below its overflow threshold. Early observations of the smooth surfaces of Lakes Webb and Vashka suggested that they are 'ice-block' lakes that contain no significant liquid water. However, liquid water up to several meters in depth was observed at the perimeter of Lake Vashka in December 1993. Recent studies on the physical features of any of the Barwick Valley lakes have not been made. Lake Balham, a small lake in a depression (<700m elevation) below Apocalypse Peaks, is the only lake in Balham Valley (generally around 800m in elevation).

Multiple glaciations, mainly between 13 Ma and 3.5 Ma ago, have resulted in a thick ground moraine on both valley floors. These deposits are mantled by solifluction sheets at the head of Balham Valley. In addition the valleys bear a small number of fresh and saline lakes on the drift surfaces. In many cases the lakes have evaporated to leave extensive salt deposits. The walls of Barwick and Balham Valleys display remnants of glacial benches at about 800m and 1,200-1,500m altitude. The soils near Lake Vashka consist of moraine debris derived largely from dolerite and sandstone, but granites, gneiss and schist make up as much as 35% of boulders locally. Weathering is often indicated by deep red staining due to oxidation of iron compounds, usually eroded by wind-driven sand on the boulders' windward side. The valley floors are extensively covered with patterned ground of sand-wedge polygons, typical of permafrost areas in the Dry Valleys. The majority is old (high centered), with young (hollow centered) polygons found in recent stream channels, and both typically measure 20m across.

No invertebrates have been found in the dry soils of the Barwick Valley and there is little obvious vegetation. Algal crusts and mats fringe the lakes and streams but the flora reported is essentially microbial: chasmolithic lichens are present in jagged screes of the Apocalypse Range and dense layered communities of endolithic lichens, fungi, algae and associated bacteria are occasionally found in boulders of Beacon Sandstone. Black lichen growth is reported to be well developed in areas of sandstone on the valley floor of Balham Valley. Significant heterotrophic bacterial populations have been reported in sandy samples from Barwick Valley. The population contained lactose-fermenters, nitrate-reducers, nitrogen-fixers, yeasts and algae but no detectable filamentous fungi or Protozoa.

While the Barwick and Balham Valleys are one of the most remote areas of the Dry Valleys, south polar skuas (*Catharacta maccormicki*) are known to visit the Area, with about 40 carcasses found at Lake Vashka in 1959-60. The mummified carcasses of two seals have been found near the snout of Webb Glacier, and seven more, mainly crabeaters (*Lobodon carcinophagus*) were found near the Balham/Barwick Valley junction.

Inspection of the Barwick and Balham Valleys in December 1993 from Bullseye Lake to Lake Vashka revealed evidence of prior human activity, particularly around Lake Vashka where field camps had been in use for scientific research in the 1960s. Impacts observed in the Lake Vashka vicinity included stone circles for tents at old camp sites, soil pits and a trench, remains of a wooden crate, a wooden box containing rocks and a paper poster, and a broken food cache partially submerged in the lake. Bamboo poles are situated near the snout of Webb Glacier and at Vashka Crag. Dynamite charges have been used in the vicinity of Lake Vashka and at least one other unknown location in the Barwick Valley. Remediation of the site was carried out in 1995/96 by a New Zealand team. Recent visits have recorded no evidence of human activities or disturbance.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

None.

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

Barwick and Balham Valleys lie within Antarctic Specially Managed Area (ASMA) No 2, McMurdo Dry Valleys. Within the ASMA, the nearest Special Features include the Sand Dune Field in the Lower Victoria Valley, Argo Gully, Boulder Pavement and Prospect Mesa in the Wright Valley, and Don Juan Pond in the Upper Wright Valley. The nearest protected areas to Barwick and Balham Valleys are Linnaeus Terrace (ASPA No 138) 35km south in the Wright Valley, and Canada Glacier (ASPA No 131) 50km SE in the Taylor Valley (Inset 2, 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 for compelling scientific reasons that cannot be served elsewhere, or for essential management purposes consistent with plan objectives such as inspection or review;
- the actions permitted will not jeopardize the physical, ecological, scientific or aesthetic and wilderness values of the Area, nor the pristine value of the Area and its potential as a largely undisturbed 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 and movement within the Area shall be on foot. Vehicles are prohibited within the Area;
- Landing of aircraft and overflight below 750m (~2500 ft) is prohibited within the Area, except for scientific or management purposes specifically authorized by permit;
- Use of smoke grenades is prohibited within the Area and discouraged within 1km of the Area;
- No special restrictions apply to the air or land routes used to move to and from the Area. Scientists are encouraged to access the Area at a practicable point closest to their site of study to minimize the amount of the Area that is traversed;
- Pedestrian routes should avoid lakes, ponds, stream beds, areas of damp ground and areas of soft sediments or dunes;
- Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimize effects.

7(ii) Activities that may be conducted in the Area

Activities that may be conducted within the Area include:

- scientific research that will not jeopardize the scientific or ecosystem values of the Area, or its pristine value and potential 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;
- Permanent structures are prohibited;
- All scientific equipment installed in the Area must be approved by permit and clearly identified by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area;
- Removal of specific equipment for which the permit has expired shall be 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 generally be avoided within the Area, and two campsites outside of, but close to, the east and south boundaries are identified for access into the Area. One of these is at the confluence of the lower Barwick and Victoria Valleys (161° 41' 15" E, 77° 21' 45" S), while the other is close to Bullseye Lake in the McKelvey Valley (161° 13' 08" E, 77° 25' 40" S) (see Map 1). If deemed to be essential, camping should be at previously impacted sites, preferably on snow or ice-covered ground if available. Researchers should consult with the appropriate national authority to obtain up-to-date information on any sites where camping may be preferred.

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

- No living animals, plant material 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 of the isolation and relatively low level of human impact at the Area visitors shall take special precautions against the introduction of animals, plant material and microorganisms. Of particular concern are microbial and vegetation introductions from soils at other Antarctic sites, including stations,

or from regions outside Antarctica. To minimize the risk of introductions, visitors shall thoroughly clean footwear and any equipment to be used in the area – particularly sampling equipment and markers – before entering the Area;

- To reduce the risk of microbial contamination, the exposed surfaces of footwear, sampling equipment and markers should, to the greatest extent practical, be sterilized before use within the Area. Sterilization should be by an acceptable method, such as by washing in 70% ethanol solution in water or in a commercially available solution such as 'Virkon';
- No herbicides or pesticides shall be brought into the Area;
- Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the permit, shall be removed from the Area at or before the conclusion of the activity for which the permit was granted;
- Fuel is not to be brought into the Area, unless specifically authorized by permit for specific scientific or management purposes;
- 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 separate 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 introduced by a visitor

- 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 soil, 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 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

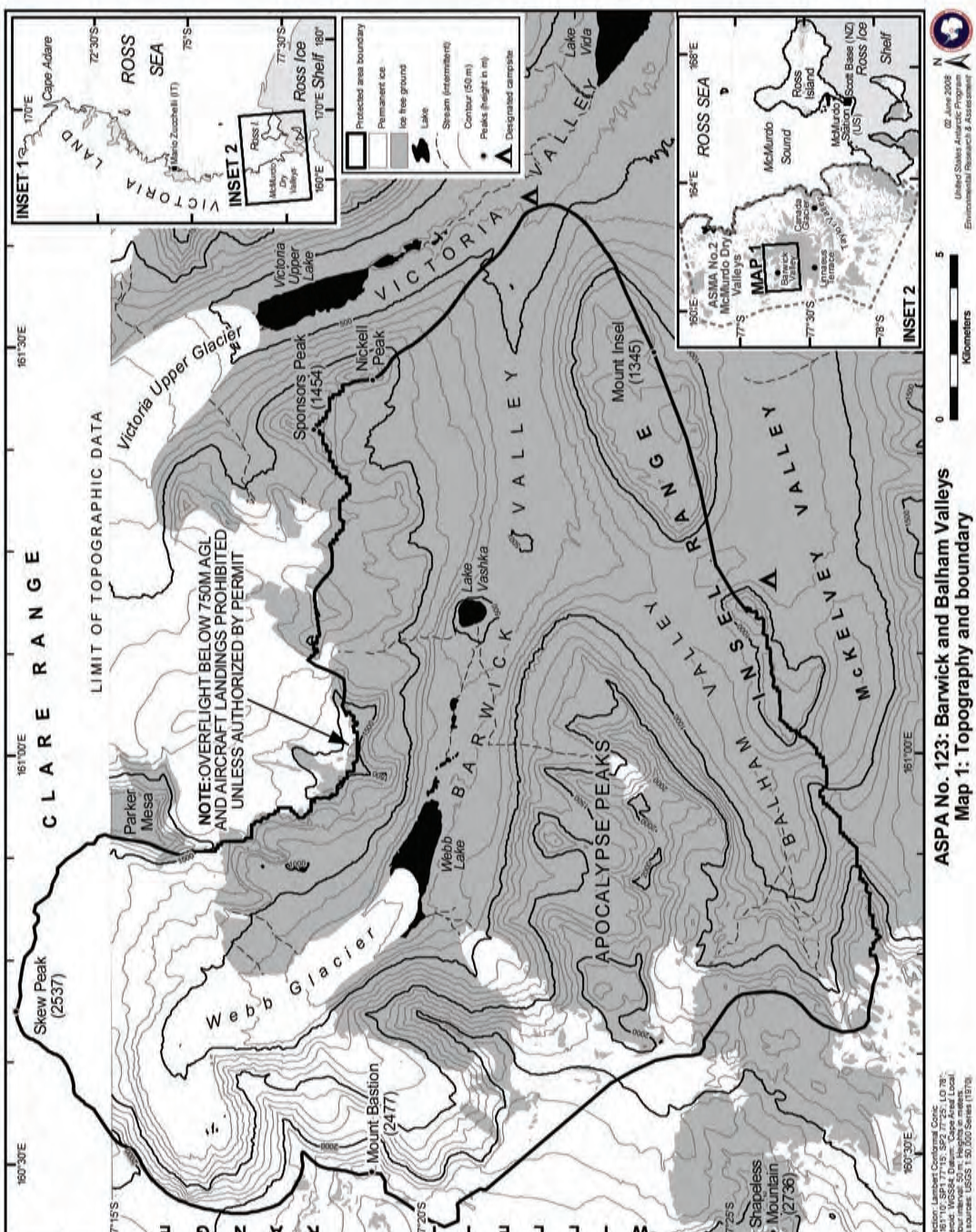
All wastes, including water used for any human purpose and including all human wastes, shall be removed from the Area. Individuals or groups shall carry appropriate containers for human waste and gray water so they may be safely transported and removed from the Area.

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

- Visitors should consult and apply where appropriate the comprehensive Code of Conduct and *Guidelines for Conduct of Scientific Research* developed for use within the McMurdo Dry Valleys (ASMA No 2).
- Any specific sites of long-term monitoring should be appropriately marked;

7(x) Requirements for reports

- Parties should ensure that the principal holder for each permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of Resolution 2 (1998)(CEP I).
- Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of 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.


ASPA No. 123: Barwick and Balham Valleys
Map 1: Topography and boundary
CLARE RANGE
LIMIT OF TOPOGRAPHIC DATA
NOTE: OVERFLIGHT BELOW 750M AGL AND AIRCRAFT LANDINGS PROHIBITED UNLESS AUTHORIZED BY PERMIT
Victoria Upper Glacier
Victoria Upper Lake
Sponsors Peak (1454)
Nickell Peak
Lake Vida
VICTORIA VALLEY
Mount Insel (1345)
Parker Mesa
Webb Glacier
Webb Lake
BARWICK VALLEY
Lake Vashka
APOCALYPSE PEAKS
BALHAM VALLEY
McKELVEY VALLEY
Skew Peak (2537)
Mount Bastion (2477)
Shapeless Mountain (2736)
WILLETT RANGE
INSET 1
INSET 2
Cape Adare
Mario Zucchelli (IT)
ROSS SEA
Ross Ice Shelf
Protected area boundary
Permanent ice
Ice free ground
Lake
Stream (intermittent)
Contour (50 m)
Peaks (height in m)
Designated campsite
ASMA No.2 McMurdo Dry Valleys
MAP 1
Barwick Valley
Canada Glacier
Lake Vida
McMurdo Sound
Ross Island
McMurdo Station (US)
Scott Base (NZ)
Ross Ice Shelf
Kilometers
02 June 2008
United States Antarctic Program
Environmental Research & Assessment

Measure 7 (2008)

Antarctic Specially Protected Area No 124 (Cape Crozier, 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 IV-6 (1966), which designated Cape Crozier, Ross Island, as Specially Protected Area ("SPA") No 6;
- Recommendation VIII-2 (1975), which terminated Recommendation IV-6;
- Recommendation VIII-4 (1975), which renamed and renumbered SPA 6 as Site of Special Scientific Interest ("SSSI") No 4 and annexed a Management Plan for the Site;
- Recommendation X-6 (1979), which extended the expiry date of SSSI 4 from 30 June 1981 to 30 June 1985;
- Recommendation XII-5 (1983), which extended the expiry date of SSSI 4 from 30 June 1985 to 31 December 1985;
- Recommendation XIII-7 (1985), which extended the expiry date of SSSI 4 from 31 December 1985 to 31 December 1991;
- Recommendation XVI-7 (1991), which extended the expiry date of SSSI 4 from 31 December 1991 to 31 December 2001;
- Measure 3 (2001), which extended the expiry date of SSSI 4 from 31 December 2001 until 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 4 as Antarctic Specially Protected Area No 124;
- Measure 1 (2002), which annexed a revised Management Plan for ASPA 124;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 124;

Desiring to replace the existing Management Plan for ASPA 124 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 124, Cape Crozier, Ross Island, which is annexed to this Measure, be approved;
2) all prior Management Plans for ASPA 124, namely those annexed to:
    a) Recommendation VIII-4 (1975); and
    b) Measure 1 (2002);

    shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 124

CAPE CROZIER, ROSS ISLAND

1. Description of values to be protected

An area at Cape Crozier was originally designated as Specially Protected Area No 6 by Recommendation IV-6 (1966) after a proposal by the United States of America on the grounds that the region supports a rich bird and mammal fauna as well as microfauna and microflora, and that the ecosystem depends on a substantial mixing of marine and terrestrial elements of outstanding scientific interest. With adoption by Antarctic Treaty Parties of the Site of Special Scientific Interest (SSSI) category of protection in 1972, Cape Crozier's designation as an SPA was terminated by Recommendation VIII-2 (1975) and the site was re-designated as SSSI No 4 by Recommendation VIII-4 (1975). The reason for designation of SSSI No 4 was to protect long-term studies of the population dynamics and social behaviour of emperor (*Aptenodytes forsteri*) and Adélie (*Pygoscelis adeliae*) penguin colonies in the region. Information gathered since the designation of SSSI No 4 supported the inclusion of skua populations and vegetation assemblages as important values to be protected at Cape Crozier. In 2002 (Measure 1) the boundaries were extended south to Igloo Spur to protect the range of vegetation assemblages representative of the Cape Crozier region. The western boundary of the Area has been modified in the current plan to follow a simple line of longitude because visitors found the previous boundary hard to follow.

The emperor penguin colony at Cape Crozier was first recorded by members of the British National Antarctic Expedition in 1902. The colony is the most southerly known and has the longest record of study on an emperor penguin population. The colony breeds on fast ice that forms between large cracks, which develop where the Ross Ice Shelf abuts Cape Crozier. The positions of these cracks shift with movement of the ice shelf, and the colony itself is known to move around different parts of the cracks during the breeding season. The boundaries of the Area have been designed to include fast-ice areas consistently occupied by breeding birds.

Cape Crozier has a large Adélie penguin (*Pygoscelis adeliae*) population numbering around 150,000 breeding pairs, making it one of the largest Adélie colonies in Antarctica. The colony is divided into two main groups 1km apart known as East and West Colonies (Maps 1 and 2). In addition, well-preserved ancient Adélie penguin remains found within the Area have particular scientific value for genetic studies. Associated with the penguin colonies is a large south polar skua (*Catharacta maccormicki*) colony, estimated at 1000 breeding pairs.

Weddell seals (*Leptonychotes weddellii*) breed within the Area, while leopard seals (*Leptonyx hydrurga*) are frequent visitors and crabeater seals (*Lobodon carcinophagus*) are commonly seen at sea and on ice floes. Orca are also frequently seen close off shore within the Area. While the mammal species recorded at Cape Crozier are not unique to the Area nor known to be outstanding in this context, they form an integral and representative part of the local ecosystem.

There are moss, algae and lichen assemblages in the Area. Expanses of snow algae at Cape Crozier cover an area of more than 4 ha adjacent to the skua and penguin colonies. Growths as extensive as those at Cape Crozier have been remarked on only once before in the Continental Antarctic Zone, on the Wilkes Land Coast, and Cape Crozier has one of the most southerly records of snow algae. Lichens are also abundant, with large areas of bright orange encrusting (crustose) lichens on rocks

and stones on the slopes above the Adélie colony, and rich growths of foliose and fruticose lichens in the vicinity of Wilson's Stone Igloo.

A message post from Scott's National Antarctic Expedition (1901-04) is situated in West Colony (169°16'14"E, 77°27'15"S) and was designated as Historic Site and Monument (HSM) No 69 in Measure 4 (1995). Wilson's Stone Igloo (169°18'E, 77°51'S), designated as HSM No 21 in Recommendation VII-9 (1972), is situated in the south of the Area. The rock shelter was constructed in July 1911 by members of the 1910-1913 British Antarctic Expedition during their winter journey to Cape Crozier to collect emperor penguin eggs.

The high scientific, ecological and historic values of this area along with its vulnerability to disturbance through trampling, sampling, pollution or alien introduction, are such that this Area requires long-term special protection.

2. Aims and objectives

Management at Cape Crozier aims to:

- avoid degradation of, or substantial risk to, the values of the Area, and in particular the avifauna and vegetation assemblages within the Area;
- allow scientific research, especially of the avifauna and vegetation assemblages, in the Area while ensuring it is protected from oversampling or other possible scientific impacts;
- allow other scientific research provided it will not jeopardize the values of the Area;
- minimize the possibility of introduction of alien plants, animals and microbes into the Area;
- allow visits to the historic sites, but under strict control by permit;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

- Durable wind direction indicators should be erected close to the primary designated helicopter landing site whenever it is anticipated there will be a number of landings at the site in a given season. These should be replaced as needed and removed when no longer required.
- 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 primary and secondary designated helicopter landing sites adjacent to the field hut.
- 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 the research hut facility at Cape Crozier.
- 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 for the purpose of ensuring that the above provisions are carried out.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map 1: ASPA No 124 Cape Crozier: Topography and boundary. Map specifications: Projection: Lambert conformal conic; Standard parallels: 1st 77° 27' S; 2nd 77° 32' S; Central meridian: 169° 15' E; Latitude of Origin: 77° S; Spheroid: WGS84; Datum: McMurdo Sound Geodetic Control Network 1992.

  Inset 1: Ross Sea region, showing location of Inset 2.

  Inset 2: Ross Island region, showing the location of Map 1 and McMurdo Station (US) and Scott Base (NZ).

- Map 2: ASPA No 124 Cape Crozier: Access, facilities and wildlife. Map specifications are the same as those for Map 1.

6. Description of the Area

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

Cape Crozier (169° 21' 30" E, 77° 30' 30" S) is at the eastern extremity of Ross Island, where an ice-free area comprises the lower eastern slopes of Mount Terror. The designated area is situated in the vicinity of Post Office Hill (407 m), extending to encompass the adjacent Ross Ice Shelf where large cracks in the shelf are covered by fast-ice which is occupied annually by breeding emperor penguins.

The Area includes a terrestrial region and ice shelf above the mean high water mark as well as the adjacent fast-ice within the boundaries occupied by breeding emperor penguins. The north boundary of the Area extends 6.5km along the 77° 26' 00" S line of latitude from 169° 11' 30" E to 169° 28' 00" E. The west boundary extends 1.5km south from the northern boundary to the coast, thence in a SW direction following a low ice-free ridge that passes 30m west of the hut and helicopter pad. The boundary then follows this ridge in a southerly direction to the saddle SW of the summit of Post Office Hill at 169° 11' 30" E 77° 28' 00" S, before following the 169° 11' 30" E line of longitude south to a point at 169° 11' 30" E 77° 31' 00" S, which is close to the summit of Bomb Peak (740m). The boundary extends down the SE ridge of Bomb Peak to Igloo Spur at 169° 20' 00" E 77° 32' 00" S, from where it extends due east along latitude 77° 32' 00" S to the east boundary at 169° 28' 00" E.

The ice-free ground at Cape Crozier is of recent volcanic origin, with numerous small cones and craters evident among gentle slopes of scoria and fine-grained basalt lava. Several of these hills, including Post Office Hill, shelter the penguin colonies from south-westerly winds. On the surface are many volcanic bombs and other evidence of small-scale volcanic explosions. To the south of the Area coastal cliffs adjacent to the ice shelf are up to 150m high. The cliff faces show bedded lava and brown palagomite tuffs with several lenticular patches of columnar basalt towards the base. Large rocks of continental origin transported by glacial action can be found on the northern side of Cape Crozier. Prevailing winds tend to be from between the south-west and west, with temperatures generally about 8° colder than those at McMurdo Sound.

The emperor penguin (*Aptenodytes forsteri*) colony at Cape Crozier was discovered in October 1902 by R.S. Skelton, a member of Scott's Discovery Expedition. The presence of the colony depends on fast-ice locked between cracks in the Ross Ice Shelf where it abuts Cape Crozier. The size of the

colony is limited by the area and condition of the fast ice, which also affects the availability of breeding sites sheltered from the strong katabatic winds that descend from Mount Terror. The location of the colony varies from year to year and the colony moves within a breeding season, beginning the season near to shore and moving off shore as fledging approaches. The breeding population has fluctuated widely since the turn of the century, for example with 400 adults recorded in 1902, 100 in 1911, and 1,300 in 1969. The number of chicks fledged and the fledging success of the colony has also been variable (Table 1).

Table 1. Cape Crozier emperor penguin live chick counts 1983–2006

Year	Chicks	Year	Chicks	Year	Chicks	Year	Chicks
1983	78	1993	?	1998	1108	2003	333 (a)
1986	?	1994	645	1999	798	2004	475
1989	?	1995	623	2000	1201	2005	0
1990	324	1996	859	2001	0	2006	339 (b)
1992	374	1997	821	2002	247		

Source: Barber-Meyer, Kooyman & Ponganis 2008.

a) All chicks not counted due to rugged ice conditions and thus one chick assumed per adult counted.

b) G. Kooyman, *pers. comm.*, Nov. 2007.

In 2000, a section of the Ross Ice Shelf calved to form an iceberg 295km long and 40km wide. A fragmented section of this iceberg, known as B15A, together with another iceberg (C16) lodged near Ross Island in 2001. These icebergs had a major effect on sea ice distribution and primary production, and impeded the arrival of emperor penguins. In 2001 and several subsequent years, icebergs C16 and B15A affected the breeding success and colony locations of emperor and Adélie penguins by blocking access to foraging areas and destroying nesting habitat. In 2005, the emperor colony remained well below its pre-2000 size, with no sign of breeding (Kooyman *et al*. 2007). However, in 2006 the colony had returned to its pre-iceberg location and 339 chicks were produced (G. Kooyman, *pers. comm.*, Nov. 2007; Table 1).

A comprehensive population study of Adélie penguins occurred at Cape Crozier from 1961-62 through the 1981-82 austral summers, with 2000 to 5000 chicks banded yearly. There are two Adélie penguin (*Pygoscelis adeliae*) colonies at Cape Crozier, known as East and West Colonies. These are about 1km apart, separated by a 45-m high ridge and a sloping ice field across which the birds do not travel. A coastline of 1.6km with three beaches separated by rock outcrops provides penguins with access to West Colony. By contrast, East Colony has one 50-m wide rocky beach and 550m of sea cliffs. The population of the two colonies has increased substantially over the last 50 years, numbering 65,000 breeding pairs in 1958, 102,500 in 1966 and 177,083 in 1987. Numbers fell to 136,249 in 1989 and 106,184 in 1994. In 2000, the number of breeding pairs was estimated to be 118,772 (based on a projection from counts of selected subcolonies) (Ainley *et al*., 2004). The combined population of the East and West Colonies at Cape Crozier make it one of the largest Adélie colonies in Antarctica. The presence of the B15A and C16 icebergs from 2001 to 2005 had a significant effect on the Adélie penguin colony at Cape Crozier (Arrigo *et al*., 2002).

Approximately 1000 pairs of south polar skuas (*Catharacta maccormicki*) breed on ice-free ground surrounding the Adélie penguin colony. A demographic study of this colony began in 1961-62 and was still continuing in 1996-97. Chinstrap penguins (*Pygoscelis antarctica*), Wilson's storm petrels (*Oceanites oceanicus*), snow petrels (*Pagadroma nivea*), Antarctic petrels (*Thalassoica antarctica*), southern fulmars (*Fulmaris glacialoides*), southern giant petrels (*Macronectes giganteus*), black-backed gulls (*Larus dominicanus*), and south polar skuas from more northerly breeding sites, have been recorded as visitors to Cape Crozier.

Weddell seals (*Leptonychotes weddellii*) breed within the Area, with approximately 20 pups being recorded in recent years. Leopard seals (*Leptonyx hydrurga*) frequent the Area, with approximately 12 individuals recognized as regular visitors, while crabeater seals (*Lobodon carcinophagus*) are commonly seen at sea and on ice floes in the vicinity. Other mammals frequently observed within the Area include killer whales (*Orcinus orca*), of which several distinct types have been recognized.

Algae can be found throughout the Area on large patches of snow and on soils and stones, often below the soil surface layer. Large areas of green snow algae, covering more than 4 ha, can be found in the north of the Area in snowfields around the periphery of the Adélie penguin colony and skua nesting areas (Broady 1989). Particularly large patches have been reported in the snow-filled valley between the two coastal hills at the northern end of the Adélie colony, with snow-tinted green over at least one hectare. However, the extent of snow algae is not always obvious, with the green color often not revealed until a surface crust of white ice is broken away. Snow algae samples are dominated by a species of *Chlamydomonas*, and associated with occasional *Ulothrix*-like filaments and diatoms. Growth requires percolating meltwater during summer and nutrients derived from the bird colonies.

Prasiola crispa grows in slow water flows in the vicinity of the penguin colonies and ribbon-like growths of *P. calophylla* are found where water percolates over stones on the tallus slopes. Numerous small ponds are found throughout the Area, from small pools 1-m in diameter to a lake 150-m in diameter situated immediately south of The Knoll. The four ponds in the penguin colonies contain abundant phytoplankton populations of *Chlamydomonas* cf. *snowiae*, while ponds elsewhere support growths of red-brown to dark blue-green benthic felts dominated by Oscillatoriaceae. Occasional epilithic algae (dominated by *Gloeocapsa*, *Nostoc* and *Scytonema*) are found as blackish crusts coating rock surfaces where meltwater percolates.

Mosses are sparse and scattered in their distribution with most occurrences being of one or a small number of isolated cushions no larger than 10cm in diameter. Richer growths than this occur up to 0.5km NE of the hut on north and NW facing slopes and on slopes immediately above the coastal cliffs about 1km south of the penguin colonies. The moss species occurring at Cape Crozier have yet to be identified.

Encrusting orange lichens are present in shallow hollows, on rock outcrops, boulders and encrusting bryophytes on the slopes above the penguin colonies. Also present adjacent to Wilson's Stone Igloo is the fruticose lichen *Usnea* and the foliose lichen *Umbilicaria*, both duller in color but structurally more complex. Green algal crusts are found throughout the Area.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

The Cape Crozier hut (US) (169° 11' 14" E, 77° 27' 39" S) is situated on the NW side of a low peak (locally known as 'Pat's Peak') (Maps 1 and 2). A radio communications repeater is installed above the hut on a seasonal basis (Map 2). An observation hide dating from research programs in the 1960–80 period is located at the base of the north side of Post Office Hill. An old 'Jamesway' hut was built on a small terrace approximately 1km NE of the present hut (Map 2), although this was destroyed by fire and all hut debris has since been removed. Some materials such as nails, screws and hinges remain at the site.

A historic message post, designated as HSM No 69 under Measure 4 (1995), is situated in the West Colony on the NE coast of the Area (169° 16' 14" E, 77° 27' 15" S). The post was used by the 1901–04 British National Antarctic Expedition to provide information to the expedition's relief ships. An

historic rock hut known as Wilson's Stone Igloo (HSM No 21) (169° 17' 48" E, 77° 31' 48" S) is located on Igloo Spur (Map 1).

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

The nearest protected areas to Cape Crozier are on Ross Island: Lewis Bay (ASPA No 156), the site of the 1979 DC-10 passenger aircraft crash is the closest and 45km west; Tramway Ridge (ASPA No 130) near the summit of Mt. Erebus is 55km west; Discovery Hut on the Hut Point Peninsula (ASPA No 158 and HSM No 18); Arrival Heights (ASPA No 122) is 70km to the SW adjacent to McMurdo Station; Cape Royds (ASPA No 121), Backdoor Bay (ASPA No 157 and HSM No 15) and Cape Evans (ASPA No 155) are 75km west; and New College Valley (ASPA No 116) are 75km NW at Cape Bird.

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 research, and in particular for research on the bird fauna as well as on the vegetation assemblages in the Area, or for essential management or educational purposes;
- access to the historic sites may be permitted for scientific, management, educational or historical purposes on the condition that movement within the Area be restricted to accessing the historic sites;
- the actions permitted will not jeopardize the ecological, scientific or historic 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 is permitted by foot or by helicopter. Use of land vehicles within the Area is prohibited.

Aircraft may operate and land within the Area according to strict observance of the following conditions:

- All overflight of the Area for purposes other than access shall be at a height greater than 2500 ft (~750m) Above Ground Level, except when specifically permitted for scientific purposes.
- The primary designated helicopter landing site preferred for most access to the Area is located at 169° 11' 25" E, 77° 27' 42" S (elevation 240m) (Map 2). This landing site is below and 150m north-west of the Cape Crozier field hut (US) and is marked by a circle of bright orange painted rocks. An alternative, secondary, landing site is located 150m above the hut, which may also be used when necessary.
- A third designated helicopter landing site is located above and 350m north-west of Wilson's Stone Igloo (Map 1) in an area of relatively flat terrain.

- When required for scientific, educational or management purposes, landings may be made elsewhere within the Area provided this is specifically authorized by permit.
- To minimize the risks of inadvertent overflight of bird colonies, helicopter pilots accessing the Area for the first time should be accompanied by another pilot with previous experience of flying into the Area.
- Use of helicopter smoke grenades is prohibited unless absolutely necessary for safety, and all grenades should be retrieved.
- When transporting permitted visitors, pilots, air crew, or passengers en route elsewhere on helicopters are prohibited from moving on foot beyond the immediate vicinity of the designated landing site and field hut unless specifically authorized by a Permit.
- Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimize effects.
- Permitted visitors should keep to natural penguin tracks when walking through bird colonies and should not approach occupied nests except as required for scientific or management purposes. Care should be taken to avoid trampling nests when moving through skua territories.
- Visitors should avoid walking on visible vegetation and care should be exercised walking in areas of moist ground, where foot traffic can easily damage sensitive soils, plant and algal communities and degrade water quality.

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

Activities that may be conducted within the Area include:

- scientific research or educational visits that will not jeopardize the ecosystem of the Area;
- essential management activities, including monitoring;
- visits to historic sites for scientific, management, educational or historical reasons subject to the conditions described within this plan;
- activities with the aim of preserving or protecting the historic resources within the Area.

7(iii) Installation, modification or removal of structures

- No structures are to be erected within the Area except as specified in a permit;
- All scientific equipment installed in the Area must be 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;
- 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 Area should be within a 100-m radius of the hut (169° 11' 14" E, 77° 27' 39" S). Camping is permitted outside of the hut vicinity where access is required to distant parts of the Area. Such camping should preferably be at sites that have been previously used, are not vegetated or occupied by breeding birds, and should be on snow or ice-covered ground if available. Researchers should consult with the appropriate national authority to obtain up-to-date information on any sites where camping may be preferred.

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 of the Area visitors shall take special precautions against introductions. Of particular concern are microbial, invertebrate and vegetation introductions from soils at other Antarctic sites, including stations, or from regions outside Antarctica. To minimize the risk of introductions, visitors should thoroughly clean footwear and any equipment to be used in the area – particularly sampling equipment and markers – before entering the Area.
- In view of the presence of breeding bird colonies at Cape Crozier, 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.
- Unless specifically authorized by permit, visitors are prohibited from interfering with or attempting restoration of Wilson's Stone Igloo in any way, or from handling, taking or damaging any artifacts. Evidence of recent changes, damage or 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, including all human wastes, shall be removed from the Area.

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

- 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 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.

8. Selected references

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Arrigo, K. R., G.L. van Dijken, D.G. Ainley, M.A. Fahnestock, & T. Markus. 2002. Ecological impact of a large Antarctic iceberg. *Geophysical Research Letters* **29**(7): 1104.

Barber-Meyer, S.M., G.L. Kooyman, & P.J. Ponganis. 2008. Trends in western Ross Sea emperor penguin chick abundances and their relationships to climate. *Antarctic Science* **20** (1), 3–11.

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

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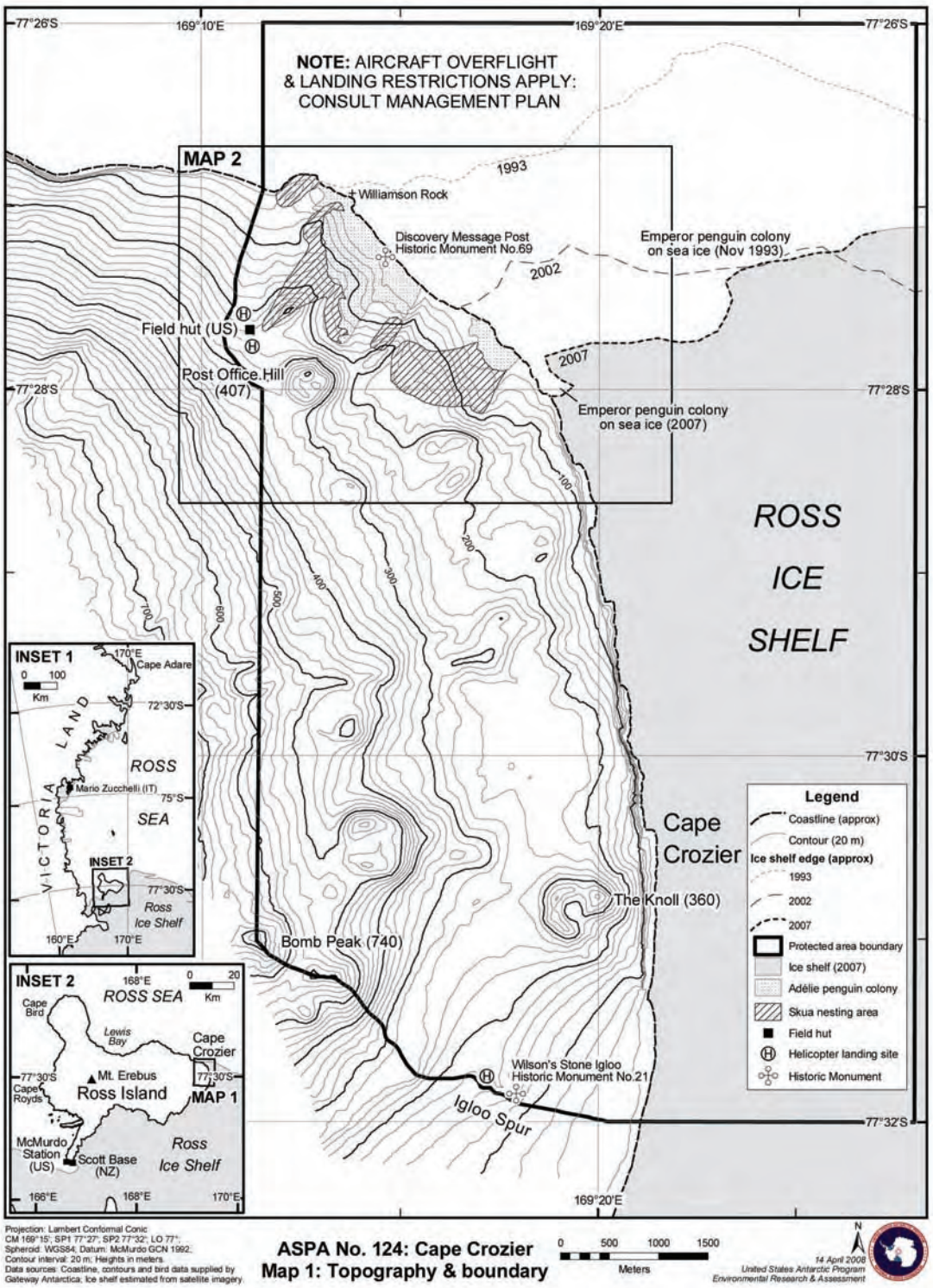
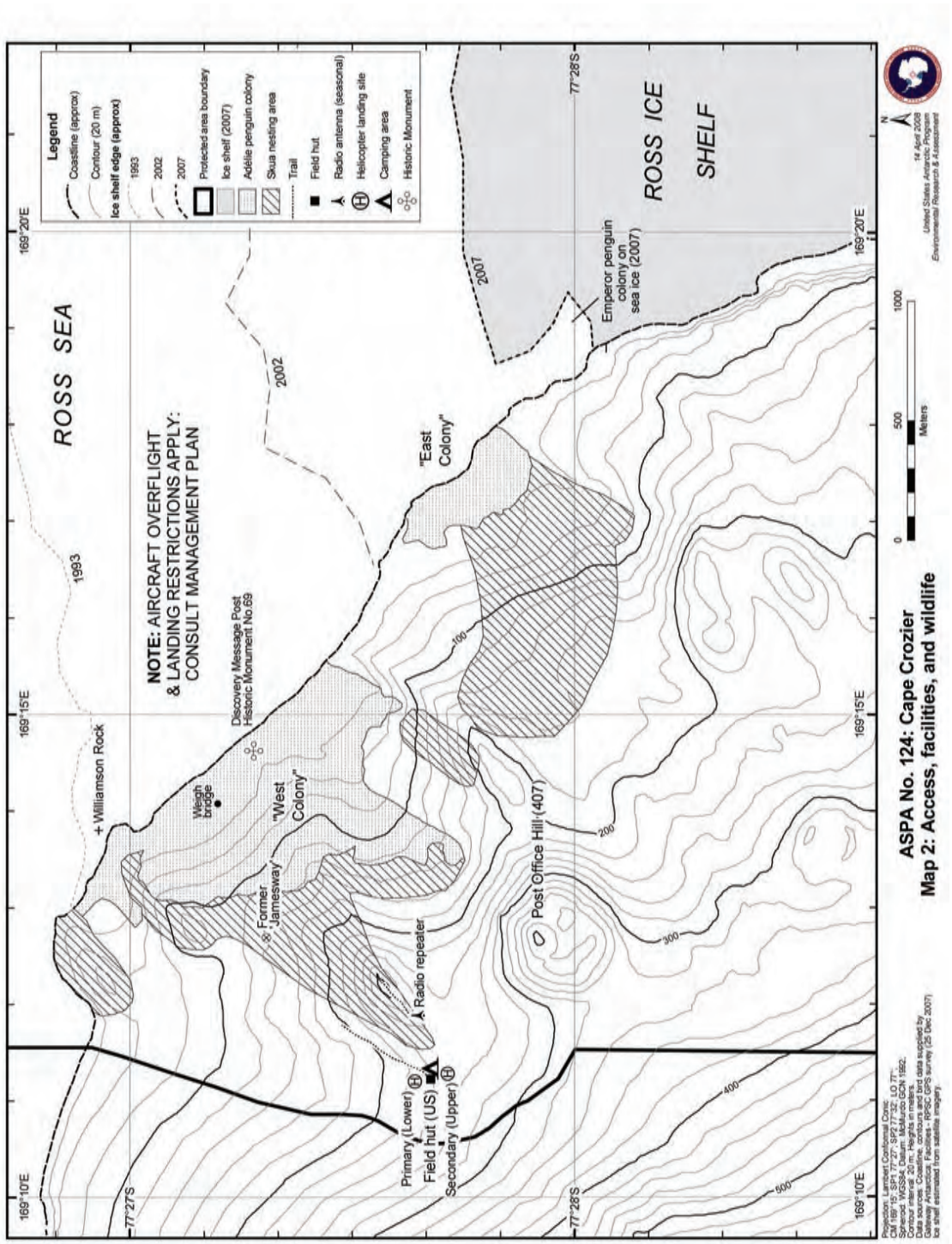
Kooyman, G.L., D.G. Ainley, G. Ballard, & P.J. Ponganis. 2007. Effects of giant icebergs on two emperor penguin colonies in the Ross Sea, Antarctica. *Antarctic Science* **19**(1): 31-38.


NOTE: AIRCRAFT OVERFLIGHT & LANDING RESTRICTIONS APPLY: CONSULT MANAGEMENT PLAN
MAP 2
1993
2002
2007
Williamson Rock
Discovery Message Post Historic Monument No.69
Emperor penguin colony on sea ice (Nov 1993)
Field hut (US)
Post Office Hill (407)
Emperor penguin colony on sea ice (2007)
ROSS ICE SHELF
77°26'S
77°28'S
77°30'S
77°32'S
169°10'E
169°20'E
INSET 1
Cape Adare
VICTORIA LAND
ROSS SEA
Mario Zucchelli (IT)
INSET 2
Ross Ice Shelf
INSET 2
ROSS SEA
Cape Bird
Lewis Bay
Cape Crozier
Mt. Erebus
Ross Island
MAP 1
Cape Royds
McMurdo Station (US)
Scott Base (NZ)
Ross Ice Shelf
Cape Crozier
The Knoll (360)
Bomb Peak (740)
Wilson's Stone Igloo Historic Monument No.21
Igloo Spur
Legend
Coastline (approx)
Contour (20 m)
Ice shelf edge (approx)
1993
2002
2007
Protected area boundary
Ice shelf (2007)
Adélie penguin colony
Skua nesting area
Field hut
Helicopter landing site
Historic Monument
Projection: Lambert Conformal Conic
CM 169°15'; SP1 77°27'; SP2 77°32'; LO 77°;
Spheroid: WGS84; Datum: McMurdo GCN 1992.
Contour interval: 20 m; Heights in meters.
Data sources: Coastline, contours and bird data supplied by Gateway Antarctica; Ice shelf estimated from satellite imagery.
ASPA No. 124: Cape Crozier
Map 1: Topography & boundary
0 500 1000 1500
Meters
N
14 April 2008
United States Antarctic Program
Environmental Research & Assessment


ROSS SEA
ROSS ICE SHELF
NOTE: AIRCRAFT OVERFLIGHT & LANDING RESTRICTIONS APPLY: CONSULT MANAGEMENT PLAN
Legend
Coastline (approx)
Contour (20 m)
Ice shelf edge (approx)
1993
2002
2007
Protected area boundary
Ice shelf (2007)
Adélie penguin colony
Skua nesting area
Trail
Field hut
Radio antenna (seasonal)
Helicopter landing site
Camping area
Historic Monument
+ Williamson Rock
Discovery Message Post Historic Monument No.69
Weigh bridge
"West Colony"
Former 'Jamesway'
"East Colony"
Emperor penguin colony on sea ice (2007)
Post Office Hill (407)
Radio repeater
Primary (Lower)
Field hut (US)
Secondary (Upper)
169°10'E
169°15'E
169°20'E
77°27'S
77°28'S
100
200
300
400
500
0
500
1000
Meters
N
14 April 2008
United States Antarctic Program
Environmental Research & Assessment
ASPA No. 124: Cape Crozier
Map 2: Access, facilities, and wildlife

Measure 8 (2008)

Antarctic Specially Protected Area No 135 (North-East Bailey 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 Bailey Peninsula, Budd Coast, Wilkes Land as Site of Special Scientific Interest ("SSSI") No 16 and annexed a Management Plan for the Site;
- Resolution 7 (1995), which extended the expiry date of SSSI 16 from 31 December 1995 to 31 December 2000;
- Measure 2 (2000), which extended the expiry date of SSSI 16 from 31 December 2000 until 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 16 as Antarctic Specially Protected Area No 135;
- Measure 2 (2003), which annexed a revised Management Plan for ASPA 135;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 135;

Desiring to replace the existing Management Plan for ASPA 135 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 135: North-East Bailey Peninsula, Budd Coast, Wilkes Land, which is annexed to this Measure, be approved; and

2) all prior Management Plans for ASPA 135, namely those annexed to:

    - Recommendation XIII-8 (1985), and

    - Measure 2 (2003);

    shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 135

NORTH-EAST BAILEY PENINSULA, BUDD COAST, WILKES LAND

Introduction

North-east Bailey Peninsula was designated in 1985 as Site of Special Scientific Interest (SSSI) No 16 through Recommendation XIII-8, after a proposal by Australia. In accordance with Resolution 5 (1996) the site was redesignated and renumbered as Antarctic Specially Protected Area (ASPA) No 135. The ASPA is designated primarily as a scientific reference site which, since the early 1980s, has supported a range of studies into the diverse assemblage of vegetation found in the area. The site is located in close proximity to Australia's Casey station, which allows ease of access for field research but also creates the potential for disturbance of study areas.

1. Description of values to be protected

Windmill Islands Region

Outside the Antarctic Peninsula, the Windmill Islands region supports some of the most extensive and best-developed plant communities on continental Antarctica. The region is floristically diverse with rich associations of macrolichens and bryophytes that occupy very specific ecological niches. The flora of the Windmill Islands region comprises at least 36 species of lichen, 6 bryophytes (5 mosses and 1 liverwort), 150 non-marine algae and at least 120 fungal taxa. An ascomycete mycorrhizal fungus has been shown in the liverwort *Cephaloziella varians*.

Lichens constitute the largest part of the Windmill Islands region flora, with bryophytes being dominant in moister areas. At least 11 cryptogamic community types have been identified. These vegetation groupings exist within a continuum of ecological variation along environmental gradients influenced by soil moisture, soil chemistry, and microclimate. On the peninsulas in the region, the major community types are distinguished by the dominance of three bipolar lichens, *Usnea sphacelata, Pseudephebe minuscula* and *Umbilicaria decussata*. Vegetation communities on the islands are dominated by algal species such as *Prasiola crispa*, with moss and lichen being considerably poorer developed than on the peninsulas. Mosses and lichens are all but absent in eutrophic sites near bird colonies with a prevalence of *Prasiola crispa, Prasiococcus calcareus* and *Desmococcus olivaceus* chlorophyte algae occurring.

North-east Bailey Peninsula Protected Area

The North-east Bailey Peninsula Antarctic Specially Protected Area (the Area) is representative of a diverse assemblage of the Windmill Islands region flora. As such, the Area has intrinsic ecological value and scientific importance, particularly to botanists, microbiologists, soil scientists and glacial geomorphologists.

The Area contains three extensive and contrasting moss fields that have been the subject of taxonomic, ecological and physiological studies since the summer of 1982/83. Additional studies have included population ecology of invertebrates associated with the vegetation, and soil/water chemistry. Permanent lichen growth monitoring sites are established, as are sites monitoring annual growth increments in mosses. Other floral studies have concentrated on the determination of biodiversity,

physiological and biochemical attributes, component interactions, impact of anthropogenic pollutants, and potential effects of global climate change.

Global change studies have included a multi-season investigation into the impact of water and nutrients on various components of the vegetation, associated studies into the tolerance of mosses to both submergence and desiccation, and examination of the tolerance of three moss species to increased UV-B as a result of ozone depletion. Fine-scale analysis of genetic diversity of one cosmopolitan moss species *Ceratodon purpureus* has been compared for this location and others in the region. Dating of long cores of mosses has been achieved using ^{14}C released during atmospheric atomic bomb testing in the 1950s and 1960s.

The Area is included within the geographic coverage of an Australian Antarctic programme state of the environment indicator "Windmill Islands terrestrial vegetation dynamics", which involves quantitative analysis of a series of permanent transects across selected vegetation, with the aim of monitoring the effects of climate change on Antarctic cryptogamic communities.

Moss and lichen communities are used to monitor environmental impacts of Casey station. The Area provides baseline data with which to compare changes in similar plant communities in the immediate surroundings of Casey station. The Area also serves as a valuable comparative site for similar plant communities in ASPA 136 Clark Peninsula, which are subject to less environmental stress and disturbance.

2. Aims and objectives

Management of the Area aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance and sampling in the Area;
- preserve a part of the natural ecosystem as a reference Area for the purpose of future comparative studies and to assess direct and indirect effects of Casey station;
- provide for compelling scientific research which cannot be served elsewhere;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area; and
- allow for the continued maintenance of the Tandem Delta antenna communications installation and associated facilities without degradation of the Area's values.

3. Management activities

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

- place signs illustrating the location and boundaries, with clear statements of entry restrictions at appropriate locations at the boundaries of the Area to help avoid inadvertent entry;
- display prominently information on the location of the Area (stating special restrictions that apply) and a copy of this Management Plan at Casey station and provide copies of this information to ships visiting the vicinity;
- secure and maintain in good condition markers, signs and structures erected within the Area for scientific or management purposes and remove them when no longer required;
- remove abandoned equipment or materials to the maximum extent possible provided this does not adversely impact on the values of the Area;

- detailed mapping of ongoing scientific experimental sites to ensure they are not disturbed;
- visit the Area 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 management activities are adequate; and
- review the Management Plan at least every five years and update as required.

4. Period of designation

Designated for an indefinite period.

5. Maps

- Map A: Windmill Island, showing location of the North-east Bailey Peninsula ASPA No 135 and other protected areas within the region.

  Map specifications:

  Projection: Lambert Conformal Conic

  Horizontal Datum: WGS84
- Map B: North-east Bailey Peninsula, Antarctic Specially Protected Areas No 135: Topography, vegetation, birds, roads and structures.

  Map specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84.

  Contour Interval: 10m.
- Map C: North-east Bailey Peninsula, Antarctic Specially Protected Areas No 135: Vegetation

  Map specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84.
- Map D: North-east Bailey Peninsula, Antarctic Specially Protected Areas No 135. Geology.

  Map specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84.
- Map E: North-east Bailey Peninsula, Antarctic Specially Protected Areas No 135: Showing buildings, structures and vegetation.

  Map specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84.

6. Description of the Area

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

General description

The Area is located on Bailey Peninsula in the Windmill Islands region of Budd Coast, Wilkes Land, East Antarctica (Map A). Bailey Peninsula is an area of rock exposures and permanent snow and ice fields lying between Newcomb Bay and O'Brien Bay, two kilometres south of Clark Peninsula.

The Area is located in the north-east of Bailey Peninsula, approximately 200m east of Casey station (66°16'59.9"S, 110°31'59.9"E), and covers an area of approximately 0.28km^2. The boundary is irregular, extending in the north to within approximately 70m south of Brown Bay. Boundary coordinates for the Area are shown in Appendix 1.

Topographically, Bailey Peninsula comprises low lying, rounded ice-free rocky outcrops (maximum altitude approximately 40 m), and, rising from the coast to the Løken Moraines (altitude approximately 130 m) approximately three kilometres to the east. Intervening valleys are filled with permanent snow or ice, or glacial moraine and exfoliated debris, and contain water catchment areas. The topography of Bailey Peninsula is shown at Map B.

Climate

The climate of the Windmill Islands region is frigid-Antarctic. Climate records from nearby Casey station (altitude 32 m) show mean temperatures for the warmest and coldest months of 2.2 and -11.4°C respectively, extreme temperatures ranging from 9.2 to -34°C, and mean annual maximum and minimum temperatures of –5.9°C and –12.5°C respectively. The climate is dry with a mean annual snowfall of 219 mm year (rainfall equivalent), precipitation as rain has been recorded in the summer.

There is an annual average wind speed of 25km per hour. Gale winds are predominantly from the east, off the polar ice cap. Blizzards may occur very suddenly and are a frequent occurrence especially during winter. Snowfall is common during the winter, but the extremely strong winds scour the snow off exposed areas of the Peninsula. On most hill crests on Bailey Peninsula snow gathers in the lee of rock outcrops and in depressions in the substratum. Further down the slopes snow forms deeper drifts.

Geology and soils

WINDMILL ISLANDS REGION

The Windmill Islands region represents one of the eastern-most outcrops of a Mesoproterozoic low-pressure granulite facies terrain that extends west to the Bunger Hills and further to the Archaean complexes in Princess Elizabeth Land, to minor exposures in the east in the Dumont d'Urville area and in Commonwealth Bay. The total outcrop areas do not exceed more than a few square kilometres. The Mesoproterozoic outcrop of the Windmill Islands and the Archaean complexes of Princess Elizabeth Land are two of the few major areas in East Antarctica that can be directly correlated with an Australian equivalent in a Gondwana reconstruction. The Mesoproterozoic facies terrain comprises 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 cut by easterly-trending late dolerite dykes.

BAILEY PENINSULA

Bailey Peninsula is part of the northern gradation of a metamorphic grade transition which separates the northern part of the Windmill Islands region from the southern part. The metamorpohic grade ranges from amphibolite facies, sillimanite-biotite-orthoclase in the north at Clark Peninsula, through biotite-cordierite-almandine granulite, to hornblende-orthopyroxene granulite at Browning Peninsula in the south. The Ardery Charnockite of the south is prone to deep weathering and crumbles readily because of its mineral assemblage, whereas the metamorphic sequences of the northerly parts of the region have a much more stable mineral assemblage and crystalline structure. This difference has a significant influence on the distribution of vegetation in the Windmill Islands region with the northern rock types providing a more suitable substrate for slow growing lichens.

The leucocratic granite gneiss, which constitutes the main outcrop on Bailey Peninsula, may be subdivided into leucogneiss and two different types of garnet-bearing gneiss. The outcrop on Bailey Peninsula is characterised as a garnet-bearing gneiss type 1 which is white, medium grained and foliated. The foliation is defined by the alignment of an early biotite generation that is tight to openly folded, with a garnet and a later biotite generation that overgrows the fabric. Unmetamorphosed and undeformed dolerite dykes occur over Bailey Peninsula such as at "Penguin Pass" (66°17’18"S, 110°33’16"E), to the south of the Area. Small outcrops of metapelite, metapsammite and leuco- gneisses occur on the Peninsula. Recent geochronology of the rocks of the Windmill Islands region suggest two major phases of metamorphism, the first at c. 1400-1310 Ma, an upper amphibolite facies event, followed by a granulite facies overprint c. 1210-1180 Ma. The geology of Bailey Peninsula is shown at Map D.

GLACIATION

The Windmill Islands region was glaciated during the Late Pleistocene. The southern region of the Windmill Islands was deglaciated by 8000 corr. yr B.P., and the northern region, including Bailey Peninsula deglaciated by 5500 corr. yr B.P. Isostatic uplift has occurred at a rate of between 0.5 and 0.6 m/100 yr, with the upper mean marine limit, featured as ice-pushed ridges, being observed on Bailey Peninsula at approximately 30m where they extend in continuous rows from the present sea-level.

SOILS

Soils on Bailey Peninsula are derived from weathered gneiss, moraine deposits and outwash gravels stemming from glacial episodes. Seabirds have a large impact on soil formation in the entire landscape. Soils are frozen much of the year during summer, the upper 30-60 cm thaws with the few top centimetres, refreezing at night. Soils are mainly formed by cryoturbation and cryoclastic weathering. In the vicinity of Casey station most soils are classified by Blume, Kuhn and Bölter (2002) as cryosols with lithic, leptic, skeletal, turbic and stagnic subunits. Other soils in the Area are gelic subunits of histosols, podzols, and regosols, boulder and rock outcrops with ecto- and endolithic flora are classified as Lithosols.

Lakes

Cold monomictic lakes and ponds occur throughout the Windmill Islands region in bedrock depressions and are usually ice-free during January and February. Nutrient rich lakes are found near the coast, in close proximity to penguin colonies or abandoned colonies, sterile lakes are located further inland and are fed by meltwater and local precipitation. A number of these lakes and ponds occur across Bailey Peninsula with two large lakes located 500m to the west of the Area. Two ponds occur within the protected Area, the largest being approximately 75m by 50m and the smaller approximately 25m diameter. The distribution of lakes and ponds on Bailey Peninsula is shown at Map B.

Vegetation

The vegetation of Bailey Peninsula is exceptionally well developed and diverse and the Area represents one of the most important botanical sites on continental Antarctica. Within the relatively complex plant communities and contrasting habitats found on Bailey Peninsula, are found at least 23 lichens, three mosses, and a liverwort. There are expansive dense stands of macrolichens and in the more moist and sheltered areas bryophytes form closed stands of 25-50 m^2 with turf up to 30 cm in depth. Together with the lichens *Umbilicaria decussata, Pseudephebe minuscula* and *Usnea sphacelata* mixed bryophytes dominate the vegetation cover of most of the ice-free areas. This is particularly so on the north-east and centre of the Peninsula where there are dense communities similar to those found on Clark Peninsula. The most complex bryophyte communities are restricted to small locally moist hollows adjacent to melt pools and streams in the central north-east and central parts of the Peninsula. Vegetation is absent or poorly developed on the ice-free areas of the Peninsula's southern coast. Appendix 2 provides a list of bryophytes and lichens identified in the Area. In many areas mosses appear to becoming increasingly moribund and are being out-competed or overgrown by lichens.

Two principal cryptogamic subformations are recognised; a lichen-dominated association occupying a variety of windswept substrata ranging from bedrock to gravel, and, a short cushion and turf moss subformation comprising four moss dominated sociations. The vegetation of Bailey Peninsula is shown at Maps C and E.

At least 150 taxa of non-marine algae and cyanobacteria have been isolated; these include 50 cyanobacteria, 70 chlorophytes and 23 chromophytes. The taxa have been found in snow and ice, soil, rocks, ephemeral ponds, tarns and lakes; 24 cyanobacterial and algal species occur in the snow. Snow algae are abundant and widespread in the icy corridors between the rocky outcrops and in semi-permanent snow drifts. A list of cyanobacterial and algal species from the Area, Bailey Peninsula, and the Windmill Islands region is shown in Appendix 3.

The vegetated soils of Bailey Peninsula contain fungal hyphae, yeasts, fungal propagules, an assortment of algae, cyanobacteria, protozoa, and provide a significant habitat for soil microfauna such as nematodes, mites, rotifers and tardigrades. There is relatively low fungal diversity in the Windmill Islands region, with 35 taxa representing 22 genera of fungi being isolated from soils, mosses, algae and lichens. Thirty fungal taxa have been detected in soils in the vicinity of Casey station with 12 of these taxa restricted to anthropogenically influenced soils around the station, *Penicillium* species dominate in these sites. Within the Windmill Islands region, 21 fungal taxa have been isolated the mosses, with 12 taxa isolated from algae and 6 from lichens. A number of fungi have also been found associated with animals of the region. Appendix 4 provides detail of the taxa and their source.

Birds

Four species of birds are known to nest in the vicinity of Bailey Peninsula. These include Adélie penguin *Pygoscelis adeliae*, the most abundant bird species in the Area. The nearest breeding colony is on Shirley Island about 1.5km west of Casey station. Snow petrels *Pagodroma nivea* are seen all year round and breed throughout the Windmill Islands region including Reeve Hill about 750m west of the Area and Budnick Hill, 600m to the north-west. Wilson's storm petrels *Oceanites oceanicus* breed throughout the Windmill Islands region and nest in the Area. The Antarctic skua *Catharacta maccormicki* breeds throughout the Windmill Islands region at widely dispersed nests, mostly near Adélie penguin colonies.

Other birds that breed in the Windmill Islands region but not in the immediate vicinity of Bailey Peninsula include southern giant petrel *Macronectes giganteus*, cape petrel *Daption capense*, southern

fulmar *Fulmarus glacialoides* and Antarctic petrel *Thalassoica antarctica*. The emperor penguin *Aptenodytes forsteri* is a common visitor to the Windmill Islands region and a breeding colony of approximately 2000 pairs is established in the area of Peterson Bank.

Terrestrial invertebrates and microbial communities

The Antarctic flea *Glaciopsyllus antarcticus* has been found in the nests of southern fulmars. The anopluran louse *Antarctophthirus ogmorhini* is found on the Weddell seal *Leptonychotes weddellii* A number of species of mallophagan lice have also been found on birds.

The mite *Nanorchestes antarcticus* has been found on Bailey Peninsula at sites characterised as having sandy or gravelly soils, free of extensive moss or lichen cover, and moist but not water-logged.

Five species of tardigrades have been collected on Bailey Peninsula: *Pseudechiniscus suillus, Macrobiotus* sp., *Hypsibius antarcticus, Ramajendas frigidus* and *Diphascon chilenense.* Significant positive associations between bryophytes and the most common species of tardigrades *P. suillus, H. antarcticus* and *D. chilenense*, have been found, and strong negative associations between those species and algae and lichens have been established. No systematic or ecological accounts of nematodes have yet been published for the Windmill Islands region.

Protozoa have been studied at a number of sites on Bailey Peninsula and in the Area ciliates and testate amoebae are active. Twenty seven ciliate species and six testacean species have been found (see Appendix 5).

6(ii) Special zones within the Area

There are no special zones within the Area.

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

Casey station (Australia) is located approximately 200m west of the Area. Prior to the designation of the Area in 1986 an array of radio transmitters had been progressively established at the site since 1964. During the 2001/2002 and 2007/2008 summers redundant aerials and some other infrastructure were removed. A number of structures remain within the Area, including a small storage rack in the north-west, the transmitter building (which can also be used as an emergency refuge), a 45m high tandem delta antenna mast and a non-directional beacon antenna located in the south-east (Map E). Another 35m high mast is located approximately 100m south of the Area.

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

ASPA No 136, Clark Peninsula, is located 2.5km to the north-east, across Newcomb Bay.

ASPA No 103, Ardery and Odbert Islands, is located approximately 11km to the south, west of Robinson Ridge.

ASPA No 160, Frazier Islands, is located in the eastern part of Vincennes Bay approximately 16km to the west-north-west.

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 compelling scientific research, maintenance of the Tandem Delta antenna communications installation and associated facilities, or

for essential management purposes consistent with the Management Plan's objectives and provisions, and providing that the actions permitted will not jeopardise the ecological or scientific values of the Area or interfere with existing scientific studies. Conditions that must be included in the Permit are that the Permit or an authorised copy shall be carried within the Area, and that the Permit specify the period for specific activities. Additional conditions, consistent with the Management Plan's objectives and provisions, may be included by the issuing Authority.

7(i) Access to and movement within or over the Area

Helicopters are prohibited from landing within the Area.

Vehicles are prohibited from entering the Area, except for the purpose of conducting ongoing maintenance of the transmitter building, associated buildings and antennas. Access to the transmitter building near the south-east end of the Area should be via the over-snow access route to Law Dome, several kilometres to the south. Within the Area, vehicles should follow the most direct practicable route between the Area boundary and the communications facilities, avoiding vegetation and cables. Vehicle use in the Area shall be kept to a minimum.

The Area is accessible on foot. Casey station is located approximately 200m west of the north west boundary of the Area. Visitors should avoid walking on visible vegetation. Care should be exercised when walking in areas of moist ground, where foot traffic can easily damage sensitive soils, plant or algae communities, and degrade water quality. Pedestrian traffic should be kept to the minimum necessary to undertake permitted activities and every reasonable effort should be made to walk around such areas, keeping to ice-covered areas or bare rock where it is practicable and safe to do so.

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 ecosystem of the Area.

Essential management activities, including monitoring.

Sampling, but this should be the minimum required for the approved research programs.

Maintenance and activities associated with the antennas and transmitter facility.

7(iii) Installation, modification or removal of structures

Any structures erected or installed within the Area are to be specified in a Permit. Scientific markers and equipment must be secured and maintained in good condition, clearly identifying the permitting country, name of principal investigator and year of installation. All such items should be made of materials that pose minimum risk of contamination of the Area. Removal of equipment associated with scientific research, before the Permit for that research expires, shall be a condition of the Permit. Details of markers and equipment left in situ should be reported to the permitting Authority. Such details should include a description, expected "use by date", and accurate GPS location with longitude and latitude in decimal degrees to 6 decimal places (where practicable, details should also be given regarding the horizontal datum used, model of GPS, base station details, and horizontal and vertical accuracies).

7(iv) Location of field camps

Camping is prohibited within the Area.

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

- No living animals, plant material or microorganisms shall be deliberately introduced 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 herbicides or pesticides shall be brought into the Area. Other chemicals may be introduced for scientific or management purposes specified in a Permit and shall be removed from the Area at or before the conclusion of the permitted activity.
- Permanent fuel depots are prohibited. Fuel may be temporarily stored in the Area for essential purposes connected with an activity for which a Permit has been granted. Such fuel shall be stored in sealed and bunded containers.
- Any materials introduced for a stated period shall be removed at or before the conclusion of the stated period, and shall be stored and handled so that the risk of dispersal 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 taking of or harmful interference with animals is involved this should, as a minimum standard, be in accordance with the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.*

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

Material may only be collected or removed from the Area 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, and 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*. In such cases the appropriate national authority must be notified and approval obtained.

7(viii) Disposal of waste

All wastes, including all human wastes, 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

Permits may be granted to enter the Area to carry out the following measures, provided they do not adversely impact on the values of the Area:

- biological monitoring and Area inspection and management activities, which may involve the collection of small samples for analysis or review;
- erect or maintain signposts;
- remove the storage rack, buildings, antenna masts and associated supplies located in the north-west of the Area; and
- other protective measures as required.

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 Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage; to be used both in any review of the Management Plan and in organising the scientific use of the Area.

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Appendix 1: North-east Bailey Peninsula, Antarctic Specially Protected Area No 135, boundary coordinates

Boundary Point	Longitude	Latitude	**Boundary Point**	Longitude	Latitude
1	110°32’56”	66°17’11”	**15**	110°32’16”	66°16’52”
2	110°32’50”	66°17’11”	**16**	110°32’19”	66°16’53”
3	110°32’41”	66°17’10”	**17**	110°32’19”	66°16’55”
4	110°32’22”	66°17’7”	**18**	110°32’24”	66°16’55”
5	110°32’20”	66°17’6”	**19**	110°32’25”	66°16’53”
6	110°32’18”	66°17’2”	**20**	110°32’29”	66°16’53”
7	110°32’18”	66°17’0”	**21**	110°32’44”	66°16’54”
8	110°32’14”	66°17’0”	**22**	110°33’9”	66°17’5”
9	110°32’9”	66°16’56”	**23**	110°33’11”	66°17’6”
10	110°32’8”	66°16’54”	**24**	110°33’10”	66°17’9”
11	110°32’5”	66°16’54”	**25**	110°33’2”	66°17’11”
12	110°32’7”	66°16’52”			
13	110°32’7”	66°16’52”			
14	110°32’12”	66°16’51”			

Appendix 2: Mosses, liverworts and lichens identified from North-east Bailey Peninsula Antarctic Specially Protected Area No 135, (from Mellick 1994, Seppelt pers. comm.)

Mosses
Bryum pseudotriquetrun (Hedw.) Gaertn., Meyer et Scherb.
Ceratodon purpureus (Hedw.) Brid.
Schistidium antarctici Card.
Liverworts
Cephaloziella varians Steph.
Lichens
Acarospora gwynii Dodge & Rudolph
Amandinea petermannii (Hue) Matzer, H. Mayrhofer & Scheid.
Buellia cf. cladocarpiza Lamb?
Buellia frigida Darb.
Buellia grimmiae Filson
Buellia cf. lignoides Filson
Buellia papillata Tuck.
Buellia pycnogonoides Darb.
Buellia soredians Filson
Caloplaca athallina Darb.
Caloplaca citrina (Hoffm.) Th. Fr.
Candelariella flava (C.W. Dodge & Baker) Castello & Nimis
Lecanora expectans Darb.
Lecidea spp.
Lecidea cancriformis Dodge & Baker (=*Lecidea phillipsiana* Filson)
Lecidea andersonii Filson
Lepraria sp.
Pleopsidium chlorophanum (Wahlenb.) Zopf
Rhizocarpon geographicum
Rhizoplaca melanophthalma (Ram.) Leuck. & Poelt
Rinodina olivaceobrunnea Dodge & Baker
Physcia caesia (Hoffm.) Hampe
Umbilicaria aprina Nyl.
Umbilicaria decussata (Vill.) Zahlbr.
Umbilicaria cf. propagulifera (Vainio) Llano
Xanthoria elegans (Link) Th. Fr.
Xanthoria mawsonii Dodge.
Pseudephebe minuscula (Nyl ex Arnold) Brodo & Hawksw.
Usnea antarctica Du Rietz
Usnea sphacelata R. Br.

Appendix 3: Fungi isolated from soils, mosses, lichens and algae from ASPA No 135 and from species of wider distribution in the Windmill Islands region (from Azmi 1998 and Seppelt pers. comm. 2008)

Note: This is only a partial list of the taxa isolated from the Windmill Islands

	ASPA No 135	Bailey Peninsula	Bryum pseudotri-quetrum	Ceratodon purpureus	Grimmia antarctici	Algae	Lichens*
Acremonium sp.					✓		
Acremonium crotociningenum (Schol-Schwarz) W. Gams		✓					✓
Alternaria alternata (Fr.) Keissl.		✓					
Arthrobotrys			✓	✓			
Aspergillus nidulans (Eidam) G. Winter		✓					
Aspergillus sp.						✓	
Botrytis cinerea Pers.		✓					
Chrysosporium sp	✓		✓	✓	✓		
Chrysosporium pannorum (Link.) S. Hughes	✓	✓	✓	✓	✓	✓	✓
Cladosporium sp.		✓					
Diplodia sp.		✓					
Fusarium oxysporum E.F. Sm., & Swingle		✓					
Geomyces sp.		✓	✓	✓		✓	✓
Geotrichum sp.							
Mortierella sp.		✓	✓		✓	✓	✓
Mortierella gamsii Milko		✓	✓				
Mucor pyriformis Scop.		✓	✓		✓		
Mycelia sterilia 1**	✓		✓	✓	✓	✓	✓
Mycelia sterilia 2**	✓		✓	✓	✓	✓	
Mycelia sterilia 3**	✓		✓	✓	✓		
Mycelia sterilia 4**		✓					
Nectria peziza Berk.		✓	✓		✓		
Penicillium chrysogenum Thom	✓		✓		✓	✓	
P. commune Thom		✓					
P. corylophilum Dierckx		✓					
P. expansum Link		✓	✓	✓		✓	

	ASPA No 135	Bailey Peninsula	Bryum pseudotri-quetrum	Ceratodon purpureus	Grimmia antarctici	Algae	Lichens*
P. hirsutum Dierckx		✓					
P. palitans Westling		✓	✓	✓	✓		
P. roqueforti Thom		✓					
Penicillium sp.			✓	✓	✓	✓	
Penicillium sp. 1							
Penicillium sp. 2							
Phialophora malorum (Kidd & Beaumont) McColloch		✓	✓	✓	✓	✓	
Phoma herbarum Westend		✓	✓	✓	✓		
Phoma sp.	✓						
Phoma sp. 1			✓	✓	✓		
Phoma sp. 2				✓	✓		
Rhizopus stolonifer (Ehrenb.) Vuill.		✓				✓	
Sclerotinia sclerotiorum (Lib.) de Bary		✓					
Thelebolus microsporus (Berk. & Broome) Kimbr.	✓	✓	✓	✓	✓	✓	✓
Trichoderma harzianum Rifai		✓					
T. pseudokoningi Rifai		✓					

*Lichens are *Xanthoria mawsonni, Umbilicaria decussata and Usnea sphacelata.*

** Mycelia sterilia is a general term for sterile mycelia. Approximately 45% of all the isolates obtained from the Windmill Islands have not been identified because they remained sterile in culture.

Appendix 4: Cyanobacterial and algal species identified from the Windmill Islands region

The taxa are listed in alphabetical order under each phylum together with their habitats and whether they are maintained in culture. A = Aquatic, T = Terrestrial (from soil), S = Snow or ice and C = Culture. (from Ling 1998 and Seppelt pers. comm. 2008).

Cyanobacteria	
Aphanothece castagnei (Breb.) Rabenh.	A
Aphanocapsa elachista var. irregularis Boye-Pet.	A
Aphanocapsa muscicola (Menegh.) Wille	A
Aphanothece saxicola Nageli	A
Aphanothece sp.	A
Calothrix parietina Thur.	A
Chamaesiphon subglobosus ((Ros-Taf) Lemmerm.	A
Chroococcus dispersus (Keissl.) Lemmerm.	A
Chroococcus minutus (Kutz.) Nageli	A
Chroococcus turgidus (Kutz.) Nageli	A
Dactylococcopsis antarctica F E. Fritsch	A
Dactylococcopsis smithii R. et E.Chodat (= *Rhabdogloea smithii* (R. et E.Chodat)	A
Eucapsis sp.	T
Gloeocapsa dermochroa Nageli	A
G. kuetzingiana Nageli	A
Hammatoidea sp.	A
Homoeothrix sp.	A
Isocystis pallida Woron.	AT
Katagnymene accurata Geitler	AT
Lyngbya attenuata Fritsch	A
Lyngbya martensiana Menegh.	A
Merismopedia tenuissima Lemmerm.	AT
Myxosarcina concinna Printz	A
Nodularia harveyana var. *sphaerocarpa* (Born. et Flah.) Elenkin	A
Nostoc commune Vaucher	ATC
Nostoc sp.	T
Oscillatoria annae Van Gook	A
Oscillatoria fracta Carlson	A
Oscillatoria irrigua Kutz	A
Oscillatoria lemmermannii Wolosz.	A
Oscillatoria proteus Skuja	A
Oscillatoria sp. (Broady 1979a, *Oscillatoria* cf. *limosa* Agardh)	A
Oscillatoria sp. (BROADY 1979a, *Oscillatoria* sp. C)	T
Phormidium autumnale(Agardh) Gomont	T
Phormidium foveolarum Gomont	A
Phormidium frigidum F.E. Fritsch	A
Phormidium subproboscideum (W et G. S. West) Anagnost et Komarek	A
Phormidium sp.	A
Plectonema battersii Gomont	A
Plectonema nostocorum Bornet	A
Pseudanabaena mucicola (Hub.-Pest. et Naum.) Bour.	A
Schizothrix antarctica F E. Fritsch	A
Stigonema mesentericum Geitler f.	T
Stigonema minutum (AGARDH) Hassall	T
Stigonema sp.	T
Synechococcus aeruginosus Nageli	T
Synechococcus maior Schroeter	AT
Tolypothrix byssoidea (Berk.) Kirchner f	A
Tolypothrix distorta var. *penicillata* (Agardh)Lemmerm.(= Tolypothrix penicillata Thuret)	A

Chlorophyta	
Actinotaenium cucurbita (Breb.) Teiling	AC
Apodochloris irregularis Ling et Seppelt	AC
Asterococcus superbus (Cienk.) Scherff.	AC
Binuclearia tatrana Wittr.	AC
Binuclearia tectorum (KÜTZ.) Beger	AC
Chlamydomonas pseudopulsatilla Gerloff	S
Chlamydomonas sphagnicola (F.E. Fritsch) F.E. Fritsch et Takeda	TC
Chlamydomonas subcaudata Wille	A
Chlamydomonas sp. l	A
Chlamydomonas sp. 2	A
Chlorella vulgaris Beij.	AT
Chloromonas brevispina Hoham, Roemer et Mullet	S
Chloromonas polyptera (F.E. Fritsch) Hoham, Mullet et Roemer	SC
Chloromonas rubroleosa Ling et Seppelt	SC
Chloromonas sp. l	SC
Chloromonas sp. 2	A
Coenochloris sp.	T
Desmococcus olivaceus (Pers. ex Ach.) Laundon	ATC
Desmotetra sp. 1	SC
Desmotetra sp. 2	SC
Dictyosphaerium dichotomum Ling et Seppelt	T
Fernandinella alpina Chodat	AC
Geminella terricola Boye-Pet.	T
Gloeocystis polydermatica (Kutz.) Hindak	T
Gloeocystis vesiculosa Nageli	T
Gongrosira terricola Bristol	AC
Gonium sociale (Dujard.) Warm.	AC
Hormotila sp.	SC
Kentrosphaera bristolae G.M.Smith	A
Klebsormidium dissectum var. 1(Broady 1979a, *Chlorhormidium dissectum* var. A)	T
Klebsormidium subtilissimum (Rabenh.) Silva, Mattox et Blackwell	A
Klebsormidium sp. (BROADY 1981, *Klebsormidium* sp. A)	SC
Lobococcus sp.?	T
Lobosphaera tirolensis Reisigl	TC
Macrochloris multinucleate (Reisigl) Ettl et Gartner	ATC
Mesotaenium berggrenii (Wittr.) Lagerh. f.	S
Monoraphidium contortum (Thur.) Komark.-Legn.	A
Monoraphidium sp.	S
Myrmecia bisecta Reisigl	T
Palmella sp. 1	TC
Palmella sp. 2	A
Palmellopsis sp.	SC
Prasiococcus calcarius (Boye-Pet.) Vischer	ATSC
Prasiola calophylla (Carmich.) Menegh.	TC
Prasiola crispa (Lightf.) Menegh.	ATSC
Prasiola sp.?	A
Pseudochlorella subsphaerica Reisigl	T
Pseudococcomyxa simplex (Mainx) Fott	T
Pyramimonas gelidfcola McFadden, Moestrup et Wetherbee	A
Pyramimonas sp.	A
Raphidonema helvetica Kol	S
Raphidonema nivale Lagerh.	S
Raphidonema sempervirens Chodat	TC
Raphidonema tatrae Kol	S
Schizogonium murale Kutz.	ATC
Schizogonium sp.	AT
Staurastrum sp.	A
Stichococcus bacillaris Nageli	TSC
Stichococcus fragilis (A. Braun) Gay	A

Stichococcus minutus Grintzesco et Peterfi	S
Tetracystis sp. 1	TC
Tetracystis sp. 2	TC
Trebouxia sp.	TC
Trichosarcina mucosa (B Broady) Chappell et O'Kelly	TC
Trochiscia sp. (Broady 1979x,	A
Trochiscia sp. A)	
Ulothrix implexa (Kutz.) Kutz. A	
Ulothrix zonata (Weber et Mohr) Kutz	
Ulothrix sp. 1	A
Ulothrix sp. 2	S
Uronema sp.	S
Xanthophyta	
Botrydiopsis sp.	TC
Bumilleriopsis sp.	TC
Ellipsoidion sp.?	S
Fremya sp.	ATC
Gloeobotrys sp.	A
Heterococcus filiformis Pitschm.	TC
*Heterococcu*s sp.	TC
Heterothrix debilis Vischer	TC
Tribonema microchloron Ettl	A
Chrysophyta	
Chrysococcus sp.	S
Chroomonas lacustris Pascher et Ruttner	A
Dinophyta	
Gymnodinium sp.	A
Bacillariophyta	
**Achnanthes coarctata* var. *elliptica* Krasske	S
Amphora veneta Kutz.	A
**Cocconeis imperatrix* A. Schmidt	S
**Diploneis subcincta* (A. Schmidt) Cleve	S
**Eucampia balaustium* Castray	S
Fragilaria sp.	A
Fragilariopsis antarctica (Castray) Hust.	A
Hantzschia amphioxys (Ehrenb.) Grun.	A
Navicula atomus (Nag.) Grun.	A
Navicula murrayi W. et G. S. West	A
Navicula muticopsis Van Heurck	AT
Navicula sp.	A
Nitzschia palea (Kutz.) W. S M.	AT
Pinnularia borealis Ehrenb.	AT
Torpedoes laevissima W et G. S. West	A

*Believed to be marine diatoms from wind-borne sea spray.

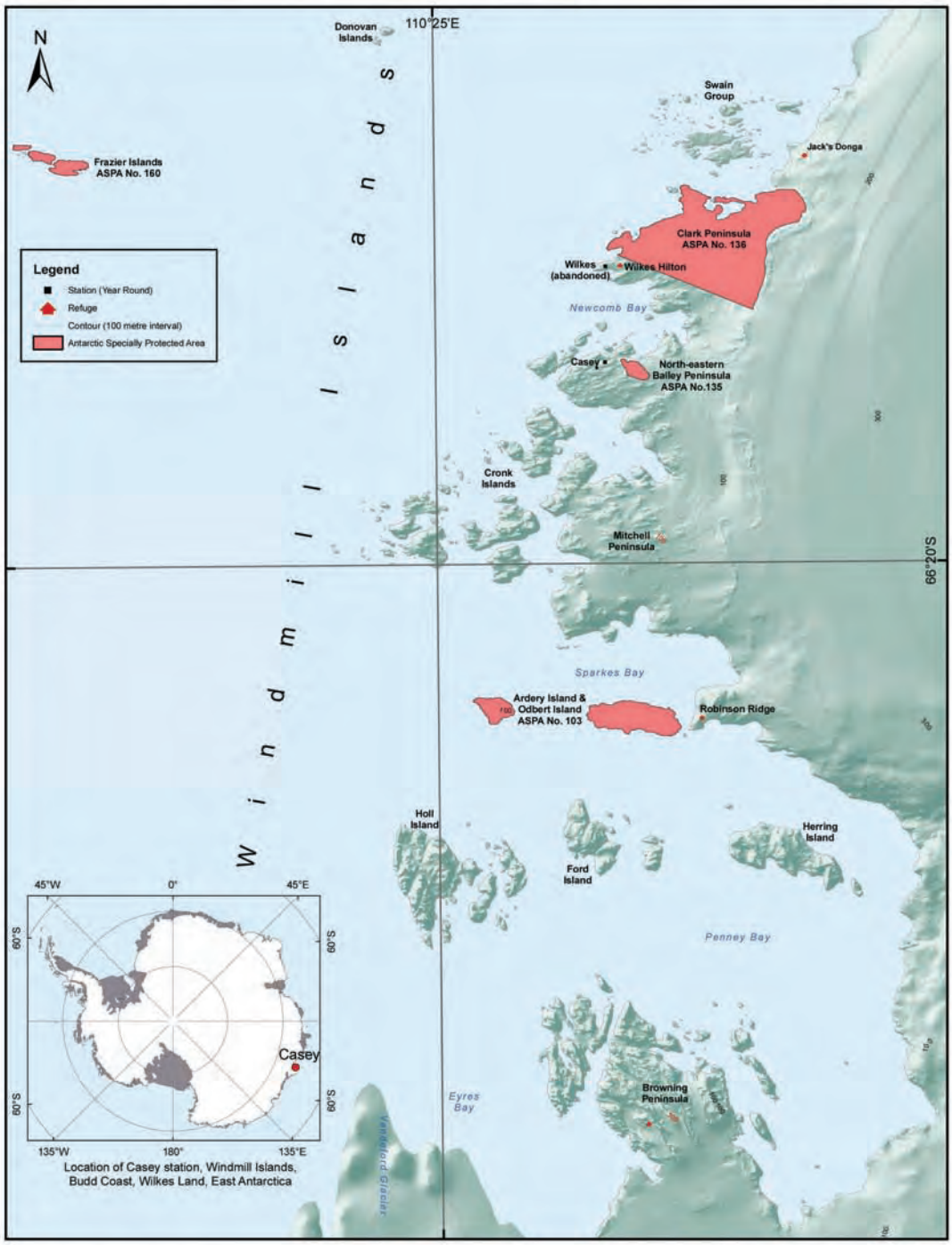
Appendix 5: Ciliates and testate amoebae active in the vicinity of Casey Station on Bailey Peninsula

(Modified from Petz and Foissner 1997)

Ciliates
Bryometopus sp
Bryophyllum cf. loxophylliforme
Colpoda cucullus (Mueller, 1773)
Colpoda inflata (Stokes, 1884)
Colpoda maupasi Enriques, 1908
Cyclidium muscicola Kahl, 1931
Cyrtolophosis elongata (Schewiakoff, 1892)
Euplotes sp.
Fuscheria terricola Berger and others, 1983
Gastronauta derouxi Blatterer and Foissner, 1992
Halteria grandinella (Mueller, 1773)
Holosticha sigmoidea Foissner, 1982
Leptopharynx costatus Mermod, 1914
Odontochlamys wisconsinensis (Kahl, 1931)
Oxytricha opisthomuscorum Foissner and others, 1991
Parafurgasonia sp.
Paraholosticha muscicola (Kahl, 1932)
Platyophrya vorax Kahl, 1926
Pseudocohnilembus sp.
Pseudoplatyophrya nana (Kahl, 1926)
Pseudoplatyophrya cf. saltans
Sathrophilus muscorum (Kahl, 1931)
Sterkiella histriomuscorum (Foissner and others, 1991)
Sterkiella thompsoni Foissner, 1996
Trithigmostoma sp.
Vorticella astyliformis Foissner, 1981
Vorticella infusionum Dujardin, 1 841
Testate amoebae
Assulina muscorum Greeff, 1888
Corythion dubium Taranek, 1881
Euglypha rotunda Wailes and Penard, 1911
Pseudodifflugia gracilis var. *terricola* Bonnet and Thomas, 1960
Schoenbornia viscicula Schoenborn, 1964
Trachelocorythion pulchellum (Penard, 1890)

Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division

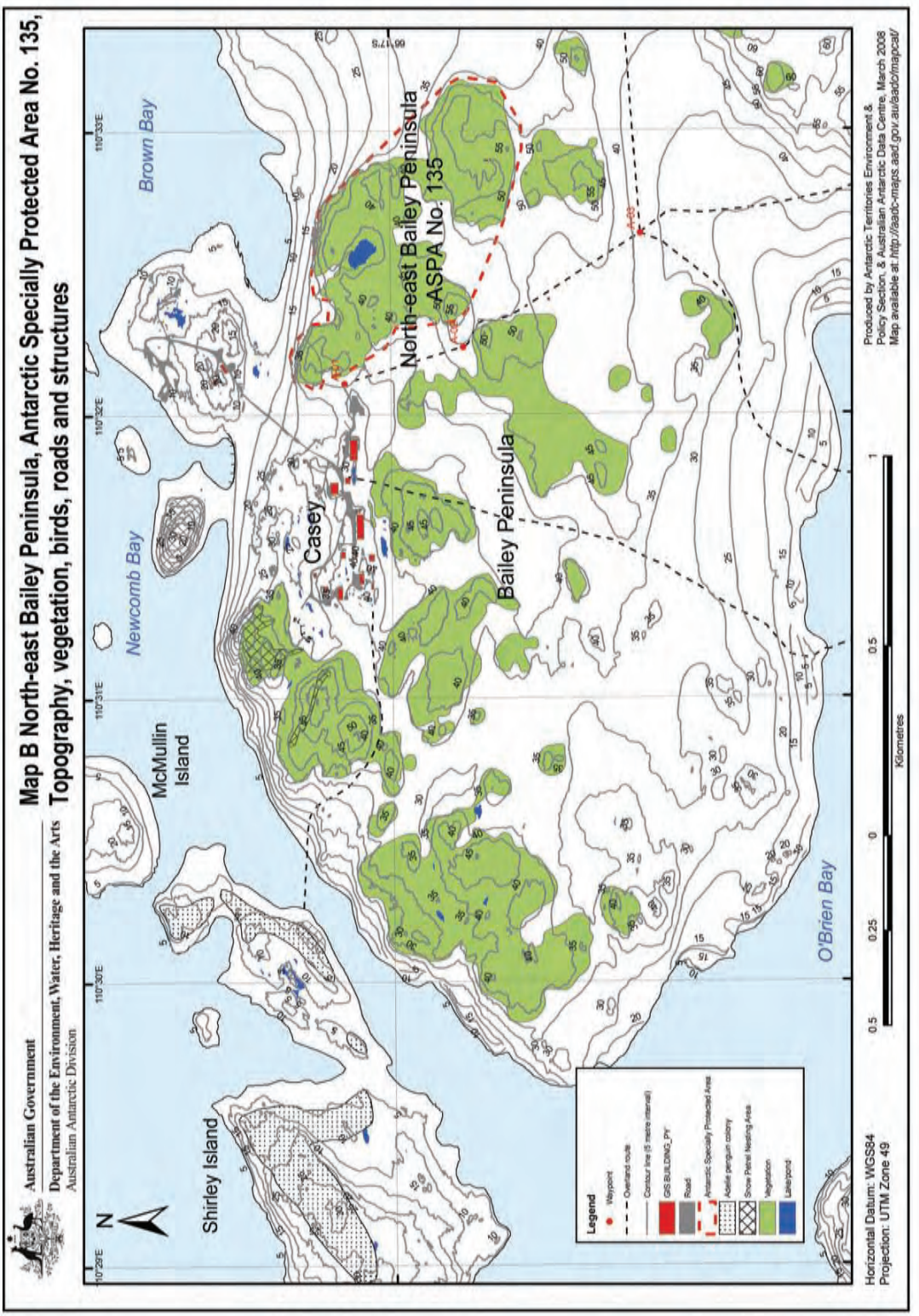
Map A: Windmill Islands, showing location of the North-east Bailey Peninsula ASPA No. 135 and protected areas within the region

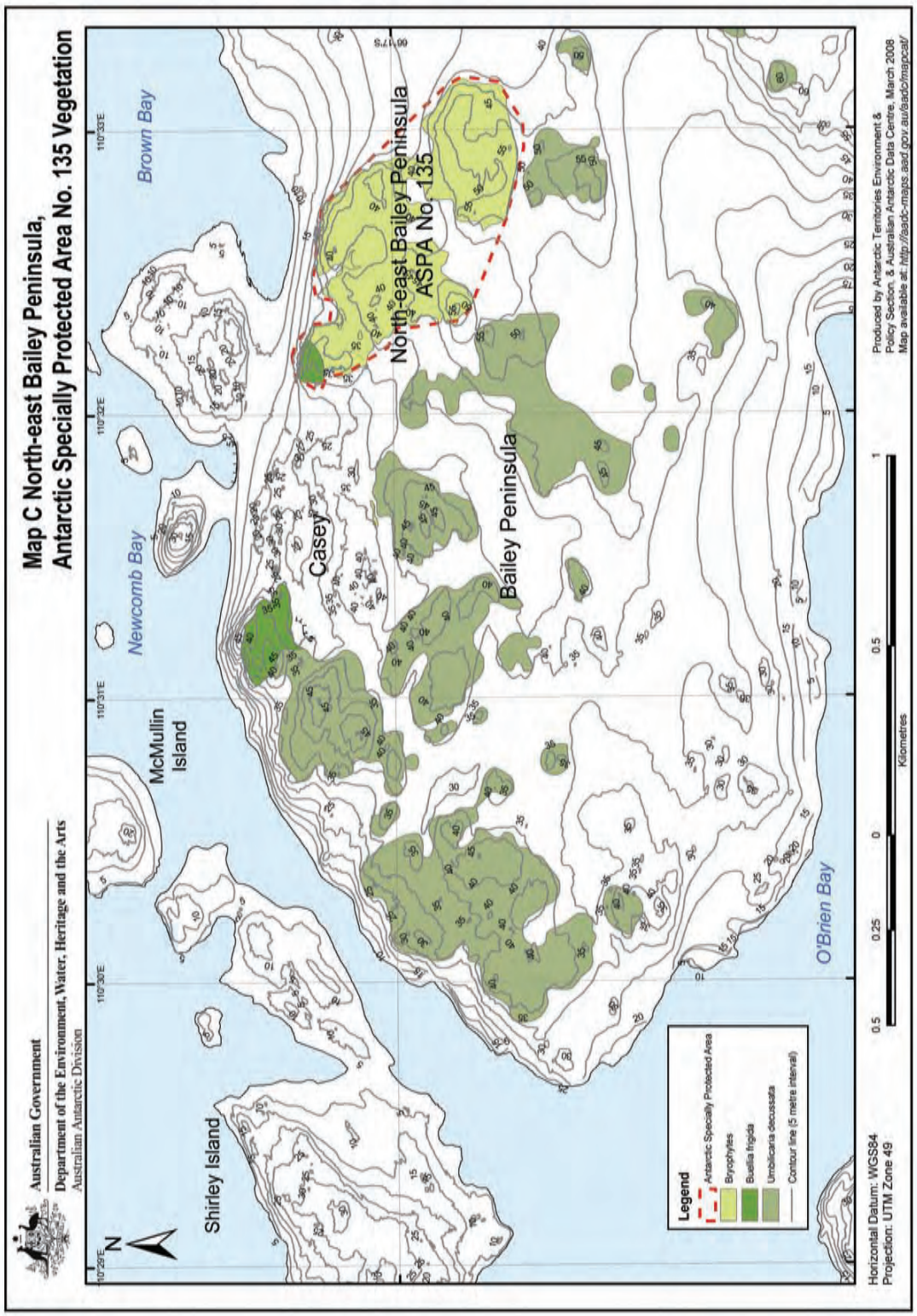


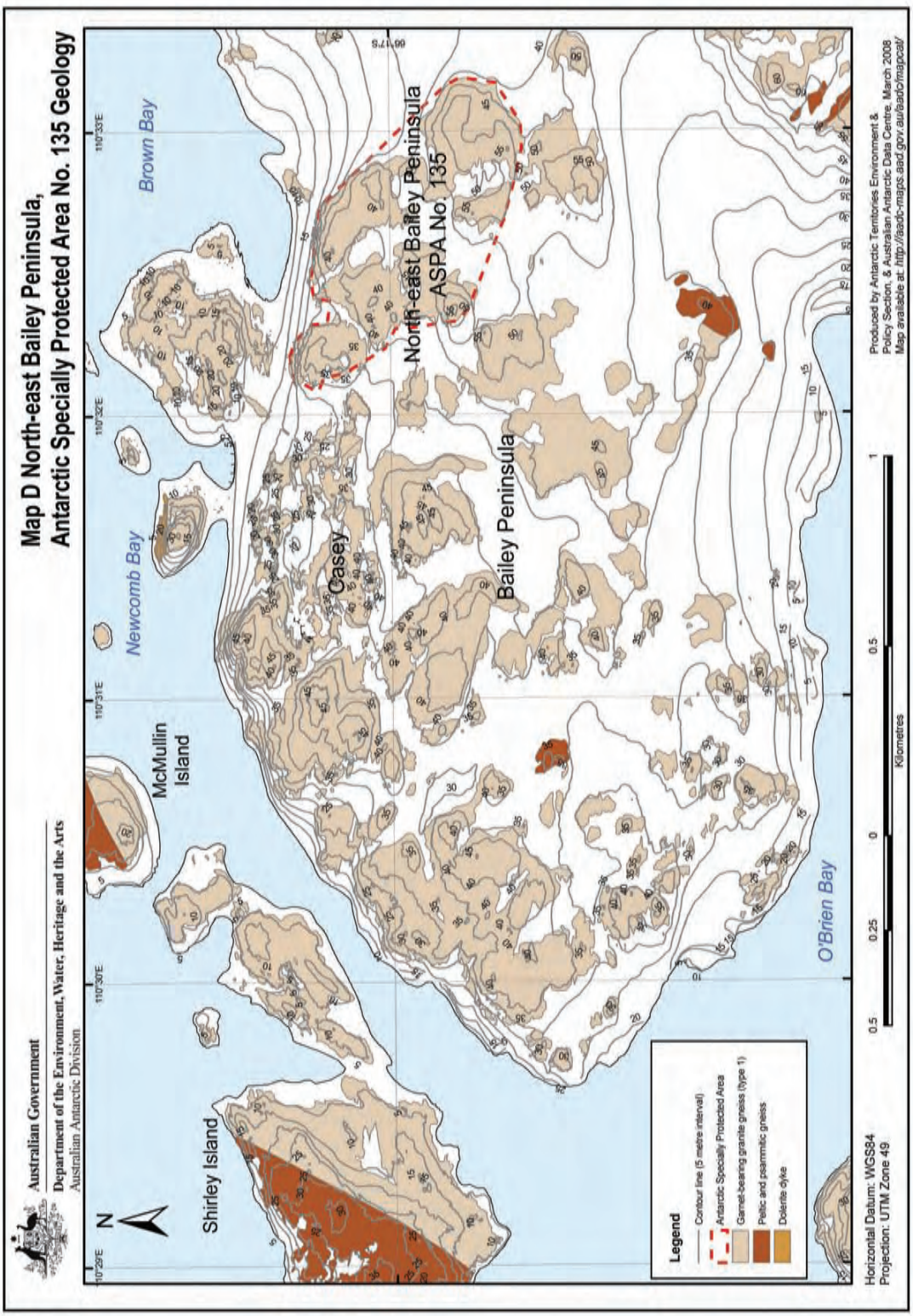
Horizontal Datum: WGS84
Projection: Lambert Conformal Conic

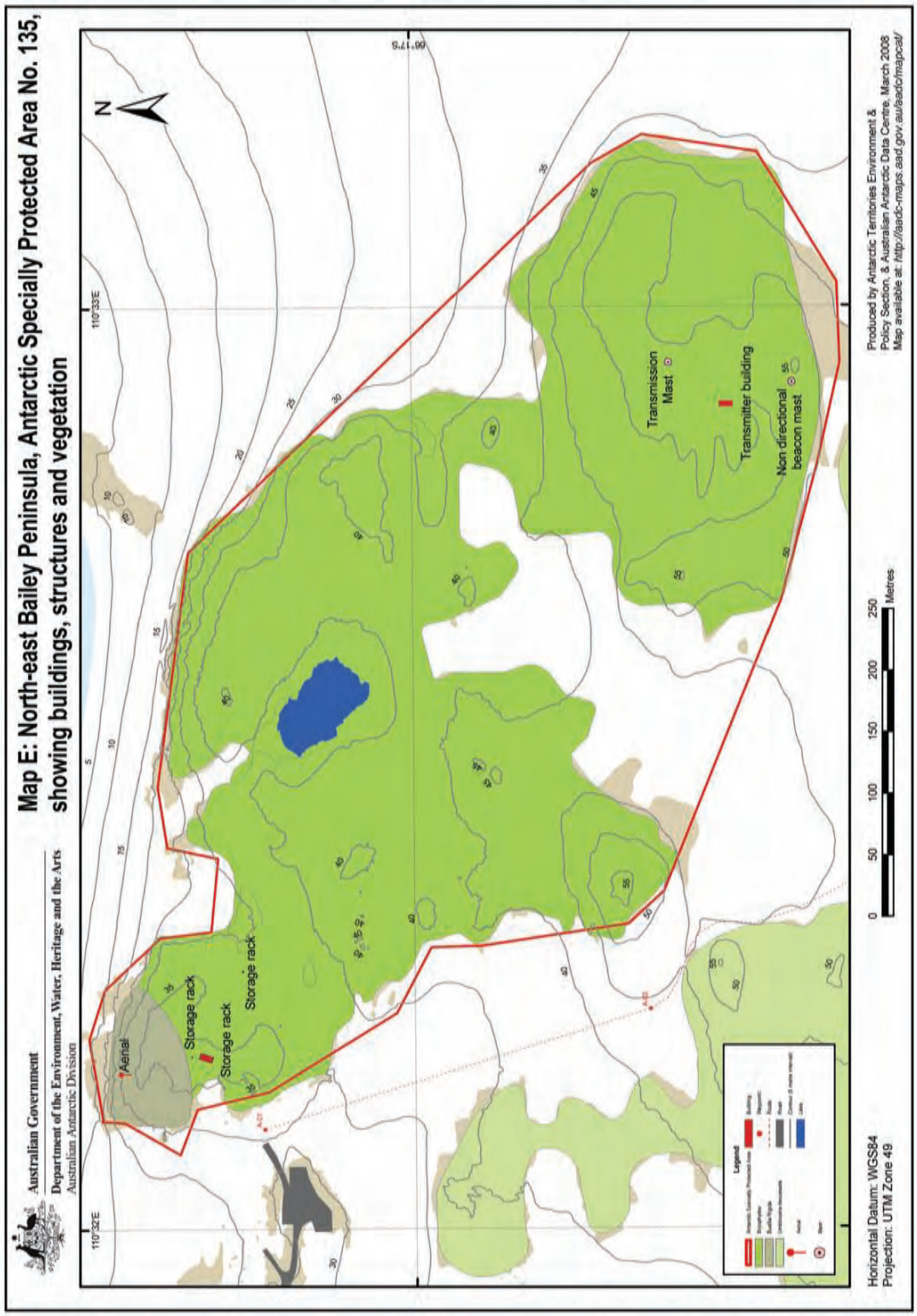
1 0.5 0 1 2 3 4 5
Kilometres

Produced by Antarctic Territories, Environment & Policy Section, & Australian Antarctic Data Centre. March 2008.
Map available at: http://aadc-maps.aad.gov.au/aadc/mapcat/


Map B North-east Bailey Peninsula, Antarctic Specially Protected Area No. 135,
Topography, vegetation, birds, roads and structures
Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Brown Bay
Newcomb Bay
McMullin Island
Shirley Island
Casey
North-east Bailey Peninsula
ASPA No. 135
Bailey Peninsula
O'Brien Bay
110°29'E
110°30'E
110°31'E
110°32'E
110°33'E
66°17'S
N
Legend
Waypoint
Overland route
Contour line (5 metre interval)
GIS BUILDING_PY
Road
Antarctic Specially Protected Area
Adelie penguin colony
Snow Petrel Nesting Area
Vegetation
Lakepond
0.5
0.25
0
0.5
1
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by Antarctic Territories Environment & Policy Section, & Australian Antarctic Data Centre, March 2008
Map available at http://aadc-maps.aad.gov.au/aadc/mapcat/


Map C North-east Bailey Peninsula,
Antarctic Specially Protected Area No. 135 Vegetation
Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Brown Bay
Newcomb Bay
McMullin Island
Shirley Island
Casey
North-east Bailey Peninsula
ASPA No. 135
Bailey Peninsula
O'Brien Bay
N
Legend
Antarctic Specially Protected Area
Bryophytes
Buellia frigida
Umbilicaria decussata
Contour line (5 metre interval)
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by Antarctic Territories Environment & Policy Section, & Australian Antarctic Data Centre, March 2008.
Map available at: http://aadc-maps.aad.gov.au/aadc/mapcat/


Map D North-east Bailey Peninsula,
Antarctic Specially Protected Area No. 135 Geology
Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Brown Bay
Newcomb Bay
McMullin Island
Shirley Island
Casey
North-east Bailey Peninsula ASPA No. 135
Bailey Peninsula
O'Brien Bay
N
Legend
Contour line (5 metre interval)
Antarctic Specially Protected Area
Garnet-bearing granite gneiss (type 1)
Pelitic and psammitic gneiss
Dolerite dyke
Kilometres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by Antarctic Territories Environment & Policy Section, & Australian Antarctic Data Centre, March 2008
Map available at: http://aadc-maps.aad.gov.au/aadc/mapcat/


Map E: North-east Bailey Peninsula, Antarctic Specially Protected Area No. 135, showing buildings, structures and vegetation
Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
N
Aerial
Storage rack
Storage rack
Storage rack
Transmission Mast
Transmitter building
Non directional beacon mast
Legend
0 50 100 150 200 250 Metres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by Antarctic Territories Environment & Policy Section, & Australian Antarctic Data Centre, March 2008
Map available at: http://aadc-maps.aad.gov.au/aadc/mapcat/

Measure 9 (2008)

Antarctic Specially Protected Area No 137 (North-west White Island, McMurdo Sound): 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 White Island, McMurdo Sound, as Site of Special Scientific Interest ("SSSI") No 18 and annexed a management plan for the site;
- Recommendation XVI-7 (1991), which extended the expiry date of SSSI 18 from 31 December 1991 to December 2001;
- Measure 3 (2001), which extended the expiry date of SSSI 18 December 2001 until 31 December 2005;
- Decision 1 (2002), which renamed and renumbered SSSI 18 as Antarctic Specially Protected Area No 137;
- Measure 1 (2002), which adopted a revised Management Plan for ASPA 137;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 137;

Desiring to replace the existing Management Plan for ASPA 137 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 137: North-west White Island, McMurdo Sound, which is annexed to this Measure, be approved; and

2) all prior management plans for ASPA 137, namely those annexed to:

   - Recommendation XIII-8 (1985), and

   - Measure 1 (2002);

   shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 137

NORTH-WEST WHITE ISLAND, McMURDO SOUND

1. Description of values to be protected

An area of 150km^2 of coastal shelf ice on the north-west side of White Island was originally designated by Recommendation XIII-8 (1985, SSSI No 18) after a proposal by the United States of America on the grounds that this locality contains an unusual breeding population of Weddell seals (*Leptonychotes weddellii*) which is the most southerly known, and which has been physically isolated from other populations by advance of the McMurdo Ice Shelf and Ross Ice Shelf (Map 1). The original boundaries were adjusted in 2002 (Measure 1) in light of new data recording the spatial distribution of the seals on the ice shelves. In the south, the boundary of the Area was shifted north and east to exclude the region north of White Strait where no observations of the seals have been recorded. In the north, the Area was extended to encompass an additional part of the Ross Ice Shelf in order to ensure inclusion of more of the region within which the seals may be found. In 2008, the Management Plan was updated to include recent census data on the seal colony, which led to revision of the boundary to include part of the Ross Ice Shelf in the north-east where seals have been observed. The Area is now approximately 142km^2. Additional guidance on aircraft overflight and access has also been included.

The Weddell seal colony appears unable to relocate to another area because of its distance from the open ocean of McMurdo Sound, and as such it is highly vulnerable to any human impacts that might occur in the vicinity. The colony is not thought to have been present in the early 1900s, as there is no mention of seals by naturalists who visited White Island many times during Scott's 1902, 1903 and 1910 expeditions. An ice breakout occurred in the region between 1947 and 1956, and the first two seals were observed near the north-eastern end of the island in 1958 (R. Garrott, *pers. comm.* 2007). Year-round studies have detected no evidence of immigration or emigration of seals from the population, which appears to have grown to around 25 to 30 animals from a population of around 11 in the 1960s. The seals do not have the breathing capacity needed to dive the 20km required to reach the open ocean, and there is only one record of a seal from the colony making the journey over the ice shelf surface.

The seals gain access to the sea below the ice shelf through pressure cracks, which are formed by tidal motion and movement of the McMurdo and Ross ice shelves. Only one crack remains open year-round. The Weddell seals at White Island are on average greater in size and weight than their McMurdo Sound counterparts and have been shown to make more shallow dives. NW White Island is one of very few sites where Weddell seals are known to feed under shelf ice. The population is considered to have exceptional scientific value because of its period of physical isolation from interaction with other seals, thought to be around 60 years, and investigations are being undertaken of the extent to which the group may be considered a genetically distinct population. Genetic techniques have been used to construct a complete pedigree for the NW White Island population, which supports the conclusion that the year in which the colony was founded is likely to have been around 60 years ago, which agrees with historical sightings. NW White Island is relatively accessible by shelf ice from the nearby United States and New Zealand research stations at Hut Point, Ross Island. In addition, a flagged access route between these stations and Black Island traverses within approximately 2km of the Area (Map 1).

The Area requires long-term special protection because of the exceptional importance of the Weddell seal colony, outstanding scientific values and opportunities for research, and the potential vulnerability of the Area to disturbance from scientific and logistic activities in the region.

2. Aims and objectives

Management at NW White Island aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem, in particular on the Weddell seals, while ensuring protection from excessive disturbance or other possible scientific impacts;
- allow other scientific research provided it will not jeopardize the values of the Area;
- minimize the possibility of introduction of alien animals and microbes into the Area;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

- 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 appropriate places, in particular at McMurdo Station, Scott Base and at the Black Island facilities.
- 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 for the purpose of ensuring these steps are carried out.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map 1: NW White Island, ASPA No 137, topographic map.

  Map specifications:

  Projection: Lambert Conformal Conic; Standard parallels: 1st 78° 00' 00" S; 2nd 78° 12' 00"S; Central Meridian: 167° 05' 00" E; Latitude of Origin: 77° 30' 00" S; Spheroid: WGS84.

  Inset 1: Ross Sea region.

  Inset 2: Ross Island region, key features and nearby stations.

Note: Map 1 is derived from the Antarctic Digital Database (Version 5.0, SCAR, 2007). This framework has been identified as positionally inaccurate in the Ross Island / White Island

region. Accurate ground control available for Hut Point Peninsula was used to adjust the geographical position of the framework by approximately +240m (x direction) and +100m (y direction). This shift is considered to improve the accuracy of Map 1, but the result is only an approximation. Global Positioning Systems (GPS, in WGS-84) observations of seals shown on Map 1 are considered accurate to approximately 200m of their true positions.

6. Description of the Area

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

White Island, part of the McMurdo volcanic complex, is situated approximately 20km SE of the edge of the McMurdo Ice Shelf and 25km SE of Hut Point, the location of McMurdo Station (United States) and Scott Base (New Zealand) on Ross Island (Inset 2, Map 1). The roughly triangular island is approximately 30km long and 15km wide at its maximum, and rises to a maximum elevation of 762m in several locations (Map 1). The northern and western shores of White Island descend steeply, with water depths of 600m occurring within 5km of the island. The island is predominantly ice-covered with most of the rock outcrops being in the north, and is completely surrounded by permanent shelf ice, between 10m and 100m in thickness, of the McMurdo Ice Shelf and Ross Ice Shelf. Black Island is situated 2.5km west of White Island, separated by the shelf ice of White Strait. The GPS entry and exit points for the access route to Black Island from McMurdo through White Strait are 78° 12' 00"S, 166° 50' 00"E and 78° 14' 17"S, 166° 45' 30" E, respectively.

The westward movement of the McMurdo Ice Shelf is greatest at the northern end of White Island and movement of ice away from the NW coast ensures open water in cracks in the shelf at this locality is present year-round. The Weddell seal population uses the cracks for access to seawater and feeding grounds under the shelf ice, and inhabits and breeds in the region within approximately 5km of their positions. The cracks occur parallel to and within a few hundred meters of the coast of White Island, and intermittently extend along the coast from the northern extremity of the island up to 15km to the south.

The Area includes 142km^2 of the shelf ice and open-water cracks of both the Ross Ice Shelf and McMurdo Ice Shelf up to 5km offshore north-east, north and west from the White Island coast. The north-eastern boundary extends from the north-eastern coast of Cape Spencer-Smith (167° 32' 42" E, 78° 00' 43" S) 5km due east to 167° 46' 37" E, 78° 00' 43" S. The boundary then extends north-west, and follows a line parallel to and 5km from the coast, around Cape Spencer Smith and then heading south-west to 167° 00' 00" E, 78° 05' 00" S. The boundary then extends due south for 7.8km to 167° 00' 00" E, 78° 09' 12" S, and thence 1.5km east to the southern-most significant outcrop of rock on the western coast of White Island (167° 05' 00" E, 78° 09' 12" S). The boundary then extends northwards, following the coastline around Cape Spencer Smith to the north-eastern limit of the Area. The White Island coast is distinguished by a change in surface slope where the transition between the floating ice-shelf and land occurs: the transition is in some places gradual and indistinct, and the exact position of the coast is not precisely known. For this reason the coastal (generally east) boundary of the Area is considered to follow the line of the coast as evidenced by a surface elevation rise towards the land of two meters above the average elevation of the adjacent McMurdo Ice Shelf.

The Weddell seal population was estimated at around 25 to 30 animals in 1991. A 1981 study estimated "about 30" seals, while 1991 studies estimated 26 seals greater than one year of age. Since 1991, 17 different females have produced pups at White Island. Between 2003 and 2007, 11 females have been sighted at White Island, but only six of these individuals have produced pups. Between two and four live pups were recorded in 1963-1968, 1981, and 1991. Annual censuses

since 1991 recorded between four and ten pups from 1991 to 2000, but lower numbers (between two and four pups each year) from 2000 to 2007. Pup mortality is high, possibly due to inbreeding, and pup production is low in comparison to the population in Erebus Bay.

The seals are physically isolated by the barrier of the shelf ice, and are unable to swim the 20km distance under the ice to reach the seasonally open waters of McMurdo Sound: Weddell seals have been estimated to be capable of swimming a distance of around 4.6km (2.5 nautical miles) on a single breath. The apparent isolation of the colony is substantiated by tag observation data on Weddell seals in McMurdo Sound, where in more than 100,000 tag observations over a 20-year period no tagged seals from White Island have been observed in McMurdo Sound. These data suggest that the White Island seals do not generally traverse the 20km distance to the open ocean over the surface of the shelf ice. However, there is at least one record of a yearling from the White Island colony found to have made the journey across to the Williams airfield close to McMurdo station (G. Kooyman, *pers. comm.* 2007).

Adult female seals begin to appear on the shelf ice in early November, one month later than other pupping areas in the southern Ross Sea. They pup at the NW extremity of the island during which time sub-adults and non-breeding adults can be found up to 15km to the SW near open cracks on the west side of the island. Adult male seals are not observed on the sea-ice during this time, remaining in the water to establish and defend territories. The females remain on the ice until pups are weaned at about 6-8 weeks of age. After December, adults and sub-adults mix in the pupping area and along the cracks formed at the NW corner of the island.

It is thought that the harsh surface conditions confine the seals to the water during the winter months. Winter surface temperatures reach as low as -60°C and it is thought that the seals expend considerable time maintaining an open air hole in the cracks. This is thought to be a key factor limiting the population size, with pups and sub-adults possibly excluded from use of the limited breathing holes by more dominant and aggressive adults. Some pups may be unable to maintain their own breathing holes and may become trapped on the ice surface if dominant seals do not allow them entry into the water.

Studies have suggested that the Weddell seals at White Island have a similar diet to their counterparts at McMurdo Sound. Studies of fish otoliths recovered from Weddell seal fecal samples have revealed a diet comprised primarily of the nototheniid fish *Pleuragramma antarcticum*, also with fish from the genus *Trematomus*. Invertebrates are thought to comprise the remainder of the diet along with a cephalopod belonging to the family Mastogoteuthidae. Consumption of the latter was found to be considerably greater amongst White Island seals than those at McMurdo Sound.

Other aspects of the physiology and behaviour of seals at White Island appear to differ from nearby populations at McMurdo Sound and at Terra Nova Bay: the seals at White Island appear to be significantly fatter, with recorded weights of up to 686 kg (1500 lb.) at White Island compared to no more than 500 kg at McMurdo Sound or Terra Nova Bay. A 1991 study revealed that on average adult female seals are considerably longer than those in McMurdo Sound, and young seals at White Island have been observed to exhibit faster growth rates than their McMurdo counterparts. Average diving depths at White Island are shallower than at McMurdo Sound.

6(ii) Restricted and managed zones within the Area

None.

6(iii) Structures within and near the Area

There are no structures within or near the Area.

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

The nearest protected areas to NW White Island are on Ross Island: Arrival Heights (ASPA No 122) adjacent to McMurdo Station and Discovery Hut (ASPA No 158) on the Hut Point Peninsula are the closest at 20km to the north; Cape Evans (ASPA No 155) and Cape Royds (ASPA No 121) are 47km and 55km north respectively; and Tramway Ridge (ASPA No 130) near the summit of Mt. Erebus is 60km to the north.

7. Permit conditions

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

- it is issued only for scientific study of the Weddell seal ecosystem, or for scientific reasons or management purposes consistent with plan objectives such as inspection 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 is permitted on foot, by vehicle, or by aircraft.
- Aircraft landings and overflight below 750m (~2500 ft) within the Area are prohibited without a permit. Aircraft approach and departure shall avoid overflight of the White Island coastline and tide-cracks within the Area, where the seals are most commonly found. Aircraft shall not land closer than 300m from seals where they can be seen from the air, and shall land at least 300m (~980 ft) away from the coastline of White Island and the tide-crack when seals are not visible.
- Use of helicopter smoke grenades is prohibited unless absolutely necessary for safety, and all grenades should be retrieved.
- Vehicles are strongly discouraged from approaching closer than 50m from seals, and closer approaches should be on foot. Vehicle and pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities.

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

Activities that may be conducted within the Area include:

- scientific research that will not jeopardize the ecosystem of the Area;
- essential management activities, including monitoring.

7(iii) Installation, modification or removal of structures

- No structures are to be erected within the Area except as specified in a permit;
- All scientific equipment installed in the Area must be 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;

- 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

Permanent field camps are prohibited within the Area. Temporary campsites are permitted within the Area. There are no specific restrictions to a precise locality for temporary camp sites within the Area, although sites selected shall be more than 200m from the ice-shelf cracks inhabited by the seals, unless authorized by permit when deemed necessary to the accomplishment of specific research goals.

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

- No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions. Of particular concern are microbial and viral introductions from other seal populations. To minimize the risk of introductions, visitors shall ensure that any measuring devices, sampling equipment, markers or personal equipment to be used in the area are clean before entering 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 to the maximum extent practicable at or before the conclusion of the activity for which the permit was granted;
- Fuel is not to be stored in the Area, unless required for essential purposes connected with the activity for which the permit has been granted;
- All materials introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimized.

7(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 by the appropriate national authority specifically for this 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 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

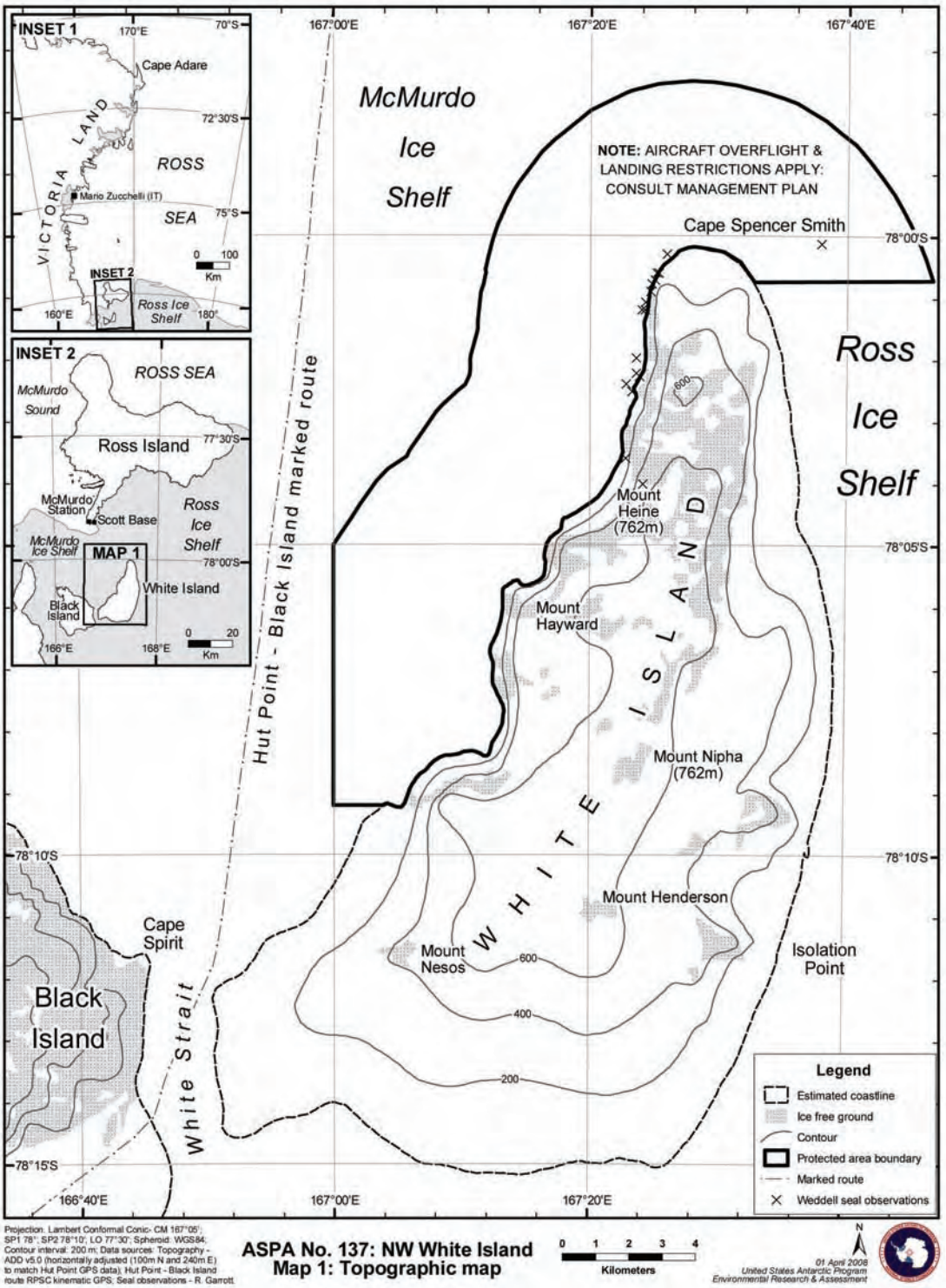
All wastes shall be removed from the Area.

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

- Any specific sites of long-term monitoring shall be appropriately marked;
- The use of explosives is prohibited within the Area.

7(x) Requirements for reports

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


INSET 1
170°E
70°S
Cape Adare
72°30'S
VICTORIA LAND
ROSS SEA
Mario Zucchelli (IT)
75°S
0 100 Km
INSET 2
160°E
Ross Ice Shelf
180°
INSET 2
ROSS SEA
McMurdo Sound
Ross Island
77°30'S
McMurdo Station
Scott Base
Ross Ice Shelf
McMurdo Ice Shelf
MAP 1
78°00'S
White Island
Black Island
166°E
168°E
0 20 Km
McMurdo Ice Shelf
167°00'E
167°20'E
167°40'E
NOTE: AIRCRAFT OVERFLIGHT & LANDING RESTRICTIONS APPLY: CONSULT MANAGEMENT PLAN
Cape Spencer Smith
78°00'S
Ross Ice Shelf
Hut Point - Black Island marked route
600
Mount Heine (762m)
78°05'S
Mount Hayward
WHITE ISLAND
Mount Nipha (762m)
78°10'S
Mount Henderson
Cape Spirit
Mount Nesos
600
400
200
Isolation Point
Black Island
White Strait
78°15'S
166°40'E
167°00'E
167°20'E
Legend
Estimated coastline
Ice free ground
Contour
Protected area boundary
Marked route
Weddell seal observations
Projection: Lambert Conformal Conic- CM 167°05'; SP1 78°, SP2 78°10'; LO 77°30'; Spheroid: WGS84; Contour interval: 200 m; Data sources: Topography - ADD v5.0 (horizontally adjusted (100m N and 240m E) to match Hut Point GPS data); Hut Point - Black Island route RPSC kinematic GPS; Seal observations - R. Garrott
ASPA No. 137: NW White Island
Map 1: Topographic map
0 1 2 3 4
Kilometers
N
01 April 2008
United States Antarctic Program
Environmental Research & Assessment

Measure 10 (2008)

Antarctic Specially Protected Area No 138 (Linnaeus Terrace, Asgard Range, Victoria 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 Linnaeus Terrace, Asgard Range, Victoria Land, as Site of Special Scientific Interest ("SSSI") No 19 and annexed a management plan for the site;
- Resolution 7 (1995), which extended the expiry date of SSSI 19 from 31 December 1995 to 31 December 2000;
- Measure 1 (1996), which adopted a revised Management Plan for SSSI 19;
- Decision 1 (2002), which renamed and renumbered SSSI 19 as Antarctic Specially Protected Area No 138;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 138;

Desiring to replace the existing Management Plan for ASPA 138 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 138: Linneaus Terrace, Asgard Range, Victoria Land, which is annexed to this Measure, be approved;

2) the Management Plan for ASPA 138 annexed to Recommendation XIII-8 (1985) shall cease to be effective; and

3) Measure 1 (1996), which is not yet effective, be withdrawn.

Management Plan for Antarctic Specially Protected Area No 138

LINNAEUS TERRACE, ASGARD RANGE, VICTORIA LAND

1. Description of values to be protected

Linnaeus Terrace was originally designated in Recommendation XIII-8 (1985, SSSI No 19) after a proposal by the United States of America on the grounds that the Area is one of the richest known localities for the cryptoendolithic communities that colonize the Beacon Sandstone. Exposed surfaces of the Beacon Sandstone are the habitat of cryptoendolithic microorganisms, which may colonize a zone of up to 10 millimeters deep below the surface of the rocks. The sandstones exhibit a range of biological and physical weathering forms, as well as trace fossils, and many of the formations are fragile and vulnerable to disturbance and destruction by trampling and sampling. Cryptoendolithic communities are known to develop over time periods in the order of tens of thousands of years, and damaged rock surfaces would be slow to recolonize. The excellent examples of these communities found at the site are the subject of the original detailed Antarctic cryptoendolithic descriptions. As such, Linnaeus Terrace is considered a type locality with outstanding scientific values related to this ecosystem. These values, as well as the vulnerability of the site to disturbance and destruction, require that it receives long-term special protection. The Management Plan has been updated to include additional provisions to reduce the risk of alien plants, animals or microbes from other Antarctic sites, or from regions outside Antarctica.

2. Aims and objectives

Management at Linnaeus Terrace aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem, in particular on the cryptoendolithic communities, while ensuring protection from excessive sampling, damage to fragile rock formations, or other possible scientific impacts;
- allow other scientific research provided it will not jeopardize the values of the Area;
- minimize the possibility of introduction of alien plants, animals and microbes into the Area;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

- A copy of this Management Plan shall be kept available in appropriate places, in particular at McMurdo Station and Scott Base;
- Durable wind direction indicators should be erected close to the designated helicopter landing site whenever it is anticipated there will be a number of landings at the Area in a given season. These should be replaced as needed and removed when no longer required;
- 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 designated helicopter landing site;

- Markers 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 (preferably no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate;
- National Antarctic Programmes operating in the region shall consult together for the purpose of ensuring these steps are carried out.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map 1: ASPA No 138 Linnaeus Terrace, Wright and Taylor Valleys.

  Projection: Lambert conformal conic; Standard parallels: 1st 77° 30' S; 2nd 77° 40' S; Central Meridian: 161° 53' E; Latitude of Origin: 78° 00' S; Spheroid: WGS84; Datum: 'Camp Area' Local; Contour interval 250m.
- Map 2: ASPA No 138 Linnaeus Terrace, topography and boundary. Projection: Lambert conformal conic; Standard parallels: 1st 77° 35' S; 2nd 77° 36' S; Central Meridian: 161° 05' E; Latitude of Origin: 78° 00' S; Spheroid and horizontal datum: WGS84; Contour interval 5m. Map derived from an orthophotograph with an estimated positional accuracy of 0.5m.
- Figure 1: Photograph illustrating some of the fragile rock formations and trace fossils found on Linnaeus Terrace.

6. Description of the Area

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

Linnaeus Terrace (161° 05' 00" E, 77° 35' 50" S) is a bench of weathered Beacon Sandstone approximately 1.5km in length and 1km in width at an elevation of about 1600m (Map 1). It is located at the western end of the Asgard Range, 1.5km north of Oliver Peak (161° 02' 30"E, 77° 36' 40" S, 2410 m). The Area overlooks the South Fork of the Wright Valley, is about 4km from Don Juan Pond and 10km from the terminus of the Wright Upper Glacier (Map 1).

The lower (northern) boundary of the Area is characterized by the presence of a predominantly sandstone outcrop of approximately 3m in height which extends for much of the length of the terrace (Map 2). The lower boundary of the Area is defined as the upper edge of this outcrop, and as straight lines adjoining the visible edges where the outcrop is covered by surface talus. The upper (south-western) boundary of the Area is characterized by a line of sandstone outcrop of about 2-5m in height, occurring between the elevations of 1660 - 1700m about 70m above the general elevation of the terrace. The upper boundary of the Area is defined as the uppermost edge of this outcrop, and shall be considered a straight line between the visible edges where the outcrop is covered by surface talus. The western end of the Area is defined as where the terrace narrows and merges with a dolerite talus slope on the flank of the NW ridge of Oliver Peak. The boundary at the west dips steeply from where the upper outcrop disappears, following the border of the dolerite talus with the terrace sandstone down to the westernmost corner. The east boundary is defined as the 1615m

contour, which follows closely the edge of an outcrop which extends much of the width of the terrace (Map 2). At the southernmost corner of the Area the terrace merges with the slopes into the valley to the east: from this point the boundary extends upward to the 1700m contour, from where it follows the line of outcrop defining the south-western boundary.

Winter air temperature at Linnaeus Terrace ranges between -20°C and -45°C, while in January the daily mean is approximately -5°C. Cryptoendolithic microorganisms typically colonize porous Beacon sandstones with a 0.2 - 0.5 mm grain size, with an apparent preference for rocks stained tan or brown by Fe3+ -containing oxyhydroxides. A silicified crust of about 1 mm thickness on many of the rocks probably facilitates colonization by stabilizing the surface and reducing wind erosion. Three of the five described cryptoendolithic microbial communities have been found on Linnaeus Terrace: the Lichen Dominated, Red-Gloeocapsa and Chroococcidiopsis Communities. Linnaeus Terrace is the type locality of the endemic green algal genus *Hemichloris* and of the endemic Xanthophycean algal species *Heterococcus endolithicus*. The Area is unusual in that so many different living and fossil endolithic communities are present within a small area. The main physical and biological features of these communities and their habitat are described in Friedmann, E.I. (ed) 1993 *Antarctic Microbiology*, Wiley-Liss, New York.

Fragile weathered rock formations, such as trace fossils in eroded sandstone and brittle overhanging low rock ledges (ranging from approximately 10 cm up to 1m in height), are present throughout the Area.

A small area (Map 2) has been contaminated by release of the C(14) radioactive isotope. While the contamination poses no significant human or environmental threat, any samples gathered within this area are considered unsuitable for scientific work using C(14) techniques.

6(ii) Restricted zones within the Area

None.

6(iii) Structures within the Area

A number of rocks within the Area have small instruments installed into them for scientific purposes and should not be disturbed.

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

Linnaeus Terrace lies within Antarctic Specially Managed Area (ASMA) No 2, McMurdo Dry Valleys. Within the ASMA, the nearest Special Feature is Don Juan Pond in the Upper Wright Valley. The nearest protected areas to Linnaeus Terrace are Barwick and Balham Valleys (ASPA No 123), 35km to the north, and Canada Glacier (ASPA No 131), 50km to the east (Map 1).

7. Permit conditions

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

- it is issued only for scientific study of the cryptoendolithic ecosystem, or for a compelling scientific or management purpose that cannot be served elsewhere;
- the actions permitted will not jeopardize the natural 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 is 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 is permitted by foot or by helicopter. No special restrictions apply to the routes used to move to and from the Area;
- Helicopters shall land only at the designated site at the west end of the terrace (161° 04' 29" E, 77° 35' 50" S, elevation 1610m: Map 2), except when specifically authorized by Permit otherwise for a compelling scientific or management purpose. Use of helicopter smoke grenades is prohibited unless absolutely necessary for safety, and all grenades should be retrieved;
- When transporting permitted visitors, pilots, air crew, or passengers en route elsewhere on helicopters are prohibited from moving on foot beyond the immediate vicinity of the designated landing and camping sites unless specifically authorized by a Permit;
- Land vehicles are prohibited within the Area;
- Movement within the Area should avoid damage to fragile rock formations: care should be exercised to avoid walking on trace fossils (Figure 1) and brittle overhanging low rock ledges which are easily broken;
- Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities.

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

- Scientific research which will not jeopardize the ecosystem of the Area;
- Essential management activities, including monitoring.

7(iii) Installation, modification or removal of structures

- No structures are to be erected within the Area except as specified in a permit;
- Permanent structures are prohibited;
- All scientific equipment 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;
- 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 is permitted within the Area only at the designated site in the immediate vicinity of the helicopter landing site (Map 2).

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

- To avoid compromising the microbial ecosystem for which this site is protected, no living animals, plant material 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 of the Area, visitors shall take special precautions against the introduction of animals, plant material or microorganisms. Of particular concern are microbial and vegetation introductions from soils at other Antarctic sites, including stations, or from regions outside Antarctica. To minimize the risk of introductions, visitors should thoroughly clean footwear and any equipment to be used in the Area – particularly sampling equipment and markers – before entering 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.
- Food, fuel, 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 with native flora or fauna is prohibited, except in accordance with a separate permit issued under Article 3 of Annex II by an appropriate national authority.

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 management needs;
- Material of human origin, not brought into the Area by the permit holder, but which is likely to compromise the values of the Area may be removed from 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 all human wastes, shall be removed from the Area.

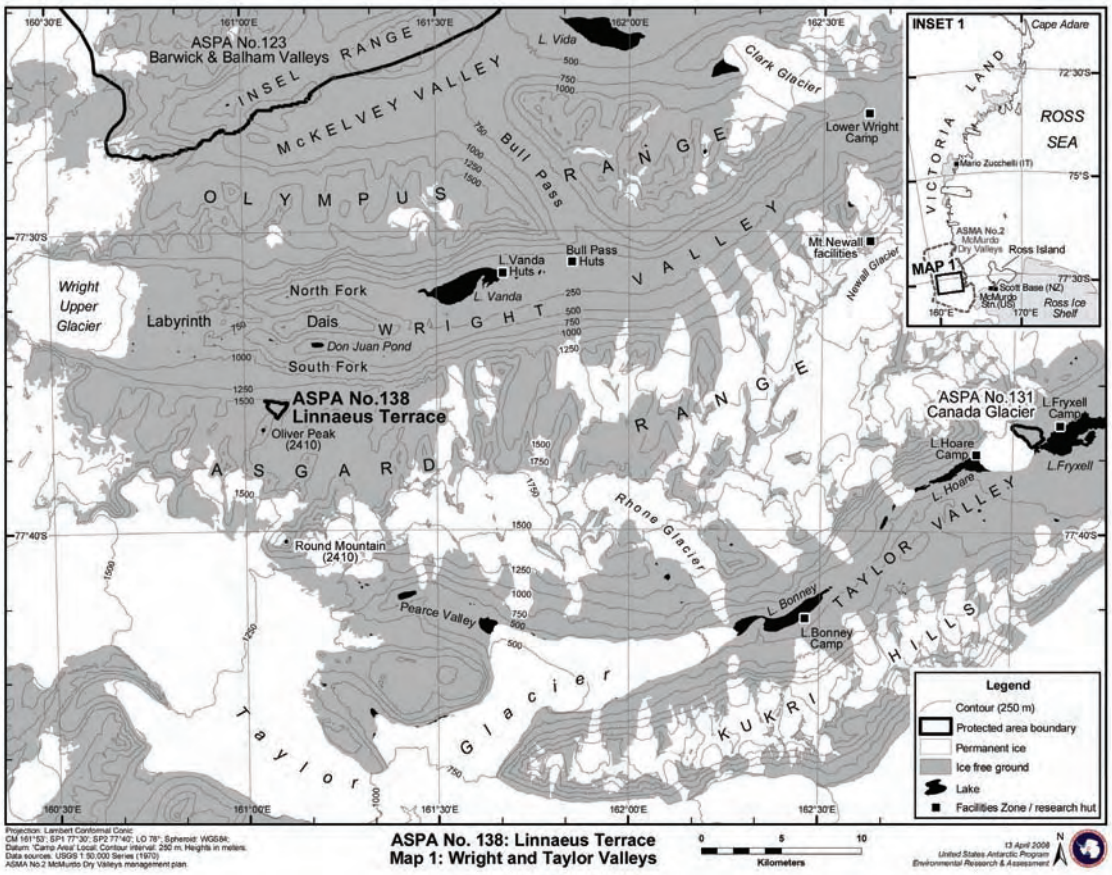
7(ix) Measures that are necessary to ensure that the aims and objectives of the Management Plan can continue to be met

- Visitors should consult and apply where appropriate the comprehensive Code of Conduct and *Guidelines for Conduct of Scientific Research* developed for use within the McMurdo Dry Valleys (ASMA No 2).
- Any specific sites of long-term monitoring should 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 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.


ASPA No.123
Barwick & Balham Valleys
INSEL RANGE
McKELVEY VALLEY
OLYMPUS RANGE
Bull Pass
L Vida
Clark Glacier
Lower Wright Camp
Mt Newall facilities
Newall Glacier
L Vanda Huts
Bull Pass Huts
L Vanda
WRIGHT VALLEY
Wright Upper Glacier
North Fork
Labyrinth
Dais
Don Juan Pond
South Fork
ASPA No.138
Linnaeus Terrace
Oliver Peak (2410)
ASGARD RANGE
Round Mountain (2410)
Pearce Valley
Rhone Glacier
Taylor Glacier
L Bonney
L Bonney Camp
TAYLOR VALLEY
KUKRI HILLS
ASPA No.131
Canada Glacier
L Fryxell Camp
L Fryxell
L Hoare Camp
L Hoare
INSET 1
Cape Adare
VICTORIA LAND
ROSS SEA
Mario Zucchelli (IT)
ASMA No.2 McMurdo Dry Valleys
Ross Island
MAP 1
Scott Base (NZ)
McMurdo Stn (US)
Ross Ice Shelf
Legend
Contour (250 m)
Protected area boundary
Permanent ice
Ice free ground
Lake
Facilities Zone / research hut
ASPA No. 138: Linnaeus Terrace
Map 1: Wright and Taylor Valleys
Kilometers

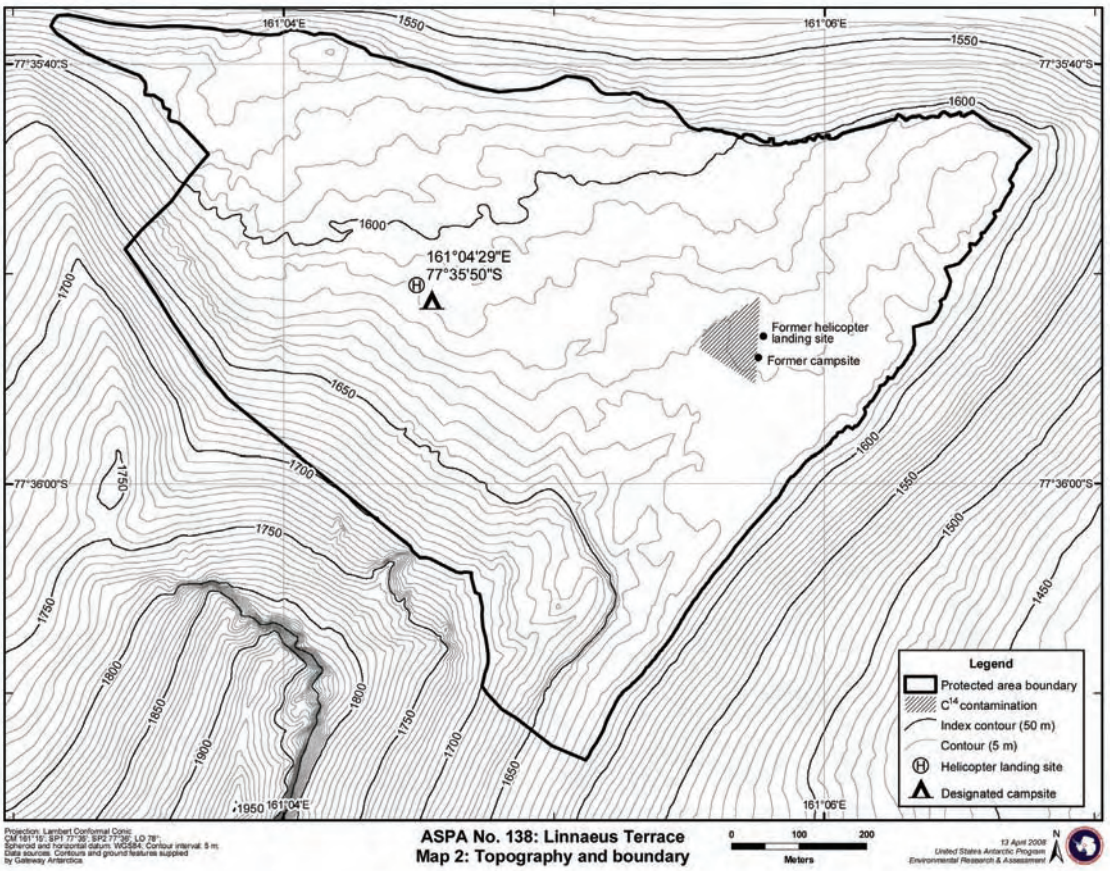
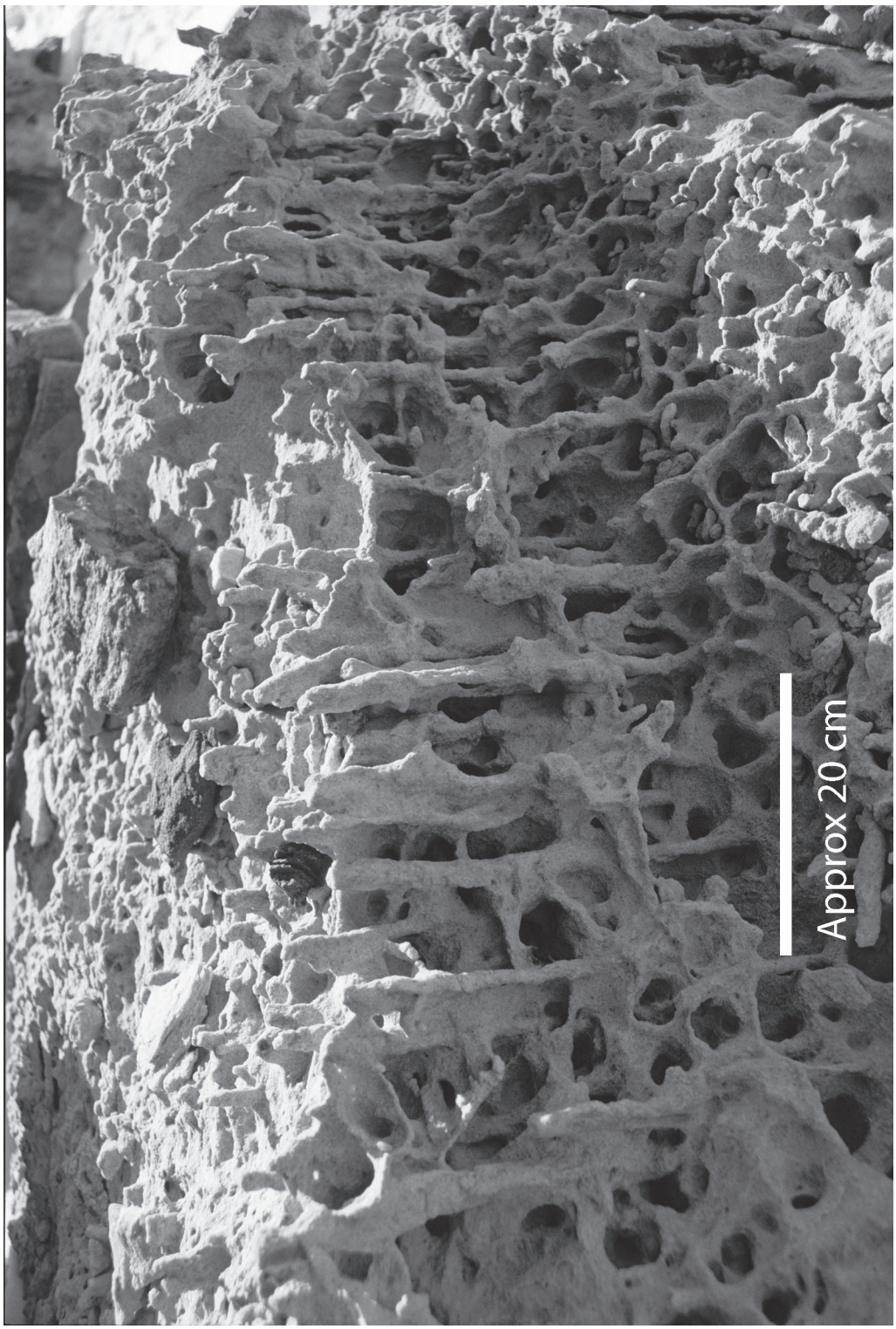

161°04'E
161°06'E
77°35'40"S
77°36'00"S
1550
1600
1650
1700
1750
1800
1850
1900
1950
161°04'29"E
77°35'50"S
Former helicopter landing site
Former campsite
Legend
Protected area boundary
C14 contamination
Index contour (50 m)
Contour (5 m)
Helicopter landing site
Designated campsite
Projection: Lambert Conformal Conic
CM 161°15', SP1 77°35', SP2 77°35', LO 78°.
Spheroid and horizontal datum: WGS84. Contour interval: 5 m.
Data sources: Contours and ground features supplied by Gateway Antarctica
ASPA No. 138: Linnaeus Terrace
Map 2: Topography and boundary
0
100
200
Meters
N
13 April 2008
United States Antarctic Program
Environmental Research & Assessment

Figure 1. Fragile rock formations and trace fossils found on Linnaeus Terrace



Measure 11 (2008)

Antarctic Specially Protected Area No 154 (Botany Bay, Cape Geology, Victoria 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

- Measure 3 (1997), which designated Botany Bay, Cape Geology, Victoria Land, as Site of Special Scientific Interest ("SSSI") No 37 and annexed a management plan for the site;
- Decision 1 (2002), which renamed and renumbered SSSI 37 as Antarctic Specially Protected Area No 154;
- Measure 2 (2003), which annexed a revised management plan for ASPA 154;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 154;

Desiring to replace the existing Management Plan for ASPA 154 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 154: Botany Bay, Cape Geology, Victoria Land, which is annexed to this Measure, be approved; and

2) all prior management plans for ASPA 154, namely those annexed to:

- Measure 3 (1997), and
- Measure 1 (2002);

shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 154

BOTANY BAY, CAPE GEOLOGY, VICTORIA LAND

1. Description of values to be protected

The Area at Botany Bay and Cape Geology (Granite Harbour, Victoria Land) has been proposed by New Zealand on the grounds that it is an extremely rich botanical refuge for such a high latitude location (162° 34' 00"E, 77° 00' 30"S), with a lichen and moss species diversity and abundance that is unique for southern Victoria Land. In addition to a high diversity and abundance of lichens and mosses there are abundant growths of algae, large populations of invertebrates (collembola, mites, nematodes, rotifers) and a colony (in excess of 40 pairs) of south polar skua (*Catharacta maccormicki*). The area is the type locality for the collembolan *Gomphiocephalus hodgsoni* Carpenter and the lichen *Caloplaca coeruleofrigida* Sochting.

The structure and development of the moss and lichen communities is similar to that found more than 10° of latitude further north, with several species at their known southern limit. The Area contains the most southerly record of the hepatic (*Cephaloziella varians*). Of great significance is the size (up to 15 cm diameter) of some lichen thalli (e.g. *Umbilicaria aprina*). The boulder beach has rich populations of both epilithic and endolithic lichens.

In addition to the biological values described, the Area contains within it the remains of a rock shelter and associated artifacts of historical importance, known as 'Granite House', designated as Historic Site No 67 in Measure 4 (1995). Constructed by members of the 1910-1913 British Antarctic Expedition, the shelter and associated artifacts are vulnerable to disturbance and are therefore managed as a Managed Zone within the Area, which is subject to access restrictions. A tent site used by the Western Geological Party under Griffith Taylor, is identifiable as a flat gravel area with a number of stones that were used to weigh down the tent valance. This area is outside the Managed Zone and is subject to access restrictions.

The limited geographical extent of the ecosystem, its unusual ecological features and importance, its exceptional scientific and historic values and the vulnerability of the Area to disturbance through trampling, sampling, pollution or alien introductions, are such that the Area requires long-term special protection.

2. Aims and objectives

Management at Cape Geology aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem and elements of the ecosystem in particular on lichen and moss species, algae, invertebrates and skuas while ensuring protection from over-sampling;
- allow other scientific research provided it is for compelling reasons which cannot be served elsewhere;
- preserve a part of the natural ecosystem as a reference area for the purpose of future comparative studies;

- minimise the possibility of introduction of alien plants, animals and microbes to the Area;
- allow visits to 'Granite House', but under strict control by Permit;
- allow conservation visits to historic sites outside the Managed Zone, but under strict control by Permit;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

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

- Maps showing the location of the Area (stating the special restrictions that apply) shall be displayed prominently, and copies of this Management Plan shall be kept in all of the research hut facilities located within 25km of the Area. Copies of the Management Plan will also be available at Scott Base (NZ).
- Signs illustrating the location, boundaries and clearly stating entry restrictions shall be placed at appropriate locations at the boundaries of the Area and Zones within to help avoid inadvertent entry.
- Markers, signs or structures erected within the Area for scientific or management purposes shall be secured and maintained in good condition.
- Visits shall be made as necessary (no less than once every five years) to assess whether the Area continues to serve the purposes for which it was designated and to ensure management and maintenance measures are adequate.
- National Antarctic Programmes operating in the region 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 A: Botany Bay and Cape Geology, protected area topographic map. Map specifications:

  Projection: Lambert conformal conic; Standard parallels: 1st 79° 20' 00" S; 2nd 76° 40' 00"S Central Meridian: 162° 30' 00" E Latitude of Origin: 78° 01' 16.211" S; Spheroid: WGS84.

  Inset 1: Southern Victoria Land, Ross Sea and Ross Island, showing location of Granite Harbour.

  Inset 2: Cape Geology location map, and Granite Harbour region.
- Map B: Managed Zone with 'Granite House' and viewing area, site topographic, derived from Map A.
- Map C: Vegetation density layers, site topographic, showing the distribution density of moss, lichen and algae within ASPA 154. Map specifications are the same as those in Map A.

6. Description of the Area

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

Cape Geology is situated in the south-western corner of Granite Harbour, southern Victoria Land, at 162°32’52"E, 77°00’14"S, approximately 100km north-west of Ross Island (Map A, Insets). The Area encompasses much of the catchment above Botany Bay and consists of raised boulder beach terraces, weathered rocky steppes and irregular rock platforms around Cape Geology, extending south to include a well-defined elevated cirque containing a small ice field. The bedrock geology at Cape Geology has been described as a porphyritic grey biotite-granite, with phenocrysts of orthoclase of reddish colour, casting the weathered rock with a reddish tinge.

The north-west corner of the Area is marked by a brass plaque in a boulder (M1, 2 m: Map A, 162°31’53"E, 77°00’19’S) 400m SW of Cape Geology. The west boundary is defined by a line extending first 260m SSE from M1 to a large boulder (marked by a cairn) with terrier bolt (M2) at an elevation of 118m on the ridge above the campsite; thence the boundary extends 250m up this ridge to a point at 162m elevation marked by an iron tube with bamboo pole. The west boundary extends a further 300m up this ridge to a large pointed rock at 255m elevation (162°31’46"E, 77°00’40"S) near the edge of the permanent ice field. The boundary then extends 150m south across the ice field to the west edge of a prominent line of exposed rock and moraine in the SW corner of the Area at 325m elevation. The south boundary follows this line of rock east until the exposure is buried by the ice-field, thence SE across the ice field for 500m to the edge of a second and more prominent exposure at an elevation of just over 400m (M3, 162°33’22"E, 77°00’59"S). The boundary follows the upper edge of this exposure and then crosses the ice field SE to an elevation of approximately 325m where the ice-free eastern boundary ridge and the ice field converge, (162°34’15"E, 77°01’16"S). The east boundary follows the ridge crest for 1550m in a NE direction to a low point on the ridge (M4, 392 m, 162°36’10"E, 77°00’13"S) where the east boundary turns to descend due north to the coast at the eastern extremity of the boulder beach of Botany Bay (M5, 5 m). The mean high water mark of the coastline of Botany Bay and Cape Geology forms the northern boundary of the Area.

The Area is extremely rich botanically for such a high-latitude location — it is also one of the richest sites in the whole of continental Antarctica. There is a high diversity and abundance of lichens (more than 30 species) and mosses (seven species), and the structure and development of these communities are similar to those found 10° of latitude further north (Table 1). Some lichen thalli (e.g. *Umbilicaria aprina*) measure up to 15 cm diameter. The boulder beach has rich populations of both epilithic and endolithic lichens. The Area is the type locality for the lichen *Caloplaca coeruleofrigida* Sochting. The Area contains by far the most southerly record of an hepatic (*Cephaloziella varians*) and the mosses *Bryoerythrophyllum recurvirostre* and possibly *Ceratodon purpureus*. There are abundant growths of algae (at least 85 taxa), although the algal flora is not considered particularly unusual for the locality.

Table 1. Estimated species list for lichen and mosses found at Botany Bay (species in bold are common)

Lichen	Mosses
Acarospora gwynnii	*Breyoerythrophyllum recurvirostre*
Amandinea petermannii	***Bryum argenteum***
Buellia frigida	***Bryum pseudotriquetrum***
Buellia papillata	***Ceratodon purpureus***
Buellia subfrigida	*Hennediella heimii*
Caloplaca athallina	*Hennediella heimii*
Caloplaca citrina	*Syntrichia sarconeurum*
Caloplaca coeruleofrigida	
Caloplaca saxicola	
Candelariella flava	

Lichen	Mosses
Carbonea vorticosa?	
Lecanora expectans	
Lecanora fuscobrunnea	
Lecanora mons-nivis	
Lecidea andersonii	
Lecidea cancriformis	
Lecidella siplei	
Lepraria cacuminum	
Physcia caesia	
Physcia dubia	
Rhizocarpon geminatum	
Rhizocarpon geographicum	
Rhizoplaca sp.	
Rhizoplaca melanophthalma	
Rinodina olivaceobrunnea	
Umbilicaria aprina	
Xanthoria elegans	
Xanthoria mawsonii	
indeterminate grey crust	

There are large populations of invertebrates (collembola, mites, nematodes, rotifers) and the area is the type locality for the collembolan *Gomphiocephalus hodgsoni* Carpenter. There is a colony of between 40 – 50 breeding pairs (and numerous non-breeders) of the south polar skua (*Catharacta maccormicki*), which is approximately the same number present in 1911–12. No other bird species are known to breed in the Cape Geology area.

6(ii) Restricted and managed zones within the Area

Restricted Zone

An area directly above Botany Bay is designated as a Restricted Zone in order to preserve part of the Area as a reference site for future comparative studies, while the remainder of the Area (which is similar in biology, features and character) is more generally available for research programmes and sample collection. The west boundary of the Restricted Zone is defined by a line from a marker (iron tube in rock, 20 metres from mean high water mark, elevation 8 m) at the west side of Botany Bay (Map A), extending SW for 170m up to a second iron tube marker on the crest of the adjacent ridge (87 m). This boundary extends 100m to a third iron tube and a cairn (98 m), thence 50m to a large flat rock in the centre of the main flush (marked '1' on Map A). The south boundary of the Restricted Zone extends from the flat rock in the flush in a straight line 820m to the first of two prominent boulders closely adjacent to each other, approximately in the middle of the ice-free slopes above Botany Bay (marked '2' on Map A at 165 m). The east boundary extends 300m from there to a large rock at 135m elevation (marked '3' on Map A), thence NE downslope to the NE boundary point (M5, 5 m). The north boundary of the Restricted Zone is the mean high water mark of Botany Bay and is coincident with the north boundary of the Area.

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

Managed Zone

Situated along the coast from the north-west corner of ASPA 154 to just west of the northernmost tip of Cape Geology, a Managed Zone is designated to protect historic artifacts and plant communities within this vicinity, yet also to allow access to the rock shelter known as 'Granite House', which

was designated as Historic Site No 67 in Measure 4 (1995). The Managed Zone is an area of 470m by 20m along the coast and by 80m at the point that surrounds a rock ridge leading from the coast at Cape Geology to the old shelter. The boundaries are marked on Map B. The shelter was constructed by members of the 1910-1913 British Antarctic Expedition, and used between December 1911 and January 1912 while the party carried out geological and biological exploration in the vicinity. The structure was built using a natural hollow in the rocks, with walls built up from granite boulders and a roof of seal skins: in January 2007 parts of the walls remained, but while several of the skins were present the roof had collapsed. Access to the Managed Zone may be allowed by Permit, subject to the conditions of this Management Plan.

6(iii) Structures within and near the Area

The only structures known to exist in the Area are 'Granite House', the boundary survey markers and signposts in appropriate locations.

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

Botany Bay lies within Antarctic Specially Managed Area (ASMA No 2), McMurdo Dry Valleys. Within the ASMA, the nearest Special Feature is the Sand Dune Feature in Lower Victoria Valley. The nearest protected area to Cape Geology is ASPA 123 at Barwick Valley, 50km distant in a SW direction in the Victoria Land Dry Valleys.

7. Permit conditions

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

- outside of the Restricted and Managed Zones, it is issued only for scientific study of the ecosystem, or for compelling scientific reasons that cannot be served elsewhere, or for conservation at historic sites, or for essential management purposes consistent with plan objectives such as inspection or review;
- access to the Restricted Zone is allowed only for compelling scientific or management reasons that cannot be served elsewhere in the Area;
- access to the Managed Zone may be permitted for scientific, management, historical, educational or recreational purposes;
- the actions permitted will not jeopardise the ecological, scientific or historic values of the Area;
- any management activities are in support of the objectives of the Management Plan;
- the actions permitted are in accordance with the Management Plan;
- the Permit, or an authorized copy, shall be carried within the Area;
- a visit report shall be supplied to the authority named in the Permit;
- permits shall be issued for a stated period.

7(i) Access to and movement within the Area

Vehicles are prohibited within the Area and access should be by foot. Helicopters are normally prohibited from landing within the Area: there is a designated site 60m outside of the Area (162° 31' 47.7"E, 77° 00' 20.8"S: Map A, Map B and Map C). Access to the landing site should be from the open water / sea ice to the north of the Area. Overflight of the Area lower than 300m (~1000 ft)

above ground level is normally prohibited. When required for essential scientific or management purposes, transient overflight or landing may be allowed: conduct of such anticipated overflights or landings must be specifically authorised by Permit. Use of helicopter smoke grenades within the Area is prohibited unless necessary for safety, and all grenades should be retrieved. All helicopter landing or overflight lower than 300m AGL is prohibited within the Restricted Zone.

Access into the Area should preferably be from the recommended camping area along a preferred walking route 10–20m from the coast, which is relatively devoid of vegetation. Visitors should avoid walking on visible vegetation, or unnecessary disturbance to bird populations. Care should be exercised walking in areas of moist ground, where foot traffic can easily damage sensitive soils, plant and algal communities, and degrade water quality: walk around such areas, on ice or rocky ground. Pedestrian traffic should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise effects.

Access to the Managed Zone should preferably be from the coast, following the ridge leading up to 'Granite House' (Map B). An alternative route may be used from the recommended camping area and helicopter landing site, along a preferred walking route 10-20m from the coast, if sea-ice travel is unsafe (Map B). Unless specifically authorised by Permit, visitors are prohibited from entering the historic shelter, and are limited to access and viewing from the rock ridge designated for access from the coast in order to prevent damage to the rich vegetation within the Managed Zone. Visitors shall not venture south of 'Granite House', unless specifically authorised by Permit. A maximum of 10 people is permitted to enter the Managed Zone at any one time, and a maximum of 5 people is allowed in the viewing area overlooking 'Granite House' at any one time (Map B).

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

- Scientific research that will not jeopardise the ecosystem of the Area;
- essential management activities, including monitoring;
- limited visits to the Managed Zone for reasons other than science or management subject to the conditions described in this plan;
- activities with the aim of preserving or protecting the historic resources within the Area.

7(iii) Installation, modification or removal of structures

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

7(iv) Location of field camps

Camping within the Area is prohibited and should be at a site outside of the Area, 100m from the NW corner (Map A), adjacent to the designated helicopter landing site. This camping site has been disturbed by previous activities and visitors should reoccupy these disturbed positions for tents and other facilities.

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

No living animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions. No herbicides or pesticides shall be brought into the Area. Any other chemicals, including radio-nuclides or stable isotopes, which may be introduced for scientific or management purposes specified in the Permit, shall be removed from

the Area at or before the conclusion of the activity for which the Permit was granted. Fuel is not to be stored in the Area, unless required for essential purposes connected with the activity for which the Permit has been granted. All materials introduced shall be for a stated period only, shall be removed at or before the conclusion of that stated period, and shall be stored and handled so that risk of their introduction into the environment is minimised.

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

This is prohibited, except in accordance with a Permit. Where animal taking or harmful interference is involved this should, as a minimum standard, be in accordance with the *SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica*.

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

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

Unless specifically authorised by Permit, visitors are prohibited from interfering with or attempting restoration of 'Granite House' in any way, or from handling, taking or damaging any artifacts found within the Managed Zone. Evidence of recent changes, damage or 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, including all human wastes, shall be removed from the Area.

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

Permits may be granted to enter the Area to carry out biological monitoring and site inspection activities, which may involve the collection of small samples for analysis or review, to erect or maintain signposts, or for management activities, especially those associated with the Historic Sites.

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

To help maintain the ecological and scientific values of the isolation and relatively low level of human impact at the Area visitors shall take special precautions against introductions. Of particular concern are microbial or vegetation introductions sourced from soils at other Antarctic sites, including stations, or from regions outside Antarctica. To minimize the risk of introductions, visitors shall thoroughly clean footwear and any equipment to be used in the area - particularly sampling equipment and markers – before entering the Area.

Visitors shall consult and apply where appropriate the comprehensive Code of Conduct and *Guidelines for Conduct of Scientific Research* developed for use within the McMurdo Dry Valleys (ASMA No 2).

7(x) Requirements for reports

Parties should ensure that the principal holder for each permit issued submit to the appropriate authority a report describing the activities undertaken. Such reports should include, as appropriate,

the information identified in the Visit Report form suggested by SCAR. Parties should maintain a record of such activities and, in the Annual Exchange of Information, should provide summary descriptions of activities conducted by persons subject to their jurisdiction, which should be in sufficient detail to allow evaluation of the effectiveness of the Management Plan. Parties should, wherever possible, deposit originals or copies of such original reports in a publicly accessible archive to maintain a record of usage, to be used both in any review of the management plan and in organising the scientific use of the Area.

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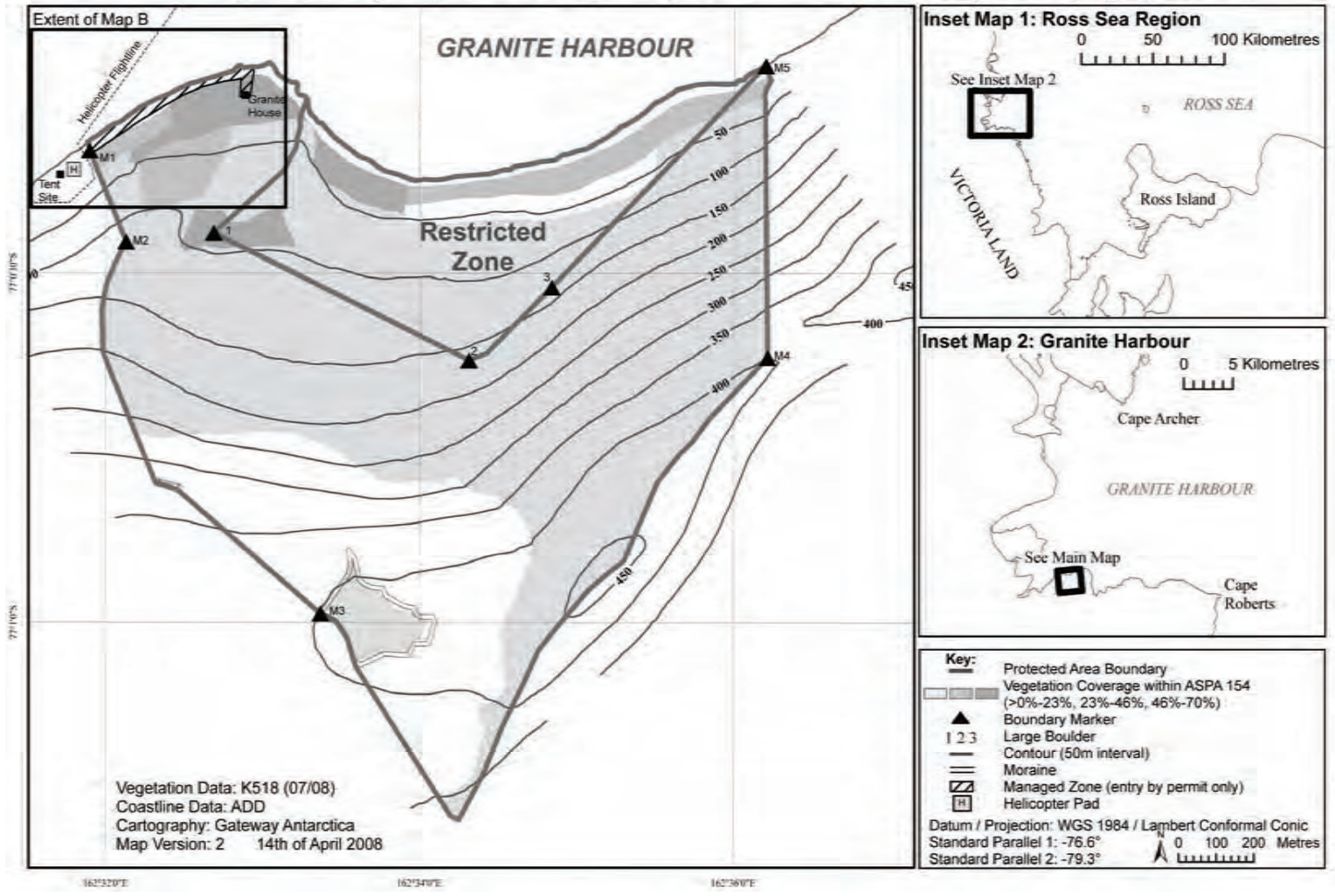
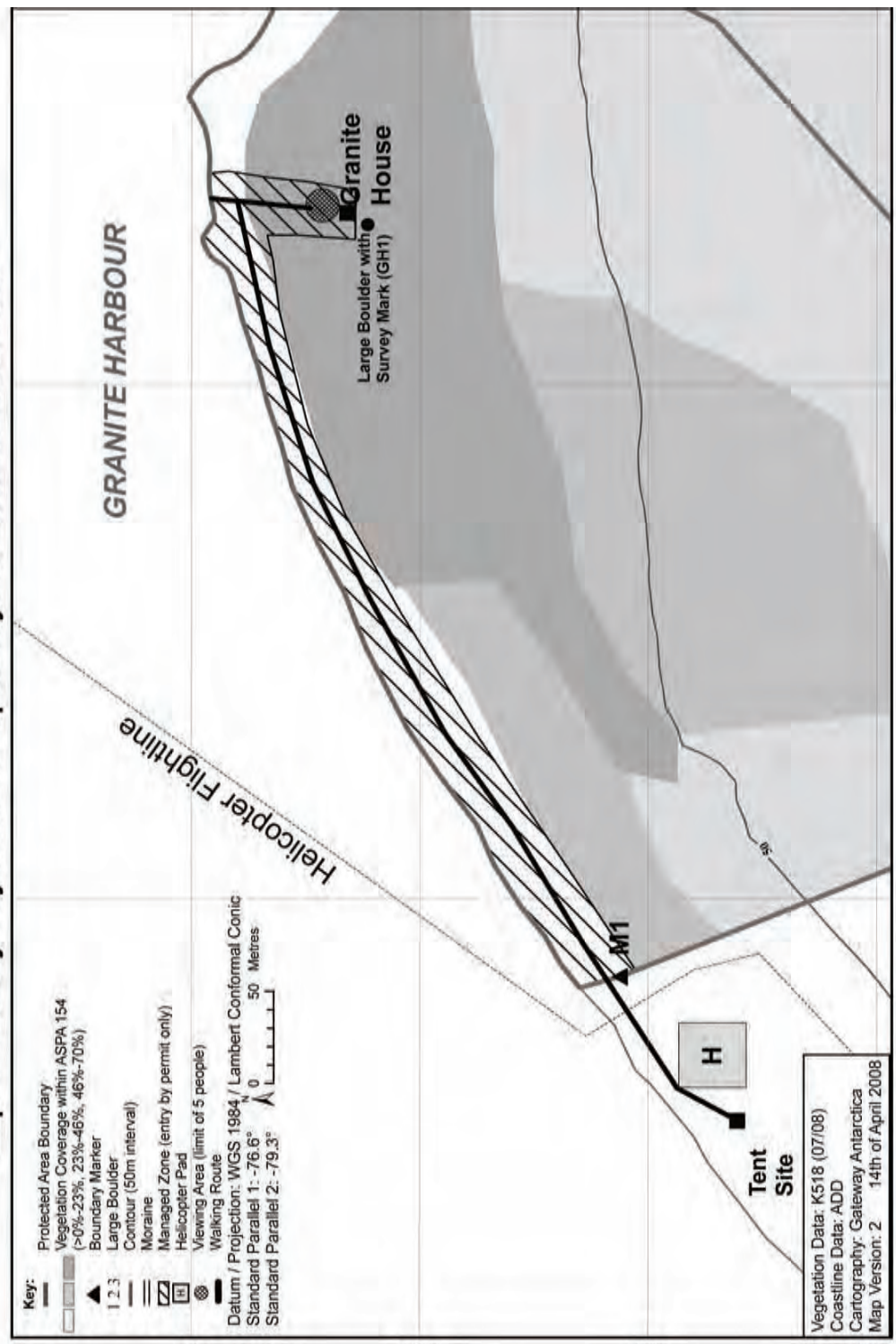
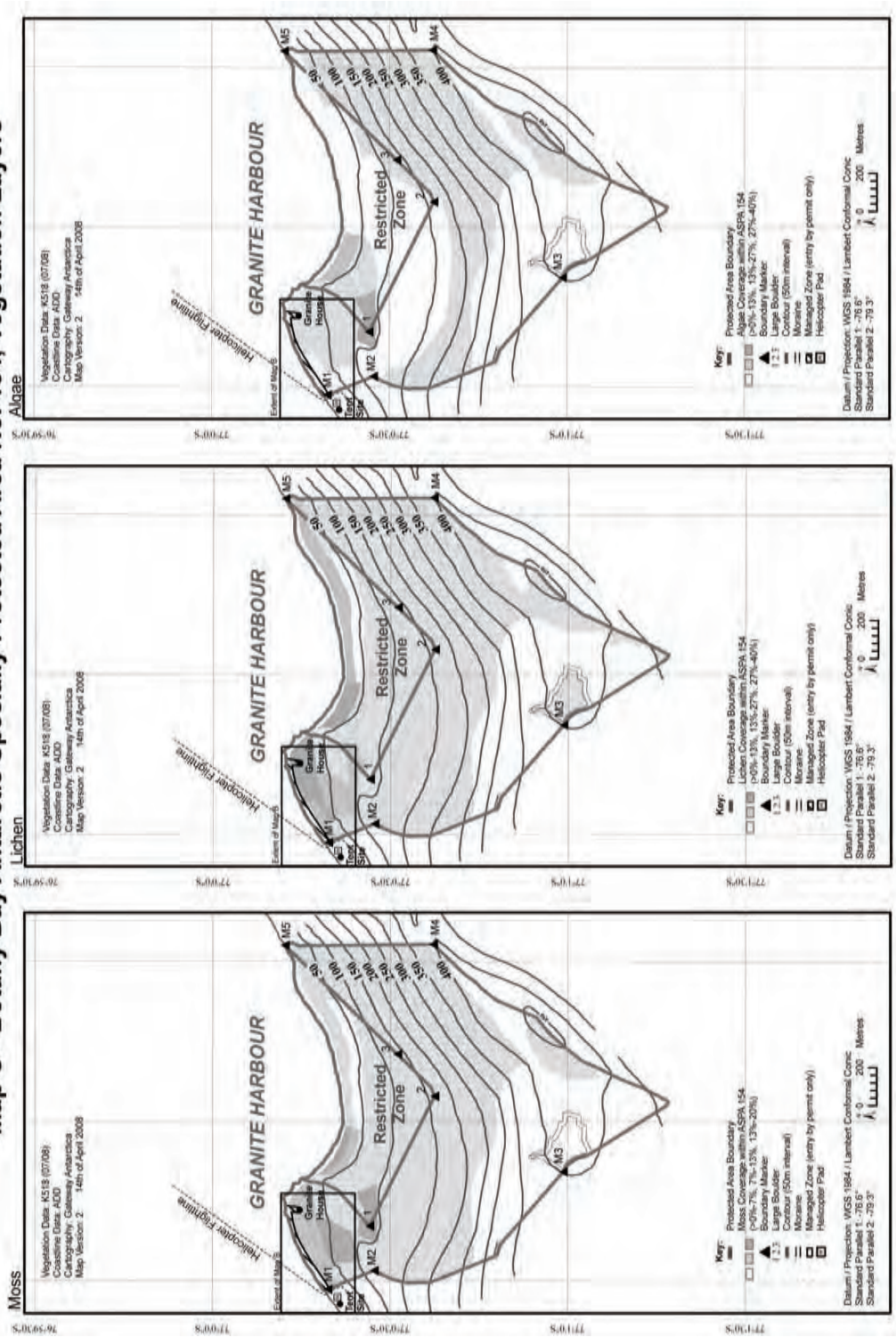
Map A - Botany Bay Antarctic Specially Protected Area No. 154, Site Topographic Map




Map B - Botany Bay Antarctic Specially Protected Area No. 154
Key:
Protected Area Boundary
Vegetation Coverage within ASPA 154 (>0%-23%, 23%-46%, 46%-70%)
Boundary Marker
Large Boulder
Contour (50m interval)
Moraine
Managed Zone (entry by permit only)
Helicopter Pad
Viewing Area (limit of 5 people)
Walking Route
Datum / Projection: WGS 1984 / Lambert Conformal Conic
Standard Parallel 1: -76.6°
Standard Parallel 2: -79.3°
0
50 Metres
GRANITE HARBOUR
Helicopter Flightline
Granite House
Large Boulder with Survey Mark (GH1)
M1
H
Tent Site
Vegetation Data: K518 (07/08)
Coastline Data: ADD
Cartography: Gateway Antarctica
Map Version: 2 14th of April 2008


Map C - Botany Bay Antarctic Specially Protected Area No. 154, Vegetation Layers
Moss
Lichen
Algae
GRANITE HARBOUR
Restricted Zone
Granite House
Helicopter Flightline
Key:
Protected Area Boundary
Moss Coverage within ASPA 154 (40%-75%, 75-15%, 13%-20%)
Lichen Coverage within ASPA 154 (40%-15%, 15%-27%, 27%-40%)
Algae Coverage within ASPA 154 (40%-15%, 15%-27%, 27%-40%)
Boundary Marker
Large Boulder
Contour (50m interval)
Moraine
Managed Zone (entry by permit only)
Helicopter Pad
Datum / Projection: WGS 1984 / Lambert Conformal Conic
Standard Parallel 1: -76.6°
Standard Parallel 2: -79.3°
0 200 Metres

Measure 12 (2008)

Antarctic Specially Protected Area No 155 (Cape Evans, 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

- Measure 2 (1997), which designated the Cape Evans Historic Site and its environs as Specially Protected Area ("SPA") No 25 and annexed a management plan for the site;
- Decision 1 (2002), which renamed and renumbered SPA 25 as Antarctic Specially Protected Area No 155;
- Measure 2 (2005), which adopted a revised management plan for ASPA 155;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 155;

Desiring to replace the existing Management Plan for ASPA 155 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 155: Cape Evans, Ross Island, which is annexed to this Measure, be approved; and
2) all prior Management Plans for ASPA No 155, namely those annexed to:

   - Measure 2 (1997), and
   - Measure 2 (2005);

   shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 155

CAPE EVANS, ROSS ISLAND

(including Historic Sites and Monuments Nos. 16 and 17, the historic *Terra Nova* hut of Captain R.F. Scott and its precincts)

1. Description of values to be protected

The significant historic value of this Area was formally recognised when it was listed as Historic Site and Monument Nos 16 and 17 in Recommendation 9 (1972). An area containing both sites was designated as Specially Protected Area No 25 in Measure 2 (1997) and redesignated as Antarctic Specially Protected Area 155 in Decision 1 (2002).

The Terra Nova hut (Historic Site and Monument No 16) is the largest of the historic huts in the Ross Sea region. It was built in January 1911 by the British Antarctic Terra Nova Expedition of 1910-1913, led by Captain Robert Falcon Scott, RN. It was subsequently used as a base by the Ross Sea party of Sir Ernest Shackleton's Imperial Trans-Antarctic Expedition of 1914-1917.

Historic Site and Monument No 17 contains the Cross on Wind Vane Hill, (erected in the memory of three members of Shackleton's Ross Sea party who died in 1916). In addition to this, the anchors of the ship Aurora from the Imperial Trans-Antarctic Expedition, an instrument shelter, several supply dumps and dog kennels, and numerous artefacts are distributed around the site.

Some of the earliest advances in the study of earth sciences, meteorology, flora and fauna are associated with the Terra Nova Expedition based at this site. The data collected can provide a bench mark against which to compare current measurements. The history of these activities and the contribution they have made to the understanding and awareness of Antarctica therefore contribute to both the historic and scientific value of the site.

The Cape Evans site is one of the principal sites of early human activity in Antarctica. It is an important symbol of the Heroic Age of Antarctic exploration, and as such, has considerable historical significance.

2. Aims and objectives

The aim of this Management Plan is to provide protection for the Area and its features so that its values can be preserved. The objectives of the Plan are to:

- avoid degradation of, or substantial risk to, the values of the Area;
- maintain the historic values of the area through planned conservation work which may include:
    a) an annual 'on-site' maintenance programme,
    b) a programme of monitoring the condition of artefacts and structures, and the factors which affect them, and conservation of artefacts to be conducted on and off site;

- allow management activities which support the protection of the values and features of the Area including:
  a) mapping and otherwise recording the disposition of historic items in the hut environs, and
  b) recording other relevant historic data; and
- prevent unnecessary human disturbance to the Area, its features and artefacts through managed access to the Terra Nova hut.

3. Management activities

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

- A regular programme of conservation work shall be undertaken on the Terra Nova hut and associated artefacts in the Area.
- Systematic monitoring shall be put in place to assess the impacts of present visitor limits, and the results and any related management recommendations included in reviews of this Management Plan.
- Visits shall be made as necessary for management purposes.
- National Antarctic Programmes operating in, or those with an interest in, the Area shall consult together with a view to ensuring the above management activities are implemented.

4. Period of designation

Designated for an indefinite period.

5. Maps

- Map A: Cape Evans regional map. This map shows the boundaries of the proposed Antarctic Specially Protected Areas with significant topographical features, approaches, field camp sites and helicopter landing sites. It also shows the approximate location of significant historical items within the area. Inset: Ross Island showing sites of nearby protected areas and stations.
- Map B: Cape Evans site map. This map shows the approximate location of specific historic artefacts and sites within the Area.

6. Description of the Area

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

Cape Evans is a small, triangular shaped, ice-free area in the south west of Ross Island, 10 kilometres to the south of Cape Royds and 22 kilometres to the north of Hut Point Peninsula on Ross Island. The ice-free area is composed of till-covered basalt bedrock. The designated Area is located on the north western coast of Cape Evans adjacent to Home Beach and centred on Scott's *Terra Nova* hut. The boundaries of the ASPA are:

- South: a line extending east from a point at 77º 38' 15.47" S, 166º 25' 9.48" E – 20 metres south of the cross on Wind Vane Hill;
- South-west: a line from the reference point above extended to follow the crest of the small ridge descending in a north westerly direction to the shoreline at 77º 38' 11.50" S, 166º 24' 49.47" E;
- North-west: by the shoreline of Home Beach;
- North-east: by the line of the outlet stream from Skua Lake to Home Beach at 77º 38' 4.89" S, 166º 25' 13.46" E;
- East: by the line extending south from the western edge of Skua Lake at 77º 38' 5.96" S, 166º 25' 35.74" E – to intersect with the southern boundary at 77º 38' 15.48" S, 166º 25' 35.68" E.

Skuas (*Catharacta maccormicki*) nest on Cape Evans and Adelie penguins (*Pygoscelis adeliae*) from the rookery at Cape Royds may occasionally transit the Area. Weddell seals have also been seen hauled up on Home Beach.

6(ii) Access to the Area

When safe conditions exist, vehicle approach to the Area can be made across the sea ice. Vehicles are prohibited from entering the Area, unless approved to do so for management activities in accordance with 7(i) below. During open water, landings by boat may be made directly in front of the hut at Home Beach. Helicopter landings may be made at either of the existing designated landing sites marked on Maps 1 and 2. One site is approximately 100 metres to the north of the hut, just outside the Area. The other is located adjacent to the New Zealand refuge hut approximately 250 metres beyond the south western boundary of the Area.

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

All structures located within the Area are of historic origin, although a temporary, modern protective enclosure around the magnetic hut remains in place. A major feature of the Area is Scott's Terra Nova hut located on the north western coast of Cape Evans at Home Beach. The hut is surrounded by many historic relics including the anchors from the Aurora, dog skeletons, instrument shelters, dog line, meteorological screen, fuel dump, magnetic hut, coal, stores, rubbish dumps and flag pole. A memorial cross to three members of Shackleton's Ross Sea party of 1914-1917 stands on West Vane Hill. All these features are included within the boundaries of the Area.

A New Zealand refuge hut, camp site and helicopter landing site are situated approximately 250m to the south west of the Area.

The Greenpeace year-round World Park Base was sited to the north east of Scott's hut from 1987 to 1992. No visible sign of the base remains.

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

- ASPA 121 (previously SSSI No 1) and
- ASPA 157 (SPA No 27), Cape Royds are 10 kilometres north of Cape Evans.
- ASPA 122 (SSSI No 2), Arrival Heights and
- ASPA 158 (SPA No 28), Hut Point are approximately 20 kilometres south of Cape Evans at Hut Point Peninsula.
- ASPA 130 (SSSI No 11), Tramway Ridge is approximately 20 kilometres east of Cape Evans.

All sites are located on Ross Island.

6(v) Special Zones within the Area

There are no special zones within the Area.

7. Terms and conditions for entry permits

Entry to the Area is prohibited except in accordance with a Permit. Permits shall be issued only by appropriate national authorities and may contain both general and specific conditions. A Permit may be issued by a national authority to cover a number of visits in a season. Parties operating in the Area shall consult together and with groups and organisations interested in visiting the Area to ensure that visitor numbers are not exceeded.

Permits to enter the site may be issued for a stated period for:

- activities related to conservation, research and/or monitoring purposes;
- management activities in support of the objectives of the Plan;
- activities related to educational or recreational activities including tourism, providing they do not conflict with the objectives of this Plan.

7(i) Access to and movement within or over the Area

- Control of movement within the Area is necessary to prevent damage caused by crowding around the many vulnerable features within the Area. The maximum number in the Area at any time (including guides and those within the hut) shall be: 40 people.
- Control of numbers within the hut is necessary to prevent damage caused by crowding around the many vulnerable features within the hut. The maximum number within the hut at any time (including guides) shall be: 12 people.
- Avoidance of cumulative impacts on the interior of the hut requires an annual limit on visitor numbers. The effects of the current visitor levels (average 1489 per year between 1998 and 2004) suggest that a significant increase could cause significant adverse impacts. The maximum annual number of visitors shall be: 2,000 people.
- These limits have been set based on current visitor levels and on the best advice available from conservation advisory agencies (which include conservators, archaeologists, historians, museologists and other heritage protection professionals). The limits are based on the proposition that any significant increase in the current level of visitor numbers would be detrimental to the values to be protected. An ongoing monitoring programme to assess the effects of visitors is required to provide the basis for future reviews of the Management Plan, in particular whether the current limits on numbers of visitors are appropriate.
- Adequate supervision of visits to the Area is necessary to prevent damage caused by crowding and by actions inconsistent with the Code of Conduct set out in section 7(ii). All tourism, educational and recreational visits must be supervised by an experienced guide nominated by the operator (refer section 7(ix)).
- Helicopter landings are prohibited within the Area as they have the potential to damage the site by blowing scoria and ice particles and to accelerate the abrasion of the hut and surrounding artefacts. Refer to 6(ii) for recommended approaches and landing sites.
- Vehicles are prohibited from entering the Area except where it is necessary to use vehicles for management activities. This may include, but is not limited to activities such as clearing

snow and ice that is judged to be a threat to the historic hut or other artefacts. In all such cases consideration shall be given to:

i. using the minimum sized vehicle required for the job;
ii. ensuring the vehicle operator is fully trained and aware of the provisions of this management plan, and of the sensitivities at the site of operation of the vehicle;
iii. careful planning and monitoring of all vehicle movements within the site so as to avoid damage to either the hut or artefacts buried beneath accumulated snow and ice.

7(ii) Activities which may be conducted within the Area

Activities which may be conducted within the Area include:

- visits for conservation purposes;
- educational and/or recreational visits including tourism; and
- scientific activity which does not detract from the values of the Area.

Visitors should adhere to the following Code of Conduct, except where conservation, research, monitoring or management activities specified in the Permit require otherwise:

- To reduce floor abrasion, thoroughly clean grit and scoria, ice and snow from boots using the brushes provided before entering the hut;
- Remove any clothing made wet by sea water, and any sea ice crystals from boots, as salt particles accelerate corrosion of metal objects;
- Do not touch, move or sit on any items or furniture in the huts - handling artefacts causes damage;
- As many areas are cramped and artefacts can be accidentally bumped, do not wear packs inside;
- When moving around the sites, take great care not to tread on any items which may be obscured by snow;
- Use of combustion style lanterns, naked flames or smoking in or around the huts is strictly forbidden as fire is a major risk; and
- Visits should be recorded in the book provided. This allows times and levels of visitation to be correlated with temperature and humidity data automatically logged inside the hut.

7(iii) Installation, modification or removal of structures

- No new structures are to be erected in the Area, or scientific equipment installed, except for conservation activities as specified in section 3.
- No historic structure shall be removed from the Area, unless specified in a Permit issued in accordance with the provisions of section 7(vii).

7(iv) Location of field camps

- Use of the historic hut for living purposes is not permitted. Camping is prohibited in the Area under any circumstances.
- An existing field camp site is associated with the two New Zealand field shelters located 250m south west of the Area and should be used by all parties intending to camp in this area.

7(v) Restrictions on materials and organisms which may be brought to the Area

- No living animals, plant material, micro-organisms or soil shall be introduced to the Area. No food products shall be taken into the Area.
- Chemicals may only be introduced for permitted scientific or conservation purposes. Chemicals (including fuel) or other materials are not to be left in the Area, unless required for essential purposes connected with the conservation of the historic structures or associated relics.
- All materials are to be removed when no longer required and before a date to be specified in the relevant Permit.

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

- This activity is prohibited except in accordance with a Permit issued by the appropriate national authority specifically for that purpose under Article 3, Annex II to the Protocol on Environmental Protection.
- Where animal taking or harmful interference is involved, this should, as a minimum standard, be in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.

7(vii) Collection or removal of anything not imported by the permit holder

- Material may be collected and removed from the Area for conservation reasons consistent with the objectives of this Plan only when specified in a Permit issued by the appropriate national authority.
- Materials which pose a threat to the environment or human health may be removed from the Area for disposal, in accordance with a Permit, where they meet one or more of the following criteria:

  i. the artefact presents a threat to the environment, wildlife or human health and safety;

  ii. it is in such poor condition that it is not reasonably possible to conserve it;

  iii. it does not contribute in any significant way to our understanding of the hut, its occupants or the history of Antarctica;

  iv. it does not contribute to, or it detracts from, the visual qualities of the site or the hut, and/or;

  v. it is not a unique or rare item;

  and where such action is:

  vi. undertaken by parties with appropriate heritage conservation expertise; and

  vii. part of an overall plan for conservation work at the site.

- National authorities should ensure that any removal of artefacts and assessment against the above criteria is carried out by personnel with appropriate heritage conservation expertise.
- Artefacts judged to be of high historic value, which cannot be conserved on site with currently available techniques, may be removed in accordance with a Permit for storage in a controlled environment until such time as they can safely be returned to the Area.
- Samples of soil and other natural materials may be removed for scientific purposes only in accordance with an appropriate Permit.

7(viii) Disposal of waste

- All human waste, grey water and other waste generated by work parties or visitors shall be removed from the Area.

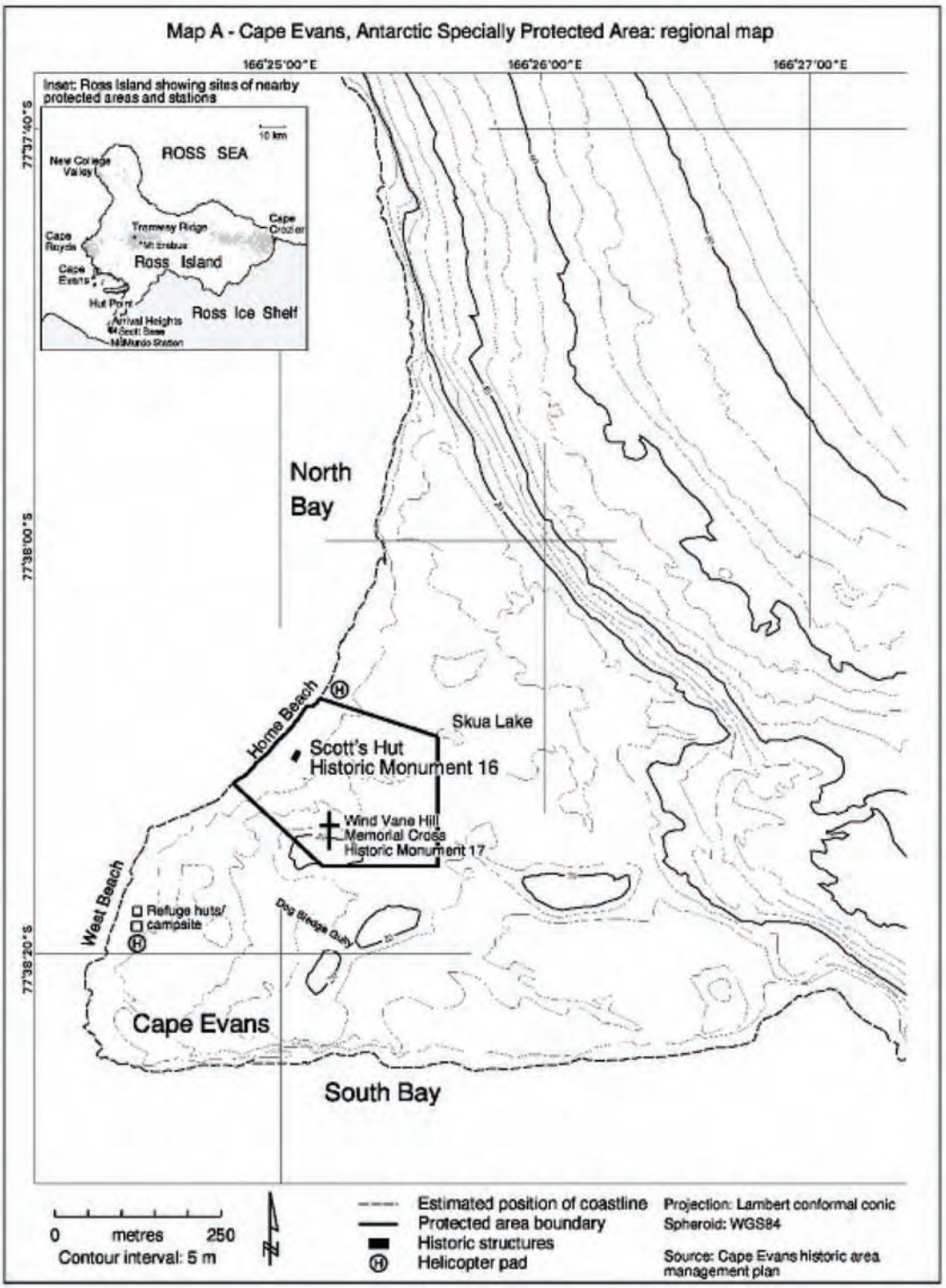
7(ix) Measures that may be necessary to ensure that the aims and objectives of the Management Plan continue to be met

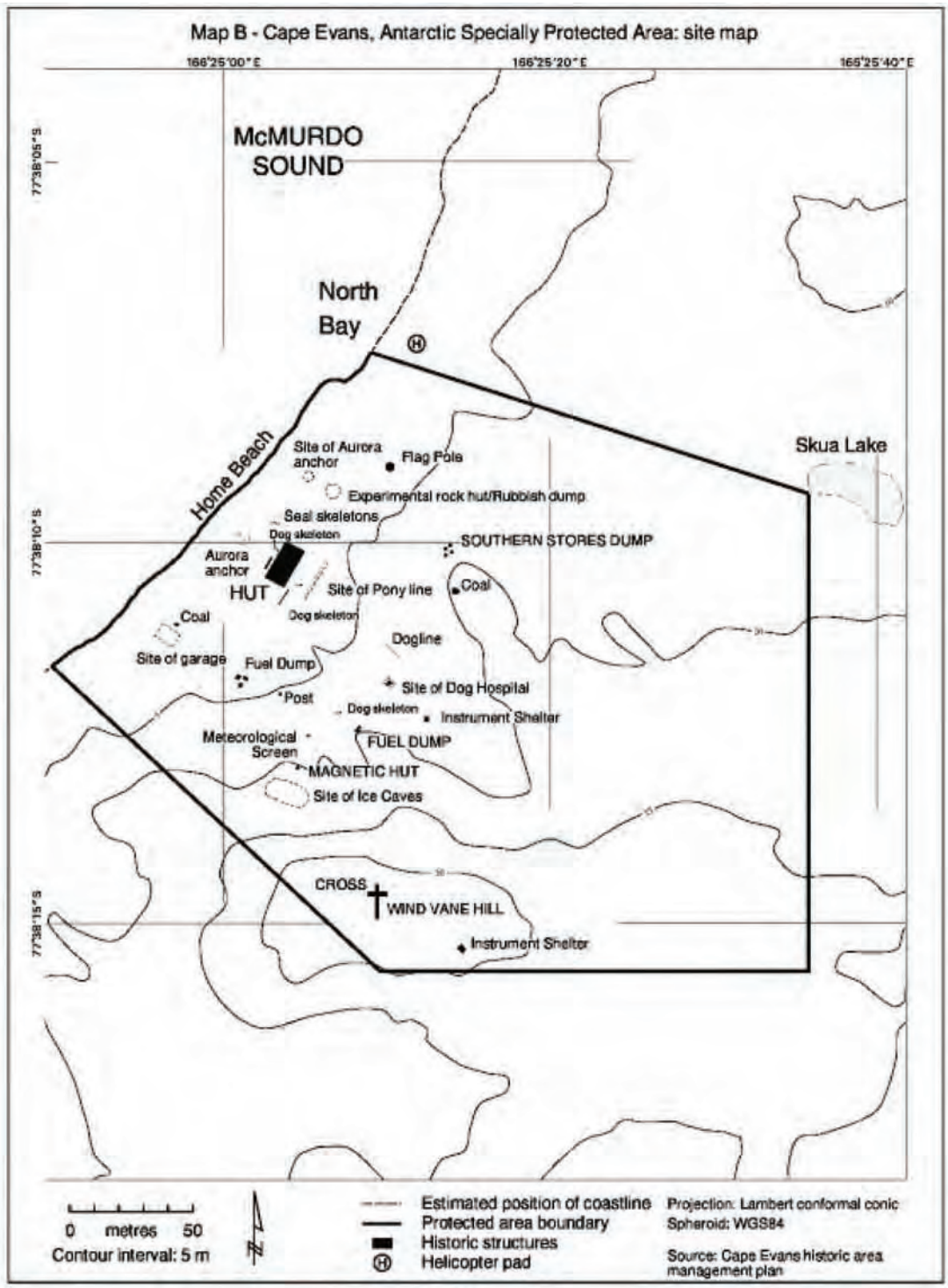
- The Permit, or an authorised copy, shall be carried within the Area.
- Information on the requirements of this Plan shall be provided to all visitors.
- The Code of Conduct set out in section 7(ii) shall be followed by all visitors, except where conservation, research, monitoring or management purposes require otherwise.
- Operators facilitating educational and recreational visits (including tourism) to the Area shall, prior to commencement of the summer season, nominate people with a working knowledge of both the site and this Management Plan to act as guides during visits.
- All educational and recreational visits (including tourism) shall be supervised by a nominated guide, who is responsible for briefing visitors on the code of conduct and ensuring it is complied with.
- Parties shall consult and coordinate to develop skills and resources, particularly those related to conservation techniques, to assist with the protection of the Area's values.

7(x) Requirements for reports

Parties shall ensure that the principal holder for each Permit issued submits to the appropriate authority a report describing the activities undertaken. Such reports shall include, as appropriate, the information identified in the Visit Report provided in Appendix 4 of Resolution 2 (1998). In addition, any removal of materials in accordance with section 7(vii) shall be detailed, including the reason for removal and the current location of the items or the date of disposal. Any return of such items to the site shall also be reported.

Parties shall maintain a record of activities within the Area and, in the Annual Exchange of Information, shall provide summary descriptions of activities conducted by persons subject to their jurisdiction, in sufficient detail to allow an evaluation of the effectiveness of the Management Plan. Parties should wherever possible deposit originals or copies of such reports in a publicly accessible archive to maintain a record of visitation, to be used both for review of the Management Plan and in managing further visitation to the site.


Map A - Cape Evans, Antarctic Specially Protected Area: regional map
166°25'00"E
166°26'00"E
166°27'00"E
77°37'40"S
77°38'00"S
77°38'20"S
Inset: Ross Island showing sites of nearby protected areas and stations
10 km
ROSS SEA
New College Valley
Cape Royds
Tramway Ridge
Mt Erebus
Cape Crozier
Ross Island
Cape Evans
Hut Point
Arrival Heights
Scott Base
McMurdo Station
Ross Ice Shelf
North Bay
Home Beach
Skua Lake
Scott's Hut
Historic Monument 16
Wind Vane Hill
Memorial Cross
Historic Monument 17
West Beach
Refuge huts/
campsite
Dog Sledge Gully
Cape Evans
South Bay
0
metres
250
Contour interval: 5 m
Estimated position of coastline
Protected area boundary
Historic structures
Helicopter pad
Projection: Lambert conformal conic
Spheroid: WGS84
Source: Cape Evans historic area management plan


Map B - Cape Evans, Antarctic Specially Protected Area: site map
166°25'00" E
166°25'20" E
165°25'40" E
77°38'05" S
77°38'10" S
77°38'15" S
McMURDO SOUND
North Bay
Home Beach
Skua Lake
Site of Aurora anchor
Flag Pole
Experimental rock hut/Rubbish dump
Seal skeletons
Dog skeleton
SOUTHERN STORES DUMP
Aurora anchor
HUT
Site of Pony line
Coal
Dog skeleton
Coal
Dogline
Site of garage
Fuel Dump
Post
Site of Dog Hospital
Dog skeleton
Instrument Shelter
Meteorological Screen
FUEL DUMP
MAGNETIC HUT
Site of Ice Caves
CROSS
WIND VANE HILL
Instrument Shelter
0 metres 50
Contour interval: 5 m
N
Estimated position of coastline
Protected area boundary
Historic structures
Helicopter pad
Projection: Lambert conformal conic
Spheroid: WGS84
Source: Cape Evans historic area management plan

Measure 13 (2008)

Antarctic Specially Protected Area No 160 (Frazier Islands, Windmill Islands, Wilkes 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 the Areas;

Recalling Measure 2 (2003), which designated Frazier Islands, Wilkes Land, as Antarctic Specially Protected Area No 160, and annexed a management plan for the site;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 160;

Desiring to replace the existing Management Plan for ASPA 160 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 160: Frazier Islands, Windmill Islands, Wilkes Land, East Antarctica which is annexed to this Measure, be approved;
2) the Management Plan for ASPA 160 annexed to Measure 2 (2003) shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 160

FRAZIER ISLANDS, WINDMILL ISLANDS, WILKES LAND, EAST ANTARCTICA

Introduction

The Frazier Islands consists of a group of three islands located approximately 16km offshore from the Australian Casey station, in East Antarctica (see Map A). The islands support the largest of only four known breeding colonies of southern giant petrels *Macronectes giganteus* on continental Antarctica, and were designated as an Antarctic Specially Protected Area under Measure 2 (2003) for the sanctuary of the birds.

Following their discovery in 1955, the southern giant petrel colonies at the Frazier Islands were visited intermittently during the period mid-January to late March. The aim of these visits was usually the banding of southern giant petrel chicks. Weather permitting, counts of the chicks present were made but were often restricted to Nelly Island. Thus, the early data available do not offer the information needed for an analysis of possible changes in the status of the population. In more recent years, occupied nests were counted in December, usually covering all three islands. The indication is that the breeding population, especially at Dewart Island, may be increasing.

Apart from visits for seabird observations, the Frazier Islands have been visited very infrequently. Twenty three visits, or on average one visit every two years, have occurred since the late 1950s (see Appendix 1). In the mid-1980s, a formal management strategy was implemented to minimise human disturbance to breeding colonies of southern giant petrels in the vicinity of Australia's Antarctic stations. The Australian Antarctic Division restricted access by Australian Antarctic programme participants so that census visits occurred once in every three- to five-year period and implemented tight administrative controls over visits for other purposes. The census interval was considered an appropriate compromise between the risk of disturbance to breeding birds from monitoring activities and the need to obtain population data. Current thinking suggests it is desirable to provide for more frequent censuses, if conducted in an appropriate manner, to allow more detailed understanding of population status and trends.

A recent ostensible increase in the breeding population of southern giant petrels at the Frazier Islands, combined with the apparent positive effects of the existing protective measures, suggests that continued and formalised protection of southern giant petrel breeding colonies is warranted. Long-term protection and monitoring of southern giant petrels at the Frazier Islands will contribute to the development of appropriate regional and global conservation strategies for the species and will provide information for comparisons with populations elsewhere.

This revised Management Plan reaffirms the values of the original designation and accords with Annex V of the Protocol on Environmental Protection.

1. Description of values to be protected

The Area is primarily designated to protect the breeding colony of southern giant petrels, which is the largest known in the continental Antarctic.

In the late 1980s the world breeding population of southern giant petrels was estimated at 38,000 pairs. Declines in the 1990s appear to have stabilised and, while some populations appear to be decreasing and others are stable, the major colonies appear to be increasing. Recognising this global trend, but mindful of the potential continuing threat posed by demersal longline fisheries, the IUCN in 2007 down-listed the species from Vulnerable to Near Threatened.

The southern giant petrel is also listed in Annex 1 of the Agreement on the Conservation of Albatrosses and Petrels (ACAP), a multilateral agreement which seeks to conserve albatrosses and petrels by coordinating international activity to mitigate known threats to their populations, and in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals.

In East Antarctica, southern giant petrels are uncommon as they are at the southern limit of their distribution range. The most recent estimate of the population at the Frazier Islands was 274 breeding pairs in 2005/06. Colonies are found on all three of the islands in the group (Nelly, Dewart and Charlton Islands – Map B), the largest being located on Dewart Island.

The Frazier Islands are one of only four known breeding localities of southern giant petrels around the coastline of continental Antarctica and are the only known site in nearly 3000km of coastline between Davis station and Dumont d'Urville. The other three continental breeding colonies are located near the Australian stations of Mawson (Giganteus Island, Rookery Islands, ASPA 102) and Davis (Hawker Island, ASPA 167), and near the French station Dumont d'Urville (Pointe-Géologie Archipelago, ASPA 120). The southern giant petrels on the Antarctic continent comprise less than 1% of the global breeding population. The current population for continental Antarctica is estimated at approximately 320 pairs, comprised of 3 pairs on Giganteus Island, 25 pairs on Hawker Island, 16 pairs at Pointe Géologie archipelago (Terre Adélie) and approximately 270 pairs on the Frazier Islands. However, incidental observations at the coast near Mawson station indicate there may be additional colonies that have not been discovered yet.

The breeding season for southern giant petrels at the Frazier Islands usually commences between late October and mid November, and extends through to April with the birds' departure northward for the winter. Banded chicks from the Frazier Islands dispersed throughout the Southern Hemisphere and have previously been recovered in New Zealand, South America, Easter Island, and South Africa within nine months of departure.

2. Aims and objectives

Management of the Frazier Islands aims to:

- minimise human disturbance to the breeding colonies of southern giant petrels to assist further the protection of the population in the wild;
- conserve the Frazier Islands as a reference area for future comparative studies with other breeding populations of southern giant petrels; and
- minimise the possibility of the introduction of alien plants, animals and microbes to the Frazier Islands.

3. Management activities

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

- where practicable, at least one research visit should be conducted to census the southern giant petrels and other seabird populations in each 5 year period, to enable assessment of

breeding populations. These visits should be conducted by a team including at least one bird biologist associated with a national Antarctic programme or someone with relevant scientific skills and experience;

- information about the location of the Area and the restrictions that apply shall be produced and prominently displayed at Casey station. Copies of this Management Plan shall be available at the station. Informative material and the Management Plan shall be provided to ships visiting the vicinity;
- the Management Plan shall be reviewed at least every five years and updated/modified as required.

4. Period of designation

Designation is for an indefinite period.

5. Maps

- Map A: Windmill Islands, showing location of the Frazier Islands and protected areas within the region.

  Map specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84
- Map B: Frazier Islands, Antarctic Specially Protected Area showing distribution of seabird nesting sites.

  Map Specifications:

  Projection: UTM Zone 49

  Horizontal Datum: WGS84

6. Description of the Area

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

The Frazier Islands are located at latitude 66°14'S, longitude 110°10'E (Map A). The three islands (Nelly, Dewart and Charlton) lie in the eastern part of Vincennes Bay approximately 16km to the west north west of Casey station. Nelly Island is the largest of the three islands (approximately 0.35km² in area), and was named for the presence of several colonies of southern giant petrels or "Nellies". The Area comprises the entire terrestrial area of the three islands, with the seaward boundary at the low water mark (Map B). The total area of the Antarctic Specially Protected Area is approximately 0.6km². There are no boundary markers.

Nelly Island supports the largest and most varied avian community of the three islands, with records indicating that snow petrels (*Pagodroma nivea*), cape petrels (*Daption capense*), Antarctic petrels (*Thalassoica antarctica*), Wilson's storm-petrels (*Oceanites oceanicus*), southern fulmars (*Fulmarus glacialoides*), and South Polar skuas (*Catharacta maccormicki*) all nest on the island. South Polar skua nests have also been observed on Dewart Island (Appendix 2, Map B).

In 1961/62, 100 Adélie penguin (*Pygoscelis adeliae*) nests were reported in one colony on Nelly Island. During the 1989/90 season, three colonies were recorded on the north-west ridge of Nelly Island with a total of 554 nests. The increase corresponds with those recorded for most other Adélie penguin populations in the Windmill Islands region during the period from 1959/60 to 1989/90. In the 2001/02 season, approximately 1,000 pairs were estimated to be nesting on Nelly Island. A brief inspection of the Adélie penguin colonies in 2005/06 suggested that the breeding population continues to increase.

Recorded sightings of marine mammals at the Frazier Islands are scarce. In 1968 three Weddell seals (*Leptonychotes weddellii*) were observed on an ice floe located between Nelly and Dewart Islands. An Orca (killer whale: *Orcinus orca*) was also sighted offshore from the islands during the same year, and a small pod was sighted during 2005/06. A few leopard seals (*Hydrurga leptonyx*) were sighted on sea ice near Nelly Island and a small number of Weddell seals were recorded on the sea ice near the Frazier Islands in the 2001/02 season (Appendix 2).

Vegetation recorded at Nelly Island comprises at least 11 species, including lichens *Buellia frigida*, *Usnea antarctica*, *Rhizoplaca melanophthalma*, *Candelariella flava*· a terrestrial alga *Prasiola crispa*, an indeterminate green crust which is thought to be 'a mixture of fungal hyphae and green alga *Desmococcus olivaceus*', and several species of snow algae including *Chlorococcum* sp., *Chloromonas polyptera*, *Chlorosarcina antarctica*, *Prasiococcus calcarius* (Appendix 2). There are no published records of terrestrial invertebrates on the Frazier Islands; however, no surveys have been undertaken.

The topography of the Frazier Islands is characterised by steep cliffs rising from the sea. The highest peak on Nelly Island is approximately 65 metres. There is a broad 'U' shaped ice-filled valley on both Nelly and Dewart Islands.

The geology of the Frazier Islands is typical of the Windmill Islands group and is characterised by the layered schists and finely crenulated gneisses of the Windmill metamorphics. The geological character of the Frazier Islands developed as a result of two phases of metamorphosis at 1400-1310 Ma and about 1200 Ma of pre-existing volcanics, greywacke and shale. On Nelly Island there are steep cliffs of biotite and gneiss. A red sandstone erratic is located in the 'U' shaped valley on Nelly Island below the 30m contour. Highly polished glacial striae in the gneisses provide evidence of recent glaciation and indicate the former direction of ice flow of 265º and 280º T. Surface sediments consist of fine gravelly sand located in bedrock depressions.

The climate at the Frazier Islands is characteristic of that experienced at the Windmill Islands and other Antarctic coastal locations in the region. At Casey station, located 16 kilometres to the east south eastESE of the Frazier Islands group, mean temperatures are 0.3°C for the warmest month and –14.9°C for the coldest month. Precipitation is low and the high albedo of the exposed rock surfaces results in persistent ice-free areas that provide attractive nesting sites for the avifauna.

6(ii) Special zones within the Area

There are no special zones within the Area.

6(iii) Location of structures within the Area

There are no structures within or adjacent to the Area and none are to be erected.

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

The following Protected Areas are located on the Budd Coast near the Frazier Islands (see Map A):

- ASPA No 135, North-east Bailey Peninsula (66°17'S, 110°32'E);

- ASPA No 136, Clark Peninsula (66º15'S, 110º36'E); and
- ASPA No 103, Ardery Island and Odbert Island (66º22'S, 110º30'E).

7. Permit conditions

Entry to the Area is prohibited except in accordance with a Permit issued by an appropriate national authority.

Permits shall include a condition requiring that the Permit or a copy shall be carried at all times when within the Area. Additional conditions, consistent with the objectives and provisions of the Management Plan, may be included by the issuing authority. The principal Permit Holder for each Permit issued should be required to submit to the Permit issuing authority a visit report detailing all activities undertaken within the Area, and include all census data obtained during the visit.

7(i) Access to and movement within or over the Area

- Vehicles are prohibited within the Area.
- The only permitted access to the Frazier Islands is by watercraft. Landings must be made at the designated sites as marked on Map B. Boats used to visit the islands must be left at the shoreline and movement within the Area is by foot only. Only personnel who are required to carry out scientific/management work in the Area should leave the landing site;
- Any movement within the Area is to be consistent with the minimum approach distances to nesting birds specified in Appendix 3. Persons shall not approach closer than is necessary to obtain census data or biological data from any nesting southern giant petrels, and in no case closer than 20m;
- To reduce disturbance to wildlife, noise levels including verbal communication are to be kept to a minimum. The use of motor-driven tools and any other activity likely to generate noise and thereby cause disturbance to nesting birds is prohibited within the Area during the breeding period for southern giant petrels (1 October to 30 April);
- Landing of aircraft in the Area is prohibited at any time; and
- Clothing (particularly all footwear) and field equipment shall be thoroughly cleaned before entering the Area.

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

Permits to enter the Area during the non-breeding period for southern giant petrels (1 May to 30 September), may be issued for compelling scientific research that cannot be undertaken elsewhere, or for essential management purposes consistent with the objectives and provisions of this Management Plan. Permits are only to be issued for activities that will not jeopardise the ecological or scientific values of the Area, or interfere with existing scientific studies.

Permits to enter the Area during the breeding period for southern giant petrels (1 October to 30 April) may be issued for the purpose of conducting censuses. The Permit issuing authority is to refer to the provision under the first dot point of section 3 of this Management Plan when issuing Permits. Wherever practicable, censuses are to be conducted from outside the giant petrel colonies. In most cases there are vantage points from where the nesting giant petrels may be counted. Access to the Area should be limited to the minimum amount of time reasonably required to undertake the census. Boat operators and other support personnel should remain at the landing site for safety reasons.

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

No permanent structures are to be erected in the Area.

7(iv) Location of field camps

Camping is prohibited in the Area except in an emergency.

7(v) Restrictions on materials and organisms that may be brought into the Area

- Fuel is not to be depoted on the islands. Boat refuelling is permitted at shoreline landing sites. A small amount of fuel is permitted for an emergency stove.
- The only poultry products that may be brought into the Area are pasteurized egg powder, stock cubes, powdered soups and canned soups .
- No herbicides or pesticides are to be brought into the Area.
- Any chemical which may be introduced for compelling scientific purposes as authorised in a Permit shall be removed from the Area, at or before the conclusion of the activity for which the Permit was granted. The use of radio-nuclides or stable isotopes is prohibited.
- No animals, plant material or microorganisms shall be deliberately introduced into the Area and precautions shall be taken against accidental introductions. All equipment and clothing should be thoroughly cleaned before entering the Area.

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

Taking of, or harmful interference with, native flora and fauna, is prohibited unless specifically authorised by permit issued in accordance with Article 3 of Annex II to the Protocol on Environmental Protection to the Antarctic Treaty.

Disturbance of southern giant petrels should be avoided at all times. Visitors should be alert to changes in wildlife behaviour, especially changes in posture or vocalisaton. If birds are showing signs of wanting to leave the nest, all persons should retreat immediately.

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

Material may only be collected or removed from the Area as authorised in a Permit and should be limited to the minimum necessary to meet scientific or management needs.

Material of human origin likely to compromise the values of the Area, which was not brought into the Area by the Permit Holder or otherwise authorised, may be removed unless the impact of the removal is likely to be greater than leaving the material *in situ*. If such material is found, the appropriate national authority must be notified. Where possible, photographic documentation should be obtained and included with site visit report.

7(viii) Disposal of waste

No wastes, including human wastes, are to be deposited or left in the Area.

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

A census of southern giant petrels should be conducted at least once in each 5 year period. Censuses of other species may be undertaken during these visits provided no additional disturbance is caused to the southern giant petrels.

All GPS data obtained for specific sites of long-term monitoring shall be registered in the Antarctic Master Directory, through the appropriate national authority.

7(x) Requirements for reports

Parties should ensure that the principal Permit Holder for each permit issued submits to the appropriate national authority a report on activities undertaken. Such reports should include, as appropriate, the information identified in the Visit Report form contained in Appendix 4 of 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 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, for the purpose of any review of the Management Plan and in organising the scientific use of the Area. A copy of the report should be forwarded to the Party responsible for development of the Management Plan to assist in management of the Area, and monitoring of bird populations. Additionally, visit reports should provide detailed information on census data, locations of any new colonies or nests not previously recorded, a brief summary of research findings and copies of photographs taken of the Area.

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Appendix 1: Southern giant petrel populations at the Frazier Islands, Antarctica

Note: To the extent possible, each observation below has been validated by a review of the primary data records. The comments indicate where variations from published literature were identified. Further consideration of each observation would be required before using and of these data in analyses.

Date	Nelly Island	Dewart Island	Charlton Island	Source	Comment
21, 22 Jan. 1956	250 N	not visited	not visited	Unpublished data: J Bunt 2008 pers. comm.; Law (1958)	Counted at four separate rookeries on higher parts of Nelly Island. Notes say that most nests contained chicks. Many of these nests could be old nests.
24-5 Jan. 1959	25 N	not visited	not visited	Unpublished data: Bird log Magga Dan-Wilkes & Oates Land Voyage (Jan-Mar 1959); Unpublished data: Biology report for Wilkes, (1959/60-1960-61), R Penny.	It is not clear whether these observations are all chicks, but Penny comments that some of them were chicks.
15 Dec. 1959	60 A	not visited	not visited	Unpublished data: Biology report for Wilkes, Appendix F (1961) M. Orton; Creuwels *et al*. (2005)	20 other birds were associated with nests.
12 Feb. 1960	46 C	not visited	not visited	Unpublished data: Biology report for Wilkes, (1959/60-1960-61), R Penny; Unpublished data: Biology report for Wilkes, Appendix F (1961) M. Orton.	Orton reports that there were 47 chicks on Nelly Island when in fact it was 46 (Penny 1960).
15 Dec. 1960	not visited	60 N	not visited	Unpublished data: Biology report for Wilkes, Appendix F (1961) M. Orton; Woehler *et al.* (1990); Creuwels *et al*. (2005)	20 other birds were associated with nests. Woehler *et al*. (1990) and Creuwels *et a*l. (2005) have both quoted directly from R. Penny's unpublished report.
22 Mar. 1961	34 C	10 C	no data	Unpublished data: Biology report for Wilkes, Appendix F (1961) M. Orton; Unpublished data: Biology: Giant petrel Wilkes report (1961); Creuwels *et al*. (2005)	All chicks observed on Nelly Island were banded. Only a subset of the chicks observed at Dewart Island were banded.
23 Nov. 1962	11 eggs	not visited	not visited	Unpublished data: Davis and Mawson station biology log records (1962)	This count appears to have been a subset of the population only.

Date	Nelly Island	Dewart Island	Charlton Island	Source	Comment
21 Jan. 1964	10 C	not visited	not visited	Unpublished data: Wilkes station report, biology log records (1964), L.G. Murray	Birds were observed on the north-east ridge, with about 20 occupied nests in this area, and more on the lower area on the southern side of the ridge. There were many old and uninhabited nests.
7 Mar. 1968	72	no data	not visited	Unpublished data: Bird Log Nella Dan (1967-8) Vol. 1; Shaughessey (1971); Murray & Luders (1990)	This count is the total for all four rookeries found on Nelly Island. There is a map of their location in the field notes.
20, 21 Jan. 1972	52 C	53 C	10-20 N (aerial survey only)	Murray (1972)	Land survey primarily for banding. 49 of 52 chicks seen were banded on Nelly Island. 51 of 53 chicks seen were banded on Dewart Island. Please note counts quoted in Murray & Luders (1990) are incorrect.
31 Jan. 1974	27 BC	no data	no data	Unpublished data: Biology report for Casey (1974) A. Jones; Murray & Luders (1990); Woehler *et al*. (1990); Creuwels *et al*. (2005)	All peer-reviewed papers appear to have reported an incorrect count of a total of 76, however only 27 chicks were banded in this season.
13-17 Feb. 1977	27 C	43 C	no data	Cowan (1979); Murray & Luders (1990); Woehler et al. (1990); Creuwels et al. (2005)	All peer-reviewed papers appear to have reported the wrong count. Cowan is the original reference, where data has gone straight to peer-reviewed publication.
25 Jan. 1978	48 C	48 C	6 C	Cowan (1979); Murray & Luders (1990); Woehler *et al*. (1990); Creuwels *et al*. (2005)	
30 Jan., 2 Feb. 1979	35 (method unknown)	46 (method unknown)	5 (method unknown)	Murray & Luders (1990); Woehler *et al*. (1990); Creuwels *et al*. (2005)	The earliest reference to this work is Murray & Luders (1990), but they did not do the original counts. For Nelly, Woehler *et al*. (1990) and Creuwels *et al*. (2005) further report the chick count as 37 and not 35 as reported in Murray & Luders (1990). Further work is required to know which figure reflects the correct count. K. de Jong's original data is unable to be located.

Date	Nelly Island	Dewart Island	Charlton Island	Source	Comment
18 Jan. 1980	43 C	10 (method unknown)	no data	Murray & Luders (1990); Woehler *et al*. (1990); Creuwels *et al*. (2005)	Original data not located. Creuwels *et al*. (2005) note that the census data from Dewart Island and Charlton Island are confused with banding data.
28 & 29 Nov. 1983	63 AON	68 AON	9 AON	Unpublished data: Casey station report (1983); Woehler *et al*. (1990); Creuwels *et al*. (2005)	Woehler *et al*. (1990) conducted the survey.
25 & 26 Jan 1984	52 (method unknown)	not visited	not visited	Woehler *et al*. (1990); Creuwels *et al*. (2005)	Original data not located.
3, 6 Mar. 1985	64 C	69 C	no data	Woehler *et al*. (1990); Crewels *et al*. (2005)	Original data not located.
14 Feb. 1986	59	50	9	Woehler *et al*. (1990); Creuwels *et al*. (2005)	Census type cannot be attributed to any island. Original data not located.
23 Dec. 1989	73 AON	106 AON	14 AON	Woehler *et al*. (1990); Creuwels *et al*. (2005)	Apparently occupied nests (AON) may contain a proportion of failed or non-breeding nest sites (Creuwels *et al*. 2005).
18 Feb. 1996	11 C	not visited	not visited	Creuwels *et al*. (2005)	
23 Dec. 1997	96 AON	104 AON	21 AON	Creuwels *et al*. (2005)	Apparently occupied nests (AON) may contain a proportion of failed or non-breeding nest sites (Creuwels *et al*. 2005).
26 Dec. 1998	95 AON	103 AON	17 AON	Creuwels *et al*. (2005)	
14 Mar. 1999	66 C	82 C	11 C	Creuwels *et al*. (2005)	
26 Dec. 2001	93 AON	135 AON	20 AON	Creuwels *et al*. (2005)	
14 Dec. 2005	110 ON	149 ON	25 ON	Unpublished data: E.J. Woehler	

'A' = count of adults, 'AON' = apparently occupied nests, 'BC' = banded chicks, 'C' = count of chicks, 'N' = count of nests, 'ON' = occupied nests

Appendix 2: Biota recorded at the Frazier Islands

	Nelly Island	Dewart Island	Charlton Island
Seabirds			
Adélie penguins (*Pygoscelis adeliae*)	c.>1400 (2005)		
Antarctic petrel (*Thalassoica antarctica*)	P		
Cape petrel (*Daption capense*)	P	P (2001)	P (2001)
Snow petrel (*Pagodroma nivea*)	P	P	
Southern giant petrel (*Macronectes giganteus*)	100N (2005)	149N (2005)	25N (2005)
Wilson's storm petrels (*Oceanites oceanicus*)	P		
South Polar skua (*Catharacta maccormicki*)	1N (2005)	1N (2005)	
Southern fulmar (*Fulmarus glacialoides*)	P	P	
Mammals			
Leopard seal (*Hydrurga leptonyx*)	X (2001)		
Weddell seal (*Leptonychotes weddellii*)	X (2001)		
Orca (killer whale: *Orcinus orca*)	Small pod observed close to island (2005)		
Lichens			
Buellia frigida	R		
Usnea antarctica	R		
Rhizoplaca melanophthalma	R		
Candelariella flava	R	R	
Moss			
Bryum pseudotriquetrum	R		
Algae			
Indeterminate green crust	F		
Prasiola crispa	F		
Chlorococcum sp.	F		
Chloromonas polyptera	F		
Chlorosarcina antarctica	R		
Prasiococcus calcarius	F		

Census data for breeding seabirds provided where available, 'P' indicates recorded breeding seabirds but no census data available, 2001 indicates observations in December 2001 visit, 2005 indicates observations from December 2005 visit, 'X' indicates recorded on or near the island, 'N' a count of nests, 'R' rare, and 'F' frequent. Data compiled from records held by the Australian Antarctic Data Centre, ANARE records 1968, Appendix 1, Melick *et al*. 1994, Seppelt, R. pers. comm., Ling, H. pers. comm., Woehler, E.J. pers. comm., and Woehler, E.J. and Olivier, F. unpublished data (December 2001), Woehler, E.J. unpublished data (December 2005).

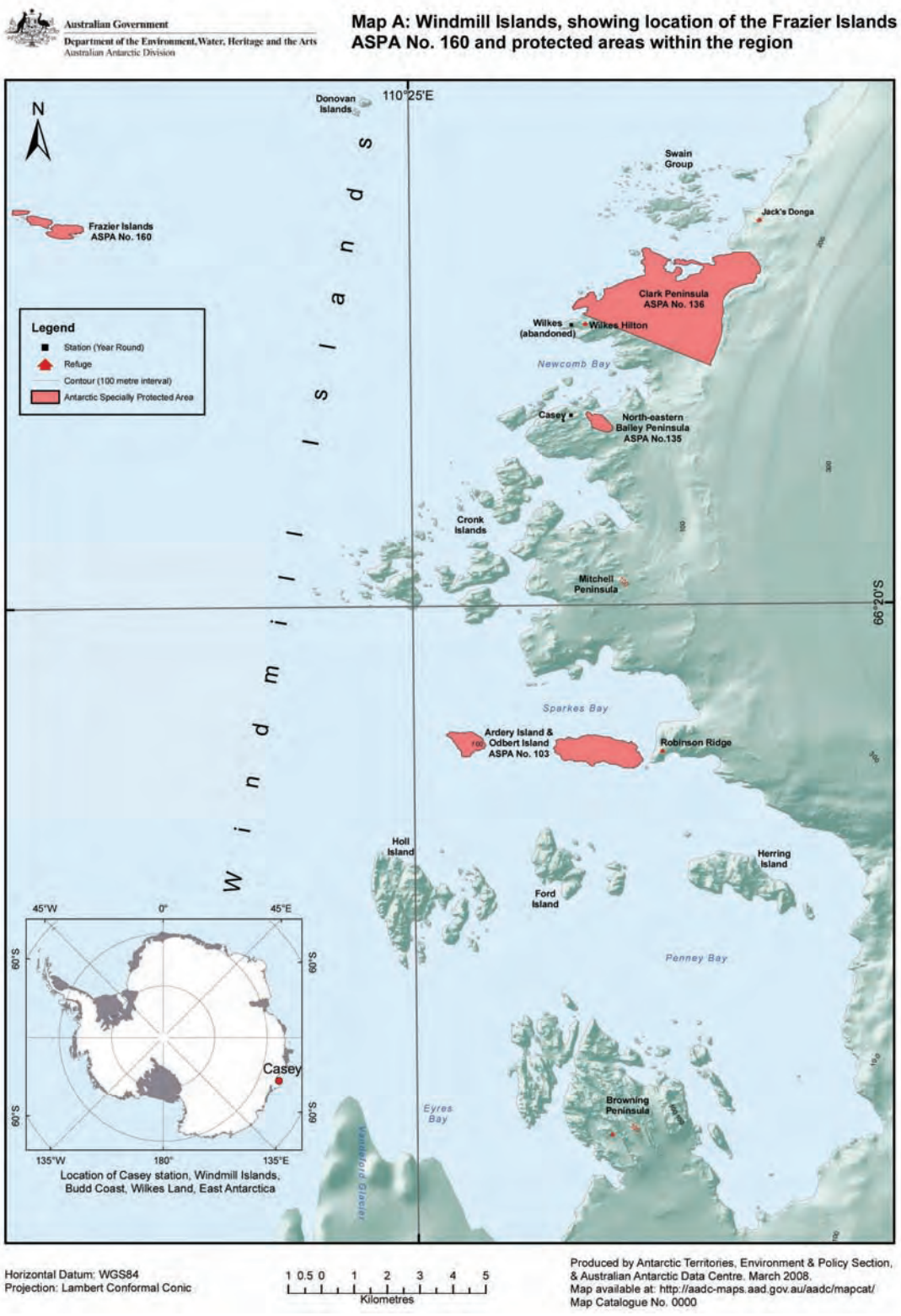
Appendix 3: Minimum wildlife approach distances

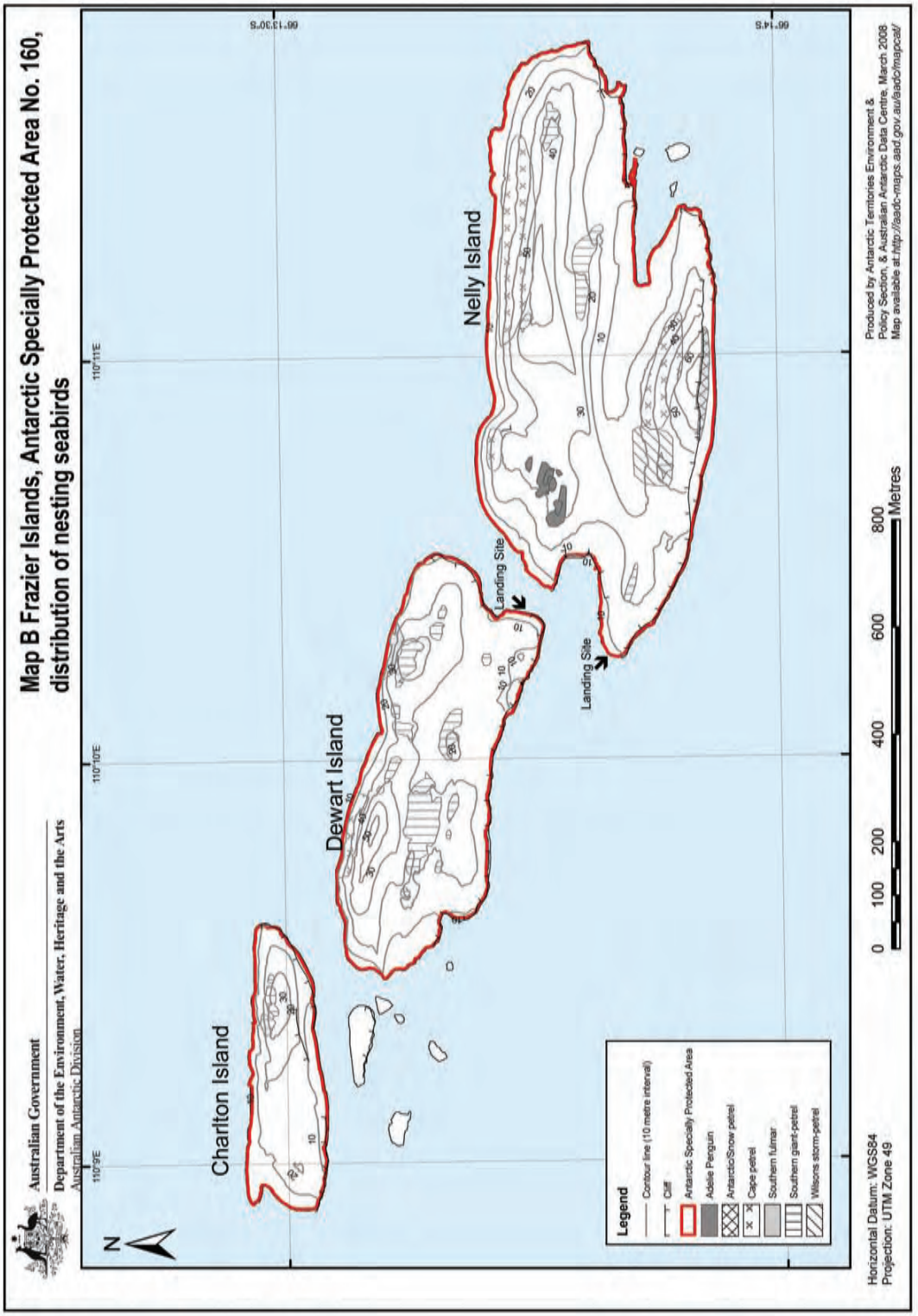
The minimum (closest) approach distances as set out below are to be maintained when approaching any wildlife on, or in the vicinity of the Frazier Islands unless a closer approach distance is authorised in a Permit. These distances are a guide and should an activity disturb wildlife, a greater distance is to be maintained.

Species	**Approach distance (on foot)**
Giant petrels	100m
Other penguins in colonies Moulting penguins Seals with pups Seal pups on their own Prions and petrels on nest South polar skua on nest	30m
Penguins on sea ice Non breeding adult seals	5m

Notes:

1. Includes cape petrels, Antarctic petrels, Wilson's storm petrels, snow petrels and southern fulmars.


Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Map A: Windmill Islands, showing location of the Frazier Islands ASPA No. 160 and protected areas within the region
N
Donovan Islands
110°25'E
Swain Group
Jack's Donga
Frazier Islands ASPA No. 160
Clark Peninsula ASPA No. 136
Wilkes (abandoned)
Wilkes Hilton
Legend
Station (Year Round)
Refuge
Contour (100 metre interval)
Antarctic Specially Protected Area
Newcomb Bay
Casey
North-eastern Bailey Peninsula ASPA No.135
Windmill Islands
Cronk Islands
Mitchell Peninsula
66°20'S
Sparkes Bay
Ardery Island & Odbert Island ASPA No. 103
Robinson Ridge
Holl Island
Herring Island
Ford Island
Penney Bay
Browning Peninsula
Eyres Bay
Vanderford Glacier
45°W
0°
45°E
60°S
135°W
180°
135°E
Casey
Location of Casey station, Windmill Islands, Budd Coast, Wilkes Land, East Antarctica
Horizontal Datum: WGS84
Projection: Lambert Conformal Conic
1 0.5 0 1 2 3 4 5
Kilometres
Produced by Antarctic Territories, Environment & Policy Section, & Australian Antarctic Data Centre. March 2008.
Map available at: http://aadc-maps.aad.gov.au/aadc/mapcat/
Map Catalogue No. 0000


Map B Frazier Islands, Antarctic Specially Protected Area No. 160, distribution of nesting seabirds
Australian Government
Department of the Environment, Water, Heritage and the Arts
Australian Antarctic Division
Charlton Island
Dewart Island
Nelly Island
Landing Site
Landing Site
Legend
Contour line (10 metre interval)
Cliff
Antarctic Specially Protected Area
Adelie Penguin
Antarctic/Snow petrel
Cape petrel
Southern fulmar
Southern giant-petrel
Wilsons storm-petrel
0 100 200 400 600 800
Metres
Horizontal Datum: WGS84
Projection: UTM Zone 49
Produced by Antarctic Territories Environment & Policy Section, & Australian Antarctic Data Centre, March 2008
Map available at:http://aadc-maps.aad.gov.au/aadc/mapcat/

Measure 14 (2008)

Antarctic Specially Protected Area No 161 (Terra Nova Bay, Ross Sea): 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 (2003), which designated Terra Nova Bay, Ross Sea, as Antarctic Specially Protected Area No 161, and annexed a management plan for the site;

Noting that the Committee for Environmental Protection has endorsed a revised Management Plan for ASPA 161;

Desiring to replace the existing Management Plan for ASPA 161 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 161: Terra Nova Bay, Ross Sea, which is annexed to this Measure, be approved;

2) the Management Plan for ASPA 161 annexed to Measure 2 (2003) shall cease to be effective.

Management Plan for Antarctic Specially Protected Area No 161

TERRA NOVA BAY, ROSS SEA

1. Description values to be protected

A coastal marine area encompassing 29.4km^2 between Adélie Cove and Tethys Bay, Terra Nova Bay, is proposed as an Antarctic Specially Protected Area (ASPA) by Italy on the grounds that it is an important littoral area for well-established and long-term scientific investigations. The Area is confined to a narrow strip of waters extending approximately 9.4km in length immediately to the south of the Mario Zucchelli Station (MZS) and up to a maximum of 7km from the shore. No marine resource harvesting has been, is currently, or is planned to be, conducted within the Area, nor in the immediate surrounding vicinity. The site typically remains ice-free in summer, which is rare for coastal areas in the Ross Sea region, making it an ideal and accessible site for research into the near-shore benthic communities of the region. Extensive marine ecological research has been carried out at Terra Nova Bay since 1986/87, contributing substantially to our understanding of these communities which had not previously been well-described.

High diversity at both species and community levels make this Area of high ecological and scientific value. Studies have revealed a complex array of species assemblages, often co-existing in mosaics (Cattaneo-Vietti, 1991; Sarà *et al.*, 1992; Cattaneo-Vietti *et al*., 1997; 2000b; 2000c; Gambi *et al.*, 1997; Cantone *et al.*, 2000). There exist assemblages with high species richness and complex functioning, such as the sponge and anthozoan communities, alongside loosely structured, low diversity assemblages. Moreover, the sponge and anthozoan communities at Terra Nova Bay show an unique structure and long-term transects have been established to monitor changes in coastal benthic communities, both natural and human-induced. The presence of a population of Adélie penguins (*Pygoscelis adeliae*) at Adélie Cove allows assessment of the effects of this colony on the adjacent marine environment (Povero *et al.*, 2001).

It is important to protect the Area as far as possible from direct human impacts in order that it can be used to monitor potential impacts arising from activities at the nearby permanent scientific station of MZS at Terra Nova Bay (Mauri *et al.*, 1990; Berkman & Nigro, 1992; Focardi *et al.*, 1993; Minganti *et al.*, 1995; Bruni *et al.*, 1997; Nonnis Marzano *et al.*, 2000). The high ecological and scientific values derived from the diverse range of species and assemblages, in particular through the collection of extensive data on these features, together with the vulnerability of the Area to disturbance by pollution, over-sampling and alien introductions, are such that the Area requires long-term special protection.

2. Aims and objectives

Management at Terra Nova Bay aims to:

- avoid degradation of, or substantial risk to, the values of the Area by preventing unnecessary human disturbance to the Area;
- allow scientific research on the ecosystem, in particular on the marine species assemblages, while ensuring it is protected from oversampling or other possible scientific impacts;
- allow other scientific research and support activities provided they are for compelling reasons which cannot be served elsewhere;

- maintain long-term monitoring sites to evaluate natural changes in marine communities;
- monitor the effects of the research station and its associated activities on the marine ecosystem;
- minimise the possibility of introduction of alien plants, animals and microbes to the Area;
- allow visits for management purposes in support of the aims of the Management Plan.

3. Management activities

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

- A map 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, at MZS (Italy);
- A sign illustrating the location and boundaries with clear statements of entry restrictions shall be installed at MZS at a prominent location;
- Buoys, or other markers or structures erected 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 to assess whether the Area continues to serve the purposes for which it was designated and whether management and maintenance measures are adequate.

4. Period of designation

Designated for an indefinite period.

5. Maps and photographs

- Map 1: Terra Nova Bay, Antarctic Specially Protected Area No 161, bathymetric map.

  Map specifications: Projection: UTM Zone 58S; Spheroid: WGS84. Bathymetric contour interval 50m. Land contours and coast derived from 1:50,000 Northern Foothills Satellite Image Map (Frezzotti *et. al.* 2001). Bathymetry within ASPA derived from high resolution sidescan sonar data surveyed by Kvitek, 2002. Bathymetry outside of ASPA supplied by Italian Hydrographic Office 2000. Marine data collected under Terra Nova Bay marine protected area Project (PNRA 1999-2001).

  Inset 1: The location of Terra Nova Bay in Antarctica.

  Inset 2: Terra Nova Bay location map, showing the region covered by Map 1, stations, and sites of nearby protected areas.

6. Description of the Area

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

The designated Area is situated in Terra Nova Bay, between the Campbell Glacier Tongue and Drygalski Ice Tongue, Victoria Land. The Area is confined to a narrow strip of coastal waters to the south of MZS (Italy), extending approximately 9.4km in length and generally within 1.5 – 7km of

the shore, comprising an area of 29.4km^2 (Map 1). No marine resource harvesting has been, is currently, or is planned to be, conducted within the Area, nor in the immediate surrounding vicinity.

The western boundary of the Area is defined as the mean high water mark along the coastline extending between 74°42’57"S in the north (2.3km south of MZS) and 74°48’00"S in the south (the southern shore of Adélie Cove), and includes the intertidal zone (Map 1). The northern boundary of the Area is defined as the 74°42’57"S line of latitude, extending from the coast 1.55km eastward to the 164°10’00"E line of longitude. The boundary position may be recognised near the shore by the presence of a large and distinctive offshore rock in the northernmost cove on the coast south of MZS, which is an unique feature on this stretch of coast. The southern boundary is defined as the 74°48’00"S line of latitude, extending from the coast 3.63km eastward to the 164°10’00"E line of longitude. The boundary position may be recognised visually as being at the southern shore of the mouth of Adélie Cove, immediately south of a distinctive rocky outcrop at the base of the coastal cliffs. The eastern boundary of the Area is defined as the 164°10’00"E line of longitude extending between 74°42’57"S in the north and 74°48’00"S in the south.

The coastline of Terra Nova Bay is characterised predominantly by rocky cliffs, with large boulders forming occasional ‘beaches’ (Simeoni *et al.*, 1989). In the sheltered areas, the soft bottom begins at a depth of 20–30m. The tidal range is 1.5–2m and pack ice approximately 2–2.5m thick covers the sea surface for 9–10 months of the year (Stocchino & Lusetti, 1988; 1990). Data available for the summer period suggest that ocean currents in the Area are likely to be slow and to flow generally in a north-south direction. Along the coastline of the Area there are two main coves; the larger Adélie Cove in the south and a smaller cove around 3km to its north. The sea floor substrate of the smaller consists of pebbles of various sizes, while Adélie Cove is characterised by fine-grained, muddy sediments. An Adélie penguin (*Pygoscelis adeliae*) colony is situated at Adélie Cove, with a 1991 population of 7899 breeding pairs. Outside of the coves, the sea floor characteristics and benthic species assemblages are relatively homogenous along the coastal length of the Area, and are observed to vary more particularly with the vertical gradient.

An aerial survey on cetacean species, conducted in the coastal area surrounding the Italian Station Mario Zucchelli in summer 2004, showed the presence of killer whale (*Orcinus orca* (L.)), types B and C and minke whale (*Balaenoptera bonaerensis* Burmeister) (Lauriano et al., 2007a; 2007b; Lauriano pers.com.).

The seafloor within the Area is primarily granitic rock, with softer substrates composed of coarse sands or gravels. In the supralittoral zone, only cyanobacteria and diatoms colonise the hard substrates, while the intertidal zone (1.5–2.0m wide) has, in the most sheltered areas, a high coverage of the green alga *Urospora penicilliformis* and *Prasiola crispa* (Cormaci *et al.*, 1992b). Below the tidal zone, down to 2–3m depth, the community is very poor, due to the persistent presence and scouring action of pack ice, and is mainly composed of epilithic diatoms and the crustacean amphipod *Paramoera walkeri*. Immediately deeper, rocks can be fully colonised by the red alga *Iridaea cordata* (Cormaci *et al.*, 1996), frequently found with *Plocamium cartilagineum*, to a depth of 12m (Gambi *et al.*, 1994; 2000a). At this level large sessile animals such as *Alcyonium antarcticum* and *Urticinopsis antarctica* can be occasionally observed, while frequent are the asteroid *Odontaster validus* and the echinoid *Sterechinus neumayeri*. *Phyllophora antarctica* is another red alga forming expanded mats from 12 to 25m depth, often fully colonised by sessile organisms, mainly hydroids (Cerrano *et al.*, 2000c, Puce *et al.*, 2002), serpulids and bryozoans (*Celleporella antarctica* and *Harpecia spinosissima*). The upper algal belts represent shelter and a food source for diversified and abundant communities of mobile fauna. Numerous invertebrates, such as the polychaete *Harmothoe brevipalpa*, the mollusc *Laevilittorina antarctica*, the crustacean amphipod *Paramoera walkeri* and the isopod *Nototanais dimorphus* feed on these algal species and can be very abundant. On rocky bottoms in

deeper layers, the algal colonisation is replaced by a calcareous crustose coralline alga (*Clathromorphum lemoineanum*) on which sea-urchins feed.

The soft bottoms from 20–40m depth are coarse sands and gravels, where the community is characterised by the mollusc bivalve *Laternula elliptica* and the polychaete *Aglaophamus ornatus* (Nephtiidae). The bivalve *Yoldia eightsi* is abundant in fine-sand sediments.

Between 30–70m, the substrate becomes finer and is completely colonised by the bivalve *Adamussium colbecki*, the shells of which are colonised by a micro-community comprising mainly forams, bryozoans (*Aimulosia antarctica, Arachnopusia decipiens, Ellisina antarctica, Micropora brevissima*) and the spirorbid *Paralaeospira levinsenii* (Albertelli *et al.*, 1998; Ansell *et al.*, 1998; Chiantore *et al.*, 1998; 2000; 2001; 2002; Vacchi *et al.*, 2000a; Cerrano *et al.*, 2001a; 2001b). In this region, large predators such as the gastropod *Neobuccinum eatoni* and the nemertean *Parborlasia corrugatus* are frequent. The echinoid *Sterechinus neumayeri* and the starfish *Odontaster validus* are still very frequent at all depths on both hard and mobile substrates (Chiantore *et al.*, 2002; Cerrano *et al.*, 2000b).

Below 70–75m down to 120–130m depth, heterogeneous substrates allow hard- and soft-bottom communities to coexist. On the sparse rocky outcrops the encrusting algae disappear and the benthic communities are dominated by the sessile zoobenthos. This diversified filter feeding assemblage is mainly characterised by sponges and anthozoans, while in soft sediments detritus-feeder polychaetes and bivalves dominate. Among sponges, which can reach very high biomass values, A*xociella nidificata, Calyx arcuarius, Gellius rudis, Phorbas glaberrima, Tedania charcoti*, are very abundant (Sarà *et al.*, 1992; 2002; Gaino *et al.*, 1992; Cattaneo-Vietti *et al.*, 1996; 2000c; Bavestrello *et al.*, 2000; Cerrano *et al.*, 2000a). Numerous invertebrates constitute an important component of this assemblage which develops down to 120-140m depth. These include the epibiont polychaete *Barrukia cristata* on Thouarellid gorgonians, crustacean peracarids, pycnogonids, mollusc opisthobranchs (*Austrodoris kerguelenensis, Tritoniella belli*) (Cattaneo-Vietti, 1991; Gavagnin *et al.*, 1995) and bivalves, ophiuroids and holothuroids, bryozoans, and the endobionts. The conspicuous sponge spicule mats found at these depths underline the important role of sponges in this area, besides the one played by diatoms, in determining the sediment texture and silica content. A peculiar community, dominated by polychaetes and by the bivalve *Limatula hodgsoni*, can be associated with these mats.

Below 130m the hard substrates become very sparse and are mainly colonised by the polychaete *Serpula narconensis* (Schiaparelli *et al.*, 2000) and several bryozoans (*Arachnopusia decipiens, Ellisina antarctica*, *Flustra angusta*, *F. vulgaris* and *Isoschizoporella similis*). The dominant muddy bottoms are instead characterised by tubicolous polychaetes (Gambi *et al.*, 2000b), mainly *Spiophanes*. Much deeper, at about 150-200m depth, brachiopods and various species of bivalves characterise the environment on small gravels as well as on the soft bottom (Cattaneo-Vietti *et al.*, 2000b). The great heterogeneity of these substrates contributes to the creation of communities with considerable species richness, diversity and biomass.

Finally, the faunal assemblage of the Area includes notothenioid fishes, represented especially by species of the *Trematomus* group, including *T. bernacchi*, *T. pennelli*, *T. hansoni* and *T. loennbergii*. These exert an important role in benthic food webs as consumers of many invertebrate species, mainly crustaceans and polychaetes (Vacchi *et al.*, 1991; 1992; 1994a; 1994b; 1995; 1997; 2000b; La Mesa *et al.*, 1996; 1997; 2000; Guglielmo *et al.*, 1998).

The platelet ice occurring at Terra Nova Bay in early spring has been shown to house an important nursery for the Antarctic silverfish, *Pleuragramma antarcticum*, a key organism in the ecology of Antarctic food webs (La Mesa et al., 2004; Vacchi et al., 2004). The platelet ice environment has strong prooxidant characteristics at the beginning of austral spring, and the marked responsiveness of antioxidant defences represents a fundamental strategy for *P. antarcticum* (Regoli et al., 2005b).

The elevated prooxidant challenge, to which these organisms are naturally adapted, also influences the susceptibility of *P. antarcticum* toward prooxidant chemicals of anthropogenic origin (Regoli et al., 2005b).

Oxyradical metabolism and antioxidant defenses have a fundamental role in several marine invertebrates, fish and penguins from Terra Nova Bay, representing important counteractive strategies toward, i.e. extreme environmental conditions, marked seasonal fluctuations of biotic and abiotic factors, symbiotic relationships, specific physiological features, long-term protection of biological macromolecules and aging (Regoli et al., 1997a,b; 2000a,b, 2002, 2004; Corsolini et al., 2001; Cerrano et al., 2004).

Susceptibility to oxidative stress is of particular value also for monitoring the impact of human activities and cellular responses to pollutants were characterized in key Antarctic organisms developing a wide array of biomarkers sensitive to biological disturbance (Focardi et al., 1995; Regoli et al., 1998; Jimenez et al., 1999; Regoli et al., 2005a; Benedetti et al., 2005, 2007; Canapa et al., 2007; Di Bello et al., 2007). At the moment, there is no evidence of polluted areas in Terra Nova Bay, but organisms are exposed to a naturally elevated bioavailability of cadmium causing tissue concentrations generally 10-50 folds higher than those typical of temperate species (Mauri et al., 1990; Nigro et al., 1992, 1997; Canapa et al., 2007). Despite elevated levels of this element do not cause direct adverse effects to the organisms, nonetheless the environmental characteristics of Terra Nova Bay influence the responsiveness of organisms to other chemicals with important implications for monitoring the impact of anthropogenic pressure or accidental spills (Regoli et al., 2005a); in particular, elevated level ofcadmium at Terra Nova Bay modulates bioaccumulation and metabolism of polycyclic aromatic hydrocarbons and of organochlorine xenobiotics in local marine organisms suggesting also endocrine effects from the chronic exposure to this element (Regoli et al., 2005a; Benedetti et al., 2007; Canapa et al., 2007).

Human impacts within the Area are believed to be minimal and confined to those arising from the nearby Terra Nova Bay Station and scientific work conducted within the Area. The station can accommodate approximately 80 people, has facilities for helicopter operations and a jetty for the docking of small boats. Fuel used at the station is a light petroleum diesel, stored in three double-walled steel tanks with a total capacity of 1.8 million litres. Fuel is transferred to the station annually from resupply ship either via hoses routed across sea ice or via barge when sea ice is not present. Station waste water, purified by a biological plant, is discharged into the sea adjacent to the station on the eastern side of the peninsula on which the station is located, 2.3km from the northern boundary of the Area. Combustible rubbish generated at the Station is incinerated and the smoke washed and filtered with water. This water is discharged into the waste water treatment plant at time intervals which intovary with incinerator usage. An atmospheric monitoring facility (locally referred to as ‘Campo Icaro’) is situated approximately 650m north of the northern boundary of the Area and 150m from the shore: no wastes are discharged from this facility. A support ship regularly visits Mario Zucchelli Station during the summer, and there are occasional visits by tourist ships. These usually stop offshore several kilometres to the north of the Area.

6(ii) Restricted zones within the Area

None.

6(iii) Structures within and near the Area

There are no structures within the Area. The nearest structure is the atmospheric monitoring facility (locally referred to as ‘Campo Icaro’) 650m north of the northern boundary of the Area, while Mario Zucchelli Station (74°41’42"S, 164°07’23"E) is situated on a small peninsula on the coast adjacent to Tethys Bay, a further 1.65km to the north.

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

ASPA No 118, summit of Mount Melbourne, is a terrestrial site situated 45km to the NE, which is the only other protected area within close proximity.

7. Permit conditions

Entry into the Area is prohibited except in accordance with a Permit issued by the 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 purposes which cannot be served elsewhere; and/or
- it is issued for essential management purposes consistent with plan objectives such as inspection, maintenance or review;
- the actions permitted will not jeopardise the values of the Area;
- any management activities are in support of the objectives of the Management Plan;
- the actions permitted are in accordance with the Management Plan;
- the Permit, or an authorised copy, shall be carried by the holderwithin 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, land, over sea ice or by air. There are no specific restrictions on routes of access to and movement within the Area, although movements should be kept to the minimum necessary consistent with the objectives of any permitted activities and every reasonable effort should be made to minimise disturbance. Anchoring is prohibited within the Area. There are no overflight restrictions within the Area and aircraft may land by Permit when sea ice conditions allow. Ship or small boat crew, or other people on small boats or ships, are prohibited from moving beyond the immediate vicinity of their vessel unless specifically authorized by Permit.

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

- Scientific research or essential operational activities that will not jeopardise the values of the Area;
- Essential management activities, including monitoring;
- Activities that involve trawling, dragging, grabbing, dredging, or deployment of nets within the Area should be undertaken with great care because of the sensitivity of the rich bottom communities to disturbance: before Permits are granted for such activities careful consideration should be given to the impact of such activities on the ecosystem under special protection versus the expected scientific or management benefits, with consideration given to alternative, more selective and less-invasive, sampling methods;
- The appropriate authority should be notified of any activities/measures undertaken that were not included in the authorized Permit.

7(iii) Installation, modification or removal of structures

Structures or scientific equipment shall not be installed within the Area except as specified in a Permit. All markers, structures or scientific equipment installed in the Area shall be clearly identified

by country, name of the principal investigator and year of installation. All such items should be made of materials that pose minimal risk of contamination of the Area. Removal of specific equipment for which the Permit has expired shall be a condition of the Permit. Permanent installations are prohibited.

7(iv) Location of field camps

None within the Area. An occasional field camp has been positioned on the beach at Adélie Cove.

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. Poultry products, including food products containing uncooked dried eggs, shall not be released into the Area. No herbicides or pesticides shall be introduced 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 used in the minimum quantities necessary to achieve the purpose of the activity for which the Permit was granted. Such chemicals shall be used with due regard for the values of the Area. All materials shall be stored and handled so that risk of their accidental introduction into the environment is minimized. Where practical, materials introduced shall remain for a stated period only and shall be removed at or before the conclusion of that stated period. If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material *in situ*. The appropriate authority should be notified of any materials released that were not included in the authorized Permit.

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

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

7(vii) Collection 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 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. All samples collected shall be described in terms of their type, quantity and the location from which they were taken. This information shall held in an archive accessible at MZS in order to maintain a record of usage that will assist assessment of the impacts of sampling activities and in the planning of future sampling. 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.

7(viii) Disposal of waste

All wastes, including all human wastes, shall be removed from the Area.

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

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

Any specific sites of long-term monitoring that are vulnerable to inadvertent disturbance should be appropriately marked on site where practical and, as appropriate, on maps of the Area.

To help maintain the ecological and scientific values of the marine communities found within the Area, visitors shall take special precautions against marine pollution. Of concern are the release or spillage of hydrocarbons from ships, and biological introductions. To minimize the risk of such pollution, visitors shall ensure that sampling equipment or markers brought into the Area are clean. Vessels that are found to show fuel leakage, or a significant risk of such leakage, are prohibited from entering the Area. If a fuel leak from a vessel is discovered while within the Area, the vessel shall leave the Area unless the leak can be promptly stopped. Handling of fuels and oil within the Area shall be the minimum necessary consistent with meeting the objectives of the permitted activities.

7(x) Requirements for reports

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

8. References

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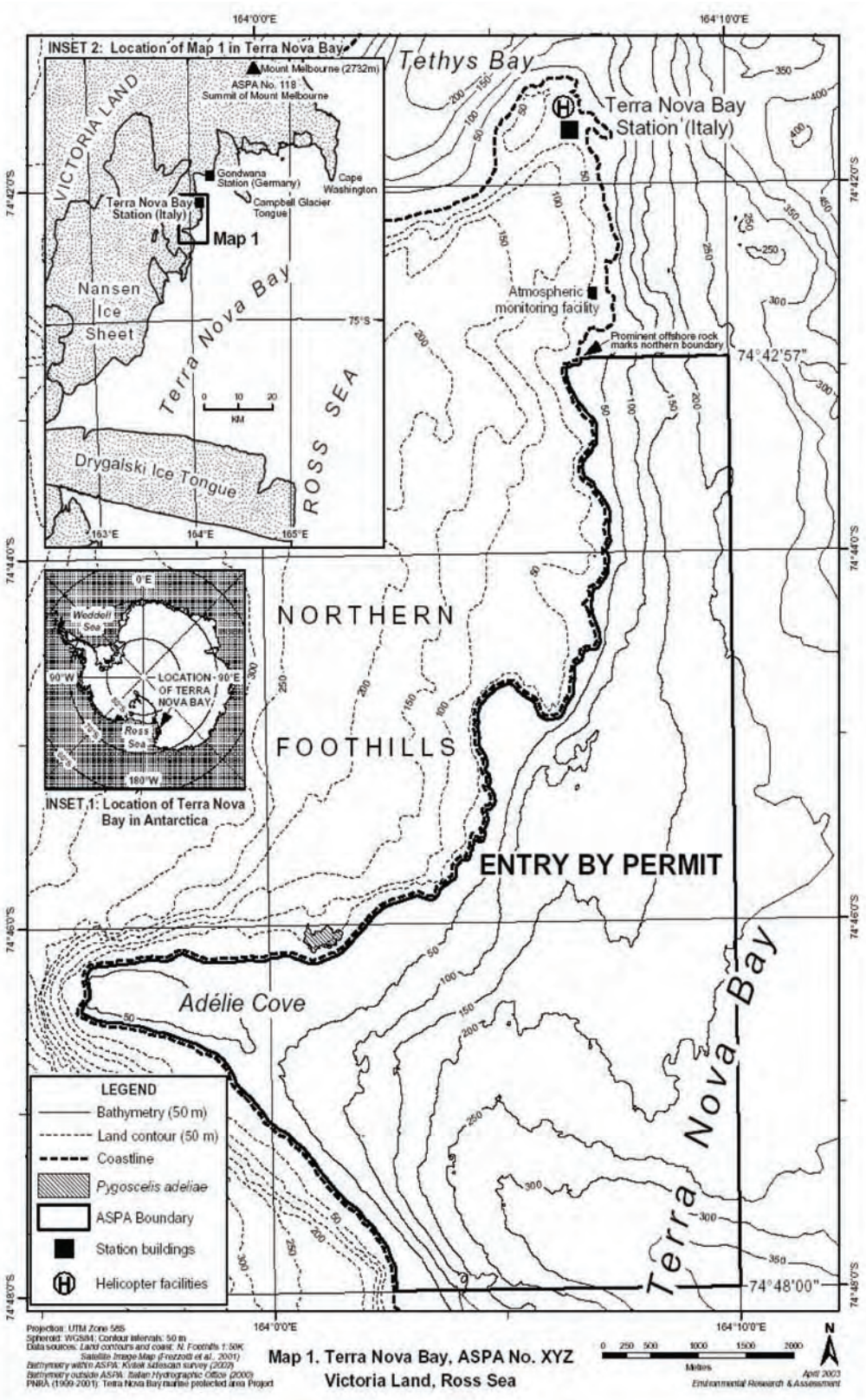

Map 1. Terra Nova Bay, ASPA No. XYZ
Victoria Land, Ross Sea

Appendix 1: Recent bibliography and other publications of interest for the research activities in the Terra Nova Bay

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Appendix 2

During 2003-2005 Italian Antarctic Campaign have been issued the permits for the sampling of following marine species into the Terra Nova Bay marine ASPA No 161:

Organism denomination	**Amount Kg**	**Sampling System**
Adamussium colbecki	150	Dedge Grab, Sediment cores
Odontaster validus	50	" " "
Laternula elliptica	20	" " "
Sterechinus neumayeri	150	" " "
Ophionotus victorie	10	" " "
Neobuccinum eatoni	20	" " "
Pycnogonidis-picnogonoidi	20	" " "
Gymnodraco acuticeps Phyllophora	20	" " "
Iridea cordata	10	" " "
Various species fishes	70	Hook and line fishing and nets

Sampling and studies activities into the ASPA area have been carried out in 40 different times for a total of 145 hours of work.

ANNEX B

Decisions

Decision 1 (2008)

Amendment to the Rules of Procedure

The Representatives,

Recalling Decision 3 (2005) containing the Revised Rules of Procedure of the Antarctic Treaty Consultative Meeting;

Desiring to amend Rule 11 of the Rules of Procedure to establish:

a) a more formal process for the way in which a Working Group or committee is established; and

b) the manner by which a Chair of a Working Group or committee is appointed;

Decide that the "Revised Rules of Procedure (2008)" annexed to this Decision shall replace the Rules of Procedure for Antarctic Treaty Consultative Meetings attached to Decision 3 (2005).

REVISED RULES OF PROCEDURE (2008)

1. Meetings held pursuant to Article IX of the Antarctic Treaty shall be known as Antarctic Treaty Consultative Meetings. Contracting Parties entitled to participate in those Meetings shall be referred to as "Consultative Parties"; other Contracting Parties which may have been invited to attend those Meetings shall be referred to as "non-Consultative Parties". The Executive Secretary of the Secretariat of the Antarctic Treaty shall be referred to as the "Executive Secretary".
2. The Representatives of the Commission for the Conservation of Antarctic Marine Living Resources, the Scientific Committee on Antarctic Research and the Council of Managers of National Antarctic Programs, invited to attend those Meetings in accordance with Rule 31, shall be referred to as "Observers".

Representation

3. Each Consultative Party shall be represented by a delegation composed of a Representative and such Alternate Representatives, Advisers and other persons as each State may deem necessary. Each non-Consultative Party which has been invited to attend a Consultative Meeting shall be represented by a delegation composed of a Representative and such other persons as it may deem necessary within such numerical limit as may from time to time be determined by the Host Government in consultation with the Consultative Parties. The Commission for the Conservation of Antarctic Marine Living Resources, the Scientific Committee on Antarctic Research and the Council of Managers of National Antarctic Programs shall be represented by their respective Chairman or President, or other persons appointed to this end. The names of members of delegations and of the observers shall be communicated to the Host Government prior to the opening of the Meeting.
4. The order of precedence of the delegations shall be in accordance with the alphabet in the language of the Host Government, all delegations of non-Consultative Parties following after those of Consultative Parties, and all delegations of observers following after non-Consultative Parties.

Officers

5. A Representative of the Host Government shall be the Temporary Chairman of the Meeting and shall preside until the Meeting elects a Chairman.
6. At its inaugural session, a Chairman from one of the Consultative Parties shall be elected. The other Representatives of Consultative Parties shall serve as Vice-Chairmen of the Meeting in order of precedence. The Chairman normally shall preside at all plenary sessions. If he is absent from any session or part thereof, the Vice-Chairmen, rotating on the basis of the order of precedence as established by Rule 4, shall preside during each such session.

Secretariat

7. The Executive Secretary shall act as Secretary to the Meeting. He or she shall be responsible, with the assistance of the Host Government, for providing secretariat services for the meeting, as provided in Article 2 of Measure 1 (2003), as provisionally applied by Decision 2 (2003) until Measure 1 becomes effective.

Sessions

8. The opening plenary session shall be held in public; other sessions shall be held in private, unless the Meeting shall determine otherwise.

Committees and Working Groups

9. The Meeting, to facilitate its work, may establish such committees as it may deem necessary for the performance of its functions, defining their terms of reference.
10. The committees shall operate under the Rules of Procedure of the Meeting, except where they are inapplicable.
11. Working Groups may be established by the Meeting or its committees to deal with various agenda items. The Chair(s) of the Working Group(s) will be appointed at the beginning of the Meeting or committee meeting. The Chair(s) will serve no more than four consecutive Meetings or committee meetings, unless otherwise decided. At the conclusion of each Meeting, the Meeting may decide as a preliminary matter which Working Group(s) are proposed for the subsequent Meeting.

Conduct of Business

12. A quorum shall be constituted by two-thirds of the Representatives of Consultative Parties participating in the Meeting.
13. The Chairman shall exercise the powers of his office in accordance with customary practice. He shall see to the observance of the Rules of Procedure and the maintenance of proper order. The Chairman, in the exercise of his functions, remains under the authority of the Meeting.
14. Subject to Rule 28, no Representative may address the Meeting without having previously obtained the permission of the Chairman and the Chairman shall call upon speakers in the order in which they signify their desire to speak. The Chairman may call a speaker to order if his remarks are not relevant to the subject under discussion.
15. During the discussion of any matter, a Representative of a Consultative Party may rise to a point of order and the point of order shall be decided immediately by the Chairman in accordance with the Rules of Procedure. A Representative of a Consultative Party may appeal against the ruling of the Chairman. The appeal shall be put to a vote immediately, and the Chairman's ruling shall stand unless over-ruled by a majority of the Representatives of Consultative Parties present and voting. A Representative of a Consultative party rising to a point of order shall not speak on the substance of the matter under discussion.
16. The Meeting may limit the time to be allotted to each speaker and the number of times he may speak on any subject. When the debate is thus limited and a Representative has spoken his allotted time, the Chairman shall call him to order without delay.
17. During the discussion of any matter, a Representative of a Consultative Party may move the adjournment of the debate on the item under discussion. In addition to the proposer of the motion, Representatives of two Consultative Parties may speak in favour of, and two against, the motion, after which the motion shall be put to the vote immediately. The Chairman may limit the time to be allowed to speakers under this Rule.
18. A Representative of a Consultative Party may at any time move the closure of the debate in the item under discussion, whether or not any other Representative has signified his wish to speak. Permission to speak on the closure of the debate shall be accorded only to Representatives of two Consultative Parties opposing the closure, after which the motion shall be put to the vote immediately. If the Meeting is in favour of the closure, the Chairman

shall declare the closure of the debate. The Chairman may limit the time to be allowed to speakers under this Rule. This Rule shall not apply to debate in committees.

19. During the discussion of any matter, a Representative of a Consultative Party may move the suspension or adjournment of the Meeting. Such motions shall not be debated, but shall be put to the vote immediately. The Chairman may limit the time to be allowed to the speaker moving the suspension or adjournment of the Meeting.
20. Subject to Rule 15, the following motions shall have precedence in the following order over all other proposals or motions before the Meeting:
    a) to suspend the Meeting;
    b) to adjourn the Meeting;
    c) to adjourn the debate on the item under discussion;
    d) for the closure of the debate on the item under discussion.
21. Decisions of the Meeting on all matters of procedure shall be taken by a majority of the Representatives of Consultative Parties participating in the Meeting, each of whom shall have one vote.

Languages

22. English, French, Russian and Spanish shall be the official languages of the Meeting.
23. Any Representative may speak in a language other than the official languages. However, in such cases he shall provide for interpretation into one of the official languages.

Measures, Decisions and Resolutions and Final Report

24. Without prejudice to Rule 21, Measures, Decisions and Resolutions, as referred to in Decision 1 (1995), shall be adopted by the Representatives of all Consultative Parties present and will thereafter be subject to the provisions of Decision 1 (1995).
25. The final report shall also contain a brief account of the proceedings of the Meeting. It will be approved by a majority of the Representatives of Consultative Parties present and shall be transmitted by the Executive Secretary to Governments of all Consultative and non-Consultative Parties which have been invited to take part in the Meeting for their consideration.
26. Notwithstanding Rule 25, the Executive Secretary, immediately following the closure of the Consultative Meeting, shall notify all Consultative Parties of all Measures, Decisions and Resolutions taken and send them authenticated copies of the definitive texts in an appropriate language of the Meeting. In respect to a Measure adopted under the procedures of Article 6 or 8 of Annex V of the Protocol, the respective notification shall also include the time period for approval of that Measure.

Non-Consultative Parties

27. Representatives of non-Consultative Parties, if invited to attend a Consultative Meeting, may be present at:
    a) all plenary sessions of the Meeting; and
    b) all formal Committees or Working Groups, comprising all Consultative Parties, unless a Representative of a Consultative Party requests otherwise in any particular case.
28. The relevant Chairman may invite a Representative of a non-Consultative Party to address the Meeting, Committee or Working group which he is attending, unless a Representative

of a Consultative Party requests otherwise. The Chairman shall at any time give priority to Representatives of Consultative Parties who signify their desire to speak and may, in inviting Representatives of non-Consultative Parties to address the Meeting, limit the time to be allotted to each speaker and the number of times he may speak on any subject.

29. Non-Consultative Parties are not entitled to participate in the taking of decisions.

30.

a) Non-Consultative Parties may submit documents to the Secretariat for distribution to the Meeting as information documents. Such documents shall be relevant to matters under Committee consideration at the Meeting.

b) Unless a Representative of a Consultative Party requests otherwise such documents shall be available only in the language or languages in which they were submitted.

Antarctic Treaty System Observers

31. The observers referred to in Rule 2 shall attend the Meetings for the specific purpose of reporting on:

a) in the case of the Commission for the Conservation of Antarctic Marine Living Resources, developments in its area of competence.

b) in the case of the Scientific Committee on Antarctic Research:

i) the general proceedings of SCAR;

ii) matters within the competence of SCAR under the Convention for the Conservation of Antarctic Seals;

iii) such publications and reports as may have been published or prepared in accordance with Recommendations IX-19 and VI-9 respectively.

c) in the case of the Council of Managers of National Antarctic Programs, the activities within its area of competence.

32. Observers may be present at:

a) the plenary sessions of the Meeting at which the respective Report is considered;

b) formal committees or working groups, comprising all Contracting Parties, at which the respective Report is considered, unless a Representative of a Consultative Party requests otherwise in any particular case.

33. Following the presentation of the pertinent Report, the relevant Chairman may invite the Observer to address the Meeting at which it is being considered once again, unless a Representative of a Consultative Party requests otherwise. The Chairman may allot a time limit for such interventions.

34. Observers are not entitled to participate in the taking of decisions.

35. Observers may submit their Report and/or documents relevant to matters contained therein to the Secretariat, for distribution to the Meeting as Working Papers.

Agenda for Consultative Meetings

36. At the end of each Consultative Meeting, the Host Government of that Meeting shall prepare a preliminary agenda for the next Consultative Meeting. If approved by the Meeting, the preliminary agenda of the next Meeting shall be annexed to the Final Report of the Meeting.

37. Any Contracting Party may propose supplementary items for the preliminary agenda by informing the Host Government for the forthcoming Consultative Meeting no later than

180 days before the beginning of the Meeting; each proposal shall be accompanied by an explanatory memorandum. The Host Government shall draw the attention of all Contracting Parties to this Rule no later than 210 days before the Meeting.

38. The Host Government shall prepare a provisional agenda for the Consultative Meeting. The provisional agenda shall contain:

    a) all items on the preliminary agenda decided in accordance with Rule 36; and

    b) all items the inclusion of which has been requested by a Contracting Party pursuant to Rule 37.

    Not later than 120 days before the Meeting, the Host Government shall transmit to all the Contracting Parties the provisional agenda, together with explanatory memoranda and any other papers related thereto.

Experts from International Organisations

39. At the end of each Consultative Meeting, the Meeting shall decide which international organisations having a scientific or technical interest in Antarctica shall be invited to designate an expert to attend the forthcoming Meeting in order to assist it in its substantive work.

40. Any Contracting Party may thereafter propose that an invitation be extended to other international organisations having a scientific or technical interest in Antarctica to assist the Meeting in its substantive work; each such proposal shall be submitted to the Host Government for that Meeting not later than 180 days before the beginning of the Meeting and shall be accompanied by a memorandum setting out the basis for the proposal.

41. The Host Government shall transmit these proposals to all Contracting Parties in accordance with the procedure in Rule 38. Any Consultative Party which wishes to object to a proposal shall do so not less than 90 days before the Meeting.

42. Unless such an objection has been received, the Host Government shall extend invitations to international organisations identified in accordance with Rules 39 and 40 and shall request each international organisation to communicate the name of the designated expert to the Host Government prior to the opening of the Meeting. All such experts may attend the Meeting during consideration of all items, except for those items relating to the operation of the Antarctic Treaty System which are identified by the previous Meeting or upon adoption of the agenda.

43. The relevant Chairman, with the agreement of all the Consultative Parties, may invite an expert to address the meeting he is attending. The Chairman shall at any time give priority to Representatives of Consultative Parties or non-Consultative Parties or Observers referred to in Rule 31 who signify their desire to speak, and may in inviting an expert to address the Meeting limit the time to be allotted to him and the number of times he may speak on any subject.

44. Experts are not entitled to participate in the taking of decisions.

45.

    a) Experts may, in respect of the relevant agenda item, submit documents to the Secretariat for distribution to the Meeting as information documents.

    b) Unless a Representative of a Consultative Party requests otherwise, such documents shall be available only in the language or languages in which they were submitted.

46. Intersessionally, the Executive Secretary shall, within his or her competence as established under Measure 1 (2003) and associated instruments that govern the operation of the Secretariat, consult the Consultative Parties, when legally required to do so under relevant instruments of the ATCM and when the exigencies of the circumstances require action to be taken before the opening of the next ATCM, using the following procedure:

    a) The Executive Secretary shall transmit the relevant information and any proposed action to all Consultative Parties through contact persons designated by them, indicating an appropriate date by which responses are requested;
    b) The Executive Secretary shall ensure that all Consultative Parties acknowledge the receipt of such transmission, and shall also ensure the list of contact persons is current;
    c) Each Consultative Party shall consider the matter and communicate their reply, if any, to the Executive Secretary through their respective contact person by the specified date;
    d) The Executive Secretary after informing the Consultative Parties of the result of the consultations, may proceed to take the proposed action if no Consultative Party has objected; and
    e) The Executive Secretary shall keep a record of the intersessional consultations, including their results and the actions taken by him/her and shall reflect these results and actions in his or her report to the ATCM for its review.

Amendments

47. These Rules of Procedure may be amended by a two-thirds majority of the Representatives of Consultative Parties participating in the Meeting. This Rule shall not apply to Rules 24, 27, 29, 34, 39-42, 44, and 46, amendments of which shall require the approval of the Representatives of all Consultative Parties present at the Meeting.

Decision 2 (2008)

Approval of the Secretariat's Financial Report for 2006/07 and Programme and Budget for 2008/09

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);

Noting the Financial Regulations for the Secretariat of the Antarctic Treaty adopted by Decision 4 (2003);

Decide to:

1) Approve the Audited Financial Report for 2006/07 (SP 3 rev. 2 Annex A) annexed to this Decision (Annex A);
2) Take note of the Secretariat's Report on its work in 2006/07 (SP 3 rev. 2) and of the Provisional Financial Report for 2007/08 (SP 3 rev. 2 Annex B) annexed to this Decision (Annex B);
3) Approve the Secretariat's Work Programme and Budget for 2008/09 (SP 4 rev. 3) annexed to this Decision (Annex C).

Antarctic Treaty Secretariat

Financial Report 2006/07

1. Statement of income and expenditure for all funds for the period starting 1 April 2006 and ending 31 March 2007

	Budget	Actual
INCOME		
Contributions 2006/07[1]	$739,270	$686,862
Late contributions 2005/06[2]		$125,567
Other income[3]		$23,652
TOTAL	**$739,270**	**$836,081**
EXPENDITURE		
1. Appropriation for Salaries		
Executive staff salaries	$203,877	$203,919
General staff salaries	$88,457	$88,190
Total Salaries	**$292,334**	**$292,109**

[1] See below under **3b**.
[2] See below under **3a**.
[3] Other Income 2006/07:

Bank Interest Earned	$1,507
Fixed Term Deposit Interest	$22,108
Fiscal Interest	$37
	$23,652

2. Appropriation for Goods and Services		
Accounting and auditing	$15,490	$13,280
Communications[4]	$12,400	$19,231
Data entry, proofreading[5]	$19,000	$9,790
Documentation services[6]	$9,000	$8,968
Legal advice	$4,800	$3,853
Miscellaneous	$8,000	$38,892
Office expenses[7]	$26,500	$11,319
Printing and copying	$20,000	$30,416
Representation	$11,502	$9,540
Training	$4,000	$1,854
Translation and editing[8]	$134,118	$158,115
Travel costs[9]	$81,520	$94,786
Total Goods and Services	**$346,330**	**$400,044**
3. Appropriation for Equipment		
Documentation material	$9,000	$1,143
Furniture, equipment[10]	$13,880	$274
IT equipment, software	$40,800	$46,650
Web and Software development	$21,000	$13,679
Total Equipment	**$84,680**	**$61,746**
TOTAL	**$723,344**	**$753,899**
To Staff Replacement Fund	$12,500	$12,500
To Staff Termination Fund	$3,426	$3,426
To Working Capital Fund		$8,024
TOTAL EXPENDITURE	**$739,270**	**$777,849**
Surplus 2006/07		$58,232
US grant[11]	$21,000	$20,680
Expenditure	$21,000	$20,680

[4] The expenditures on postage and shipment were higher than foreseen due to rising costs and shipment of eleven different Site Guidelines, as opposed to four in the year before. The higher than expected costs associated with the Site Guidelines also caused higher expenses for printing and for translations - see below.

[5] The amount of documents added to the ATCM Documents Database was less than expected.

[6] Total expenditures on documentation services were $19,182; $8,968 out of the regular budget and $10,214 out of the US grant (see note 10 and 11).

[7] The sum budgeted for office expenses mistakenly included expenses for computer maintenance. Expenditures for this purpose have been moved to the item 'IT equipment' below.

[8] The amount of intersessional translation was higher than expected due to the Site Guidelines. Costs were also adversely affected because of the depreciation of the dollar towards the euro.

[9] Travel expenditures were higher than foreseen due to rising international travel costs.

[10] Expenditure on plant and equipment:

Disbursements during 2006/07	$26,069
Depreciation	$4,924
Credited to assets	-$20,253
Net expenditures on plant and equipment	**$10,740**
(US grant)	$10,466
(Regular budget)	$274

[11] The US made a contribution of $ 30,000 to a Special Fund in lieu of its 2004/05 contribution. $ 9,320 of this was received during FY 2005/06, see Financial Report 2005/06, footnote 15. $10,466 was spent on plant and equipment (note 10) and $10,214 on documentation services (note 6).

2. Statement of financial position on 31 March 2007

ASSETS	
Current assets	
Cash and cash equivalents[12]	$1,071,782
Credits[13]	$71,745
Total	**$1,143,527**
Non-current assets	
Plant and equipment[14]	$47,555
Total	**$47,555**
Total Assets	**$1,191,082**
LIABILITIES	
Current liabilities	
Payables[15]	$609
Unearned income[16]	$243,043
Total	**$243,652**
Non-current liabilities	
Staff Termination Fund	$10,278
Staff Replacement Fund	$37,500
Total	**$47,778**
Total Liabilities	**$291,430**
NET ASSETS	**$899,652**
Represented by accumulated funds	
General Fund	$112,092
Future Meeting Fund	$400,000
Working Capital Fund	$128,788
Total Accumulated Funds	**$640,880**

[12] Cash and equivalents

Cash	$39
BNA US Dollar account	$1,044,884
BNA Argentine Peso account	$26,859
Total	**$1,071,782**

[13] Credits

Prepayments to suppliers	$72,088
VAT to be reimbursed	-$347
Turnover tax to be reimbursed	$4
Total	**$71,745**

[14] Plant and equipment

Plant and equipment 31 March 2006	$28,986
Expenditures credited to assets	$20,253
Depreciations	-$4,924
Expenditures on books	$3,240
Plant and equipment 31 March 2007	**$47,555**

[15] Payables consisted of a PayPal account ($15) and $594 owing to suppliers.

[16] I.e. contributions for 2007/08 received during 2006/07, see under **3c**.

3. Contributions

a. Late contributions for 2005/6, received during 2006/07	
Belgium	$31,927
Brazil	$31,927
Korea	$19,145
Spain	$10,641
Ukraine	$31,927
Total	**$125,567**
b. Contributions 2006/07	
Received during 2005/06	
Australia	$33,486
Finland	$22,217
Germany	$21,000
Italy	$28,978
Netherlands	$25,598
New Zealand	$33,486
Russia	$22,217
United States	$33,486
Total	$220,468
Received during 2006/07	
Argentina	$33,486
Belgium	$22,217
Brazil	$22,217
Bulgaria	$18,836
Chile	$25,598
China	$25,598
Ecuador	$18,836
France	$33,486
India	$25,598
Japan	$33,486
Korea	$22,217
Norway	$33,486
Peru	$18,836
Poland	$22,217
South Africa	$25,598
Spain	$25,598
Sweden	$25,598
United Kingdom	$33,486
Total	$466,394
Total 2006/07	**$686,862**
c. Contributions 2007/8	
Finland	$23,222
France	$34,547
India	$26,756
Netherlands	$26,756
New Zealand	$35,002
Norway	$35,002
Sweden	$26,756
United States	$35,002
Total	**$243,043**

d. Share of contributing Parties in the surplus 2006/07[17]

Argentina	A	$33,486	$521
Australia	A	$33,486	$521
Belgium	D	$22,217	$345
Brazil	D	$22,217	$345
Bulgaria	E	$18,836	$293
Chile	C	$25,598	$398
China	C	$25,598	$398
Ecuador	E	$18,836	$293
Finland	D	$22,217	$345
France	A	$33,486	$521
Germany	B	$21,000	$326
India	C	$25,598	$398
Italy	B	$28,978	$450
Japan	A	$33,486	$521
Korea	D	$22,217	$345
Netherlands	C	$25,598	$398
New Zealand	A	$33,486	$521
Norway	A	$33,486	$521
Peru	E	$18,836	$293
Poland	D	$22,217	$345
Russia	D	$22,217	$345
South Africa	C	$25,598	$398
Spain	C	$25,598	$398
Sweden	C	$25,598	$398
United Kingdom	A	$33,486	$521
United States	A	$33,486	$521
Total		**$686,862**	**$10,677**

Johannes Huber,
Executive Secretary

Juan Carlos Brizuela
Accountant

[17] The surplus credited to the Parties is the available surplus, that is the net surplus of 2006/07 ($58,232) - expenditures resulting in fixed assets ($47,555), see note 14.

INDEPENDENT AUDITOR'S REPORT

XXXI Antarctic Treaty Consultative Meeting 2008, Kiev Ukraine.

Report on the Financial Statements

We have audited the accompanying financial statements of the Antarctic Treaty Secretariat, which comprise the Statement of Income and Expenditure and the Statement of Financial Position and other explanatory notes for the period started at April 1st and ended at March 31st, 2007.

Management's Responsibility for the Financial Statements

The Antarctic Treaty Secretariat is responsible for the preparation and fair presentation of these financial statements in accordance with International Financial Reporting Standards and specific regulations of the Antarctic Treaty Consultative Meetings. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing and the Annex to Decision 5 of the XXVIII Antarctic Treaty Consultative Meeting which describes the tasks to be carried out by the external audit. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances.

SIGEN

An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.
We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Antarctic Treaty Secretariat as of March 31st, 2007, and of its financial performance for the period then ended in accordance with International Financial Reporting Standards.

Dr. Edgardo De Rose
Contador Público
Tº182 Fº 195 CPCECABA

Buenos Aires, 28st may, 2006

Sindicatura General de la Nación
Av. Corrientes 381 Buenos Aires
República Argentina

Annex B- Provisional Financial Report for the Financial Year 2007/08

1. Statement of income and expenditure for all funds for the period 1 April 2007 to 31 March 2008

INCOME	**Budget**	**Actual**
Accumulated surplus		$335,210[1]
Contributions 2006/7		$22,661
Contributions 2007/8	$772,730	$656,163
Other[2]		$29,506
	$772,730	**$708,330**
SALARIES		
Executive Staff	$210,733	$210,740
General Staff	$124,042	$123,884
TOTAL	**$334,775**	**$334,624**
GOODS AND SERVICES		
Audit	$7,185	$0
Data entry	$5,870	$4,349
Documentation services	$8,600	$1,795
Legal advice	$4,800	$4,257
Miscellaneous	$7,074	$8,416
Office expenses	$13,700	$9,137
Postage	$11,900	$5,836
Printing	$30,700	$28,704
Representation	$7,600	$7,272
Telecom	$7,000	$11,148
Training	$6,500	$4,623
Translation	$152,600	$187,152
Travel	$99,500	$130,349
TOTAL	**$363,029**	**$403,039**
EQUIPMENT		
Documentation	$4,000	$382
Furniture	$5,500	$10,687
IT Equipment	$35,000	$15,947
Development	$14,500	$14,213
TOTAL	**$59,000**	**$41,229**
SRF	$12,500	$12,500
STF	$3,426	$3,426
WCF		$4,995
TOTAL EXP	**$772,730**	**$799,812**
Deficit 2007/08		-$91,482

[1]

Accumulated surplus 31/3/2006	$324,533
Surplus 2006/07	$58,232
Expenditures resulting in fixed assets	-$47,555
	$335,210

[2] **Other Income**

Bank interest	$2,203
Exchange rate adjustment	$25,673
Asset value recovery	$1,630
	$29,506

2. Statement of financial position on 31 March 2008

ASSETS	
Current assets	
Cash and cash equivalents[3]	$966,891
Credits[4]	$8,760
Total	**$975,651**
Non-current assets[5]	
Plant and equipment[6]	$58,751
Total	**$58,751**
Total Assets	**$1,034,402**
LIABILITIES	
Current liabilities	
Payables[7]	$48,914
Unearned income[8]	$134,925
Total	**$183,839**
Non-current liabilities	
Staff Termination Fund	$13,704
Staff Replacement Fund	$50,000
Total	**$63,704**
Total Liabilities	**$247,543**
NET ASSETS	**$786,859**

[3] **Cash and equivalents**

Cash	$172
BNA US Dollar account	$960,921
BNA Argentine Peso account	$5,798
Total	$966,891

[4] **Credits**

Prepayments to suppliers	$785
VAT to be reimbursed	$7,966
Turnover tax to be reimbursed	$9
Total	$8,760

[5] The Secretariat offices are provided rent-free by the Ministry of Foreign Affairs, International Trade and Worship of Argentina

[6] **Plant and equipment**

Plant and equipment 31-3-2007	$44,315
Disbursements 2007/08	$21,490
Depreciation	-$7,054
Plant and equipment 31-3-2008	$58,751

[7] **Payables**

Provision for income tax reimbursement ex Reg. 5.6 of the Staff Regulations	$38,484
Owing to suppliers	$10,430
	$48,914

[8] Contributions for 2008/09 received during 2007/08, see under **3c**

Represented by accumulated funds	
General Fund	$112,092
Future Meeting Fund	$400,000
Working Capital Fund	$133,783
Total Accumulated Funds	**$645,875**
Accumulated surplus 31-3-2006	**$324,533**
Net surplus 2006/07	$10,677
Acc. surplus 31-3-2007	**$335,210**
Operating deficit 2007/08	-$70,561
To Plant and equipment	-$21,490
To Staff Replacement Fund	-$12,500
To Staff Termination Fund	-$3,426
To Working Capital Fund	-$4,995
Acc. surplus 31-3-2008	**$222,238**

3. Contributions and other income received during 2007/08

Late contributions 2006/7, received during 2007/8	
Uruguay	$22,661
	$22,661
Contributions 2007/8	
a. Received during 2006/7	
Finland	$23,222
France	$34,547
India	$26,756
Netherlands	$26,756
New Zealand	$35,002
Norway	$35,002
Sweden	$26,756
United States	$35,002
Total	$243,043
b. Received during 2007/8	
Argentina	$35,002
Australia	$35,002
Brazil	$23,222
Bulgaria	$19,688
Chile	$26,756
China	$26,756
Ecuador	$19,688
Germany	$30,290
Italy	$30,290
Japan	$35,002
Korea	$23,222
Poland	$23,222
Russia	$23,222
Spain	$26,756
United Kingdom	$35,002
	$413,120
Total	$656,163

Contributions 2008/09	
France	$22,289
Germany	$20,461
New Zealand	$14,936
Norway	$14,918
Russia	$18,343
Sweden	$11,449
United Kindom	$14,948
United States	$17,581
	$134,925

Annex C

Secretariat Programme 2008/09

Introduction

This work programme outlines the activities proposed for the Secretariat in the Financial Year 2008/09 (1 April 2008 to 31 March 2009) and in the first quarter of the Financial Year 2009/10. 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 2009/10. The Budget for 2008/09, the Forecast Budget for 2009/10 and the accompanying contribution and salary scales are included in the appendices.

The programme and the accompanying budget figures for 2008/09 are based on the Forecast Budget for 2008/09 (Decision 4 (2007), Appendix 1) and the experience of the past year.

Apart from the regular activities, such as preparation of the 31st and 32nd ATCM, publication of Final Reports and the various specific tasks assigned to the Secretariat under Measure 1 (2003), the priority tasks for the year 2008/09 will be:

- Operationalization of the Electronic Information Exchange System;
- Publication of the Handbook of the Antarctic Treaty System.

Other specific issues for the coming period are related to the preparation for the replacement of the Executive Secretary in September 2009.

Contents

1. ATCM/CEP support

ATCM XXXI and XXXII

The Secretariat will support the 31st 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 XXXI website. The Delegates section will also provide online registration for delegates and an up to date list of delegates to download.

As in past years, the Secretariat has granted the contract for interpretation and translation of the 31st ATCM to the team of Mr. Bernard Ponette. The Ukrainian Government as host of the 31st ATCM will reimburse the Secretariat for the costs of translation and interpretation during the meeting; the pre-meeting translation and the translation and editing of the Final Report are part of the Secretariat's budget.

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 United States Government in connection with the preparation of the 32nd ATCM in 2009, and with the Government of Uruguay in connection with the preparation of the 33rd ATCM.

The Secretariat will publish and distribute the Final Report of the 31st ATCM in the four Treaty languages within six months of the end of the meeting.

Review of ATCM Recommendations

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.

In 2008, the Executive Secretary, the Assistant Executive Officer, the Information Officer, the IT Officer and the Editor will travel to Kyiv to support the 31st ATCM and 11th CEP, in cooperation with the host government secretariat. The staff will be strengthened during the meeting with two staff members contracted *ad hoc*.

Considering the serious financial situation facing the Secretariat, travel in the Financial Year 2008/09 is limited to travel already approved by ATCM XXX and travel necessary to prepare and support ATCM XXXI and ATCM XXXII.

- COMNAP/SCAR St Petersburg 29 June – 9 July 2008
  - The COMNAP meeting is especially important in view of the close cooperation between the Antarctic Treaty Secretariat and the COMNAP Secretariat in the development of electronic information exchange systems. Attendance at the meeting will provide an opportunity to strengthen the connections and interaction with COMNAP and brief the national Antarctic programmes about the issues to be faced in starting the operational phase of the EIES. Attendance at the SCAR meeting will focus on the committees concerned with data management and information exchange such as JCADM and the SC-AGI.

- IPY JC St Petersburg 4-5 July 2008
  - 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.

The Consultative Parties will be consulted pursuant to Rule 46 on any proposals to attend other meetings to which the Executive Secretary might be invited.

Development of the Secretariat website

Following the recent release of a major renovation of the web site, the Secretariat will continue its development as follows:

- The Antarctic Protected Areas section, currently a static one, will be converted into a dynamic database driven section fully integrated into the new website structure.
- Where feasible, new reporting features will be added to the Antarctic Treaty Database.
- 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 of printed documents.

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

The Secretariat will focus in this phase on the operational features of the EIES, and make any adjustments necessary to facilitate the procedures for Parties to start using the system. Consultation with the Parties with existing information systems will be especially indicated to develop any tailor-made adaptations in the operational version of the EIES. Also, assistance to the Parties will be necessary to solve any incidental problems they might encounter in submitting actual data to the new system. The Secretariat will continue to work closely with COMNAP to analyze how their respective information exchange systems can complement and collaborate. Development work to define the requirements for possible reporting facilities, other than those already in place with regard to environmental data, will also be initiated.

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. In Russian, more Final Reports are lacking. Materials that have been received are being converted into electronic formats and proofread.

The local interface to the database, used by the Secretariat to add and edit data, is based on a privately developed database which pre-existed the Secretariat. It will be replaced by a new interface linked to the operational version of the database.

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 development of the International Polar Year (2007/08). 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 March 31, 2008, the Secretariat staff consisted of the following persons:

Name	Nationality	Position	Rank	Since
Executive staff				
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	G2	1-2-2006
Juan Carlos Brizuela	id.	Accountant (part time)	G2	1-4-2007
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.

With the development of the various information systems of the Secretariat and the large increase in the Secretariat website, the responsibilities of the IT Officer have become more complex. They include not only the management of these systems, but also the management of complex development projects. This, coupled with a strong upward pressure on remuneration in the Argentine IT sector, make an upgrade of this position necessary. The position will be reclassified as G1 from 1 April 2008.

The local interface to the Contacts database, used by the Secretariat to add and edit data, is based on a privately developed database which pre-existed the Secretariat. It will be replaced by a new interface linked to the operational version of the database.

Financial matters

The budget has been compiled on the basis of the figures in the Forecast Budget. Because of the serious financial situation facing the Secretariat, most budget lines have been reduced.

- The figures for the Salaries account have been adjusted to take account of the most recent inflation figures from the IMF World Economic Outlook of April 2008. Despite one promotion (see above) the total sum is slightly lower than expected in the Forecast Budget.
- The budget item Audit had to be doubled, because SIGEN, the external auditors, did not complete the audit of the Secretariat's accounts for 2006/07 within the Financial Year 2007/08 and in consequence will perform two audits during this Financial Year.
- The budget lines for Data Entry and Documentation Services have been reduced. These funds are used to pay trainees and other incidental personnel, and in connection with the very early ATCM planned for 2009 the period for using this type of personnel will be limited.
- The amount for Postage has been reduced. This budget item will be used for distribution of the Final Reports.
- Telecommunication expenses are also rising. However, we are considering alternative solutions for our internet access and web server traffic and we hope to reduce costs from the level of actual expenditures in 2007/08.
- Because of the increasing volume of texts submitted for translation for the ATCM, translation costs are continuing to rise from the 2007/08 figure (which was already much higher than the amount foreseen in the Forecast Budget for that year) and are expected to be $57.400 higher than foreseen in the Forecast Budget.
- Because of the failure of some Parties to pay their contributions on time, the unexpected rise in translation costs, and accounting errors found in the audit of the 2006/07 Financial Report (see SP 3, under Financial Matters), the accumulated surplus at the beginning of the Financial Year 2008/09 will already be considerably less than originally expected. Through drastic cuts in expenditures, the deficit caused by these developments and the expected overspending on translation costs (see above) will be reduced to $40.524. This sum will be withdrawn from the Future Meeting Fund.

6. Forecast programme 2009/10

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 will include a provision of $40,524 to restore the Future Meeting Fund to $400,000, the amount determined by the ATCM in Decision 7 (2005).

The Forecast Budget has been compiled using the inflation figures from the IMF World Economic Outlook of April 2008: 2% for international prices and 9,1% for prices in Argentina.

The replacement of the Executive Secretary will cause extra expenses for relocation of the outgoing and incoming persons and their families. The Staff Replacement Fund, which has been accumulated during the first four years and now contains US $ 50,000, will be used for this purpose.

Because of renewal of the contract of the Assistant Executive Officer, provision will have to be made in the Staff Termination Fund for the obligations of the Secretariat in accordance with Regulation 10.4 of the Staff Regulations.

Although prices for international travel are expected to continue to rise, the cost of attending the 33rd ATCM in Uruguay will be considerably lower than those in connection with the 32nd ATCM, so the budget line for travel expenses has been reduced in the Forecast Budget.

Appendix 1

Budget 2008/09 and Forecast Budget 2009/10

INCOME	Actual 2007/08	Forecast 2008/09	2008/09	Forecast 2009/10
Accumulated surplus	$335,210	$383,133	$222,238[1]	
Contributions				
2006/07	$22,661		$22,217	
2007/08	$656,163		$89,354	
2008/09		$394,567	$394,567	
2009/10				$808,124
From Future Meeting Fund			$40,578[2]	
From Staff Replacement Fund				$50,000[2]
Other	$29,506	$25,000	$2,200	$2,500
TOTAL	**$708,330**	**$802,700[3]**	**$771,154**	**$860,624**
SALARIES				
Executive Staff	$210,740	$219,463	$220,318	$228,912
General Staff	$123,884	$147,447	$144,486	$158,094
Total Salaries	**$334,624**	**$366,910**	**$364,804**	**$387,006**
GOODS AND SERVICES				
Audit	$0	$7,185	$14,370	$7,840
Data entry	$4,349	$6,600	$3,500	$2,000
Documentation Services	$1,795	$8,700	$0	$2,000
Legal advice	$4,257	$5,400	$5,400	$5,900
Miscellaneous	$8,416	$7,805	$6,626	$8,000
Office expenses	$9,137	$15,400	$10,000	$11,000
Postage	$5,836	$13,800	$6,600	$7,200
Printing	$28,704	$34,600	$26,000	$28,300
Representation	$7,272	$8,600	$3,000	$3,300
Staff replacement			$0	$50,000
Telecom	$11,148	$7,000	$9,600	$9,800
Training	$4,623	$7,400	$600	$1,000
Translation	$187,152	$154,900	$212,300	$212,300
Travel	$130,349	$96,000	$67,700	$35,000
Total Goods and Services	**$403,039**	**$373,390**	**$365,696**	**$383,640**
EQUIPMENT				
Documentation	$382	$4,100	$1,000	$1,100
Furniture	$10,687	$6,200	$4,500	$4,900
IT Equipment	$15,947	$35,600	$14,500	$16,000
Development	$14,213	$16,500	$11,000	$11,000
Total Equipment	**$41,229**	**$62,400**	**$31,000**	**$33,000**
TOTAL	**$778,891**	**$802,700**	**$761,500**	**$803,646**
To Future Meeting Fund				$40,578[2]
To Staff Replacement Fund	$12,500			
To Staff Termination Fund	$3,426			$7,900[2]
To Working Capital Fund	$4,995		$9,654[2]	$8,500
TOTAL EXPENDITURES	**$799,812**	**$802,700**	**$771,154**	**$860,624**
Surplus/deficit	-$91,482	$0	$0	$0

Summary of Funds	Balance 31-3-2008	Balance 31-3-2009	Balance 31-3-2010
Future Meeting Fund	$400,000	$359,422	$400,000
Staff Replacement Fund	$50,000	$50,000	$0
Staff Termination Fund	$13,704	$13,704	$21,604
Working Capital Fund	$133,783	$143,437	

[1] Accumulated surplus

Balance 31-3-2007	$335.210
Deficit 2007/08	-$91.482
Expenditures resulting in fixed assets	-$21.490
Balance 31-3-2008	$222.238

[2] See Summary of Funds

[3] ATCM XXX decided to use the accumulated surplus up to 31/3/2007 as income for the Financial Year 2007/08. See Decision 4 (2007), Point 2.

Appendix 2

Contribution scale 2009/10

2009/10	Cat.	Mult.	Variable	Fixed	Total
Argentina	A	3.6	$21,973	$14,431	$36,404
Australia	A	3.6	$21,973	$14,431	$36,404
Belgium	D	1.6	$9,766	$14,431	$24,197
Brazil	D	1.6	$9,766	$14,431	$24,197
Bulgaria	E	1	$6,104	$14,431	$20,534
Chile	C	2.2	$13,428	$14,431	$27,859
China	C	2.2	$13,428	$14,431	$27,859
Ecuador	E	1	$6,104	$14,431	$20,534
Finland	D	1.6	$9,766	$14,431	$24,197
France	A	3.6	$21,973	$14,431	$36,404
Germany	B	2.8	$17,090	$14,431	$31,521
India	C	2.2	$13,428	$14,431	$27,859
Italy	B	2.8	$17,090	$14,431	$31,521
Japan	A	3.6	$21,973	$14,431	$36,404
Korea	D	1.6	$9,766	$14,431	$24,197
Netherlands	C	2.2	$13,428	$14,431	$27,859
New Zealand	A	3.6	$21,973	$14,431	$36,404
Norway	A	3.6	$21,973	$14,431	$36,404
Peru	E	1	$6,104	$14,431	$20,534
Poland	D	1.6	$9,766	$14,431	$24,197
Russia	C	2.2	$13,428	$14,431	$27,859
South Africa	C	2.2	$13,428	$14,431	$27,859
Spain	C	2.2	$13,428	$14,431	$27,859
Sweden	C	2.2	$13,428	$14,431	$27,859
Ukraine	D	1.6	$9,766	$14,431	$24,197
United Kingdom	A	3.6	$21,973	$14,431	$36,404
United States	A	3.6	$21,973	$14,431	$36,404
Uruguay	D	1.6	$9,766	$14,431	$24,197
		66.2	**$404,062**	**$404,062**	**$808,124**
Base rate	$6,104				

Appendix 3

Salary scale 2008/09

		STEPS														
Level		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1	A	$96,922	$98,726	$100,529	$102,333	$104,137	$105,940	$107,743	$109,548							
1	B	$121,153	$123,407	$125,661	$127,917	$130,171	$132,425	$134,679	$136,934							
2	A	$81,614	$83,149	$84,684	$86,218	$87,752	$89,286	$90,820	$92,355	$93,890	$95,425	$96,959	$97,133	$98,647		
2	B	$102,018	$103,937	$105,855	$107,773	$109,690	$111,608	$113,525	$115,444	$117,363	$119,281	$121,198	$121,416	$123,308		
3	A	$68,057	$69,537	$71,018	$72,499	$73,980	$75,460	$76,941	$78,422	$79,902	$81,382	$82,863	$83,178	$84,639	$86,100	$87,559
3	B	$85,072	$86,921	$88,773	$90,624	$92,475	$94,325	$96,176	$98,028	$99,878	$101,728	$103,579	$103,973	$105,799	$107,624	$109,449
4	A	$56,433	$57,804	$59,177	$60,544	$61,917	$63,287	$64,655	$66,028	$67,400	$68,769	$70,140	$70,523	$71,875	$73,226	$74,578
4	B	$70,541	$72,255	$73,971	$75,680	$77,396	$79,108	$80,819	$82,535	$84,250	$85,961	$87,675	$88,153	$89,843	$91,533	$93,223
5	A	$46,788	$48,015	$49,241	$50,468	$51,693	$52,919	$54,145	$55,369	$56,596	$57,823	$59,046	$59,443			
5	B	$58,485	$60,019	$61,551	$63,084	$64,616	$66,148	$67,681	$69,211	$70,745	$72,278	$73,808	$74,303			
6	A	$37,039	$38,218	$39,394	$40,574	$41,751	$42,929	$44,109	$45,287	$46,463	$47,180	$47,642				
6	B	$46,299	$47,772	$49,243	$50,718	$52,189	$53,661	$55,136	$56,608	$58,079	$58,975	$59,553				

Level		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV
1		$36,745	$38,458	$40,174	$41,887	$43,674	$45,537									
2		$30,621	$32,049	$33,478	$34,906	$36,395	$37,947									
3		$25,516	$26,707	$27,897	$29,088	$30,330	$31,624									
4		$21,264	$22,256	$23,248	$24,240	$25,275	$26,353									
5		$17,566	$18,386	$19,205	$20,026	$20,881	$21,773									
6		$14,399	$15,070	$15,742	$16,414	$17,115	$17,845									
7																
8																

Decision 3 (2008)

Appointment of an 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 a period of two years, in accordance with Regulation 11.1;
2) authorize the Executive Secretary to negotiate a contract with SIGEN to carry out an annual external audit in accordance with Regulation 11.3 and the Annex to this Decision, for the value indicated in the attached Annex; and
3) replace Decision 3 (2007) by this Decision.

Annex to Decision 3 (2008)

Tasks to be carried out by the external auditor

To provide external audit reports covering the financial years ending in 2007, 2008 and 2009, in accordance with Regulation 11.3 of 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 cost of the work is not to exceed US$ 7,185 for each report. The provisional financial report for each Financial Year should be submitted to SIGEN no later than 1 June of the year in which the Financial Year concludes and the final audited report should be submitted to the Executive Secretary no later than 1 September of the year in which the Financial Year concludes.

Decision 4 (2008)

Procedure for Selection and Appointment of the Executive Secretary of the Secretariat of the Antarctic Treaty

The Representatives,

Recalling Decision 3 (2004) on the appointment of the Executive Secretary;

Recalling also Decision 2 (2007) on the re-appointment of the Executive Secretary;

Recalling further Article 3 of Measure 1 (2003) regarding the appointment of an Executive Secretary of the Secretariat of the Antarctic Treaty;

Bearing in mind Paragraph 3 of Decision 2 (2003) on the provisional application of Measure 1 (2003);

Noting Regulation 6.1 of the Staff Regulations for the Secretariat of the Antarctic Treaty;

Decide:

That the Executive Secretary of the Secretariat of the Antarctic Treaty will be selected and appointed in accordance with the following procedure:

Advertisement

The Secretariat of the Antarctic Treaty will advertise the vacancy on its website and include information on duties; selection criteria; the application process; staff regulations; and other relevant information.

Consultative Parties may advertise, at their own cost, the vacancy in publications, websites and other media they consider appropriate.

Eligible Applicants

Applicants must satisfy the following selection criteria:

- Demonstrated experience or detailed knowledge of the operations of international meetings or intergovernmental organisations;

- Demonstrated high level managerial and leadership experience and competence in areas including:
  (a) selection and supervision of professional, administrative and technical staff;
  (b) preparation of financial budgets and the management of expenditures;
  (c) organisation of meetings and provision of secretariat support for high level committees; and
  (d) oversight and management of computer services and information technology.
- Familiarity with Antarctic affairs, including the principles of the Antarctic Treaty and the scope of activities in the region;
- Fluency in one of the four official working languages of the Antarctic Treaty Consultative Meeting, i.e. English, French, Russian or Spanish;
- A university degree, academic degree, or equivalent qualification; and
- Be a national of a Consultative Party to the Antarctic Treaty.

Submission of Eligible Applications

Nationals of a Consultative Party may apply for the post of Executive Secretary only to their national authority, who will be responsible for forwarding the applications to the Secretariat of the Antarctic Treaty, no later than 180 days before the Antarctic Treaty Consultative Meeting at which the selection of the Executive Secretary will be considered. Applications must be submitted electronically. Applications received after this date will not be considered.

Receipt of Applications

The Secretariat of the Antarctic Treaty will notify Consultative Parties of the receipt of applications.

Availability of Applications

A copy of each application received by the Secretariat of the Antarctic Treaty no later than 180 days before the Antarctic Treaty Consultative Meeting at which the selection of the Executive Secretary will be considered will be forwarded electronically without delay by the Secretariat of the Antarctic Treaty to the Representative of each Consultative Party.

Ranking of Applicants

Consultative Parties will notify the Depositary Government of up to ten preferred candidates in order of preference, no later than 120 days before the relevant Antarctic Treaty Consultative Meeting. In relation to those rankings received by the deadline, the Depositary Government

will aggregate individual applicants' rankings, awarding ten points for a first preference, nine points for a second preference, etc.

Shortlisting

The candidates with the five highest aggregate scores will form the shortlist for selection. Should the application of any shortlisted candidate/s be withdrawn, the next ranking candidate/s will be substituted.

Interview Process

The Depositary Government will notify, through the Secretariat of the Antarctic Treaty, the names of the shortlisted candidates to Consultative Parties no later than 60 days before the relevant Antarctic Treaty Consultative Meeting. The Secretariat of the Antarctic Treaty will invite the shortlisted candidates to attend an interview at that Antarctic Treaty Consultative Meeting.

The shortlisted candidates invited for interview are required to meet the costs of their travel and expenses. Each relevant Consultative Party is encouraged to assume these costs.

Shortlisted candidates will be interviewed by those Heads of Delegation wishing to participate in the selection process at the relevant Antarctic Treaty Consultative Meeting.

The outcome of the selection process will be notified to shortlisted candidates at the conclusion of the first week of the relevant Antarctic Treaty Consultative Meeting by the Chair of that meeting.

Selection

The relevant Antarctic Treaty Consultative Meeting will take a Decision regarding the appointment of the selected candidate.

The chosen candidate will be required to enter into a contract outlining the terms of employment.

Start Date

The chosen candidate will report to the Secretariat headquarters in Buenos Aires for commencement of duties no later than the date agreed by the relevant Antarctic Treaty Consultative Meeting.

STANDARD APPLICATION FORM

Personal Details

Name:
Address:
Phone:
Facsimile:
Email:
Nationality:

Selection Criteria

(Provide additional information elaborating on these criteria)

1) Demonstrated experience or detailed knowledge of the operations of international meetings or intergovernmental organisations;
2) Demonstrated high level of managerial and leadership experience and competence in areas including:
   (a) selection and supervision of professional, administrative and technical staff;
   (b) preparation of financial budgets and the management of expenditures;
   (c) organisation of meetings and provision of secretariat support for high level committees; and
   (d) oversight and management of computer services and information technology;
3) Familiarity with Antarctic affairs, including the principles of the Antarctic Treaty and the scope of activities in the region;
4) Fluency in one of the four official working languages of the ATCM, i.e. English, French, Russian or Spanish;
5) A university degree, academic degree, or equivalent qualification; and
6) Be a national of a Consultative Party to the Antarctic Treaty.

Decision 5 (2008)

Electronic Information Exchange System

The Representatives,

Recalling Article III (1a) and Article VII (5) of the Antarctic Treaty;

Recalling Article 17 and other Articles of the Protocol on Environmental Protection and of its Annexes with commitments to exchange information;

Recalling Recommendation VIII-6 (1975), Recommendation XIII-3 (1985), Resolution 6 (2001) and other improvements that the Parties have made with respect to keeping each other informed by regular or occasional exchanges;

Recalling Decision 10 (2005) on the establishment of an Electronic Information Exchange System (EIES);

Reminding Parties of their obligation under Article III (1a) and Article VII (5) of the Antarctic Treaty and Article 17 and other Articles of the Protocol on Environmental Protection and of its Annexes to provide information to the other Parties;

Noting the completion of the development of the EIES by the Secretariat, having taken into account the comments made by Parties during the trial period;

Desiring to ensure that the exchange of information between the Parties is conducted in the most efficient and timely way, and that the Antarctic Treaty Consultative Meeting and the Committee for Environmental Protection have access to the most comprehensive and authoritative information about Antarctica;

Decide to:

1) direct the Secretariat to begin the operation of the EIES on 15 September 2008 with the collection of the pre-season information for the 2008/09 season; and
2) ask the Secretariat to make the information submitted to the EIES publicly available through the Secretariat website as soon as practicable.

ANNEX C

Resolutions

Resolution 1 (2008)

Guide to the Presentation of Working Papers Containing Proposals for Antarctic Specially Protected Areas, Antarctic Specially Managed Areas or Historic Sites and Monuments

The Representatives,

Noting that Annex V to the Protocol on Environmental Protection to the Antarctic Treaty provides for the Antarctic Treaty Consultative Meeting to adopt proposals to designate an Antarctic Specially Protected Area (ASPA) or an Antarctic Specially Managed Area (ASMA), to adopt or amend a management plan for such an area, or to designate an Historic Site or Monument (HSM), by a Measure in accordance with Article IX(1) of the Antarctic Treaty;

Bearing in mind the increasing number of such measures and revising measures;

Conscious of the need to ensure clarity concerning the current status of each ASPA and ASMA and its management plan, and each HSM;

Recalling Resolution 2 (1998), which recommended that the Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas, appended to that Resolution, be used by those engaged in the preparation or revision of such management plans;

Noting that Resolution 9 (1995) on a Uniform Model for Management Plans refers to a Management Plan which is no longer effective;

Recommend that:

The "*Guide to the presentation of Working Papers containing proposals for Antarctic Specially Protected Areas, Antarctic Specially Managed Areas or Historic Sites and Monuments*" annexed to this Resolution be used by those engaged in the preparation of such Working Papers.

Annex: Guide to the presentation of Working Papers containing proposals for Antarctic Specially Protected Areas, Antarctic Specially Managed Areas or Historic Sites and Monuments

A. Working Papers on ASPA or ASMA

It is recommended that the Working Paper contain two parts:

(i) a COVER SHEET explaining the intended effects of the proposal and the history of the ASPA/ASMA, using Template A as a guide. This cover sheet will not form part of the Measure adopted by the ATCM, so will not be published in the Final Report nor on the ATS website. Its sole purpose is to facilitate consideration of the proposal and the drafting of the Measures by the ATCM.

and

(ii) a MANAGEMENT PLAN, written as a final version as it is intended to be published. This will be annexed to the Measure and published in the Final Report and on the ATS website.

It would be helpful if the plan is written *as final*, ready for publication. Of course, when it is first submitted to the CEP it is a draft and may be amended by the CEP or ATCM. However, the version adopted by the ATCM should be in final form for publication, and should not require further editing by the Secretariat, other than to insert cross-references to other instruments adopted at the same meeting.

For example, in its final form, the plan should not contain expressions such as:

- "this *proposed* area";
- "this *draft* plan";
- "this plan, *if adopted*, would…";
- accounts of discussions in the CEP or ATCM or details of intersessional work (unless this covers important information e.g. about the consultation process or activities that have occurred within the Area since the last review);
- views of individual delegations on the draft or intermediate versions of it;
- references to other protected areas using their pre-Annex V designations.

Please use the *"Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas"* if the proposal concerns an ASPA. (The current version of this Guide is appended to Resolution 2 (1998) and is contained in the CEP Handbook).

There are several high quality management plans, including that for ASPA No 109: Moe Island, that could be used as a model for the preparation of new and revised plans.

B. Working Papers on Historic Sites and Monuments (HSM)

HSMs do not have management plans, unless they are also designated as ASPAs or ASMAs. All essential information about the HSM is included in the Measure. The rest of the Working Paper will not be annexed to the Measure; if it is desired to keep any additional background information on record, this material may be annexed to the report of the CEP for inclusion in the Final Report of the ATCM. To ensure that all the information required for inclusion in the Measure is provided, it is recommended that Template B below is used as a guide when drafting the Working Paper.

C. The tabling of draft Measures on ASPA, ASMA and HSM at the ATCM

When a draft Measure to give effect to the advice of the CEP on an ASPA, ASMA or HSM is submitted to the Secretariat for tabling at the ATCM, the Secretariat is requested also to provide to the ATCM copies of the cover sheet from the original Working Paper setting out the proposal, subject to any revisions made by the CEP.

The sequence of events is as follows:

- A Working Paper consisting of a draft management plan and an explanatory cover sheet is prepared and submitted by the proponent;
- The Secretariat prepares a draft Measure for the ATCM;
- Draft Management Plan is discussed by CEP and any revisions made (by the proponent in liaison with the Secretariat);
- If CEP recommend adoption, the Management Plan (as agreed) plus the cover sheet (as agreed) are passed from the CEP Chair to the Chair of the Legal and Institutional Working Group;
- Legal and Institutional Working Group reviews the draft Measure;
- Secretariat formally tables the draft measure plus the agreed cover sheet;
- ATCM consider and make decision.

TEMPLATE A: COVER SHEET FOR A WORKING PAPER ON AN ASPA OR ASMA

Please ensure that the following information is provided on the cover sheet:

1. Is a new ASPA proposed? Yes/No
2. Is a new ASMA proposed? Yes/No
3. Does the proposal relate to an existing ASPA or ASMA?

   If so, list all Recommendations, Measures, Resolutions and Decisions pertaining to this ASPA/ASMA, including any previous designations of this area as an SPA, SSSI or other type of protected area.

   In particular, please include the date and relevant Recommendation/Measure for the following:

   - First designation:
   - First adoption of Management Plan:
   - Any revisions to Management Plan:
   - Current Management Plan:
   - Any extensions of expiry dates of Management Plan:
   - Renaming and renumbering as ……..... by Decision 1 (2002).

   (Note: this information may be found on the ATS website in the Antarctic Treaty Database by searching under the name of the area. While the ATS has made every effort to ensure the completeness and accuracy of the information in the database, occasional errors or omissions may occur. The proponents of any revision to a protected area are best placed to know the history of that area, and are kindly requested to contact the Secretariat if they notice any apparent discrepancy between the regulatory history as they understand it and that displayed on the Antarctic Treaty Database.)

4. If the proposal contains a revision of an existing management plan, please indicate the types of amendment:
   (i) Major or minor?
   (ii) any changes to the boundaries or co-ordinates?
   (iii) any changes to the maps? If yes, are the changes in the captions only or also in the graphics?
   (iv) any change to the description of the area that is relevant to identifying its location or its boundaries?
   (v) any changes that affect any other ASPA, ASMA or HSM within this area or adjacent to it? In particular, please explain any merger with, incorporation of or abolition of any existing area or site.
   (vi) Other - brief summary of other types of changes, indicating the paragraphs of the management plan in which these are located (especially helpful if the plan is long).
5. If a new ASPA or ASMA is proposed, does it contain any marine area? Yes/No
6. If yes, does the proposal require the prior approval of CCAMLR in accordance with Decision 9 (2005)? Yes/No
7. If yes, has the prior approval of CCAMLR been obtained? Yes/No (If yes, the reference to the relevant paragraph of the CCAMLR Final Report should be given).

The above format may be used as a template or as a check-list for the cover sheet, to ensure that all the requested information is provided.

TEMPLATE B: COVER SHEET FOR A WORKING PAPER ON A HISTORIC SITE OR MONUMENT

Please ensure that the following information is provided on the cover sheet:

1. Has this site or monument been designated by a previous ATCM as a Historic Site or Monument? Yes/No (If yes, please list the relevant Recommendations and Measures).
2. If the proposal is for a new Historic Site or Monument, please include the following information, worded for inclusion in the Measure:
   (i) Name of the proposed HSM, to be added to the list annexed to Measure 2 (2003);
   (ii) Description of the HSM to be included in the Measure, including sufficient identifying features to enable visitors to the area to recognize it;
   (iii) Co-ordinates, expressed in degrees, minutes and seconds;
   (iv) Original proposing Party;
   (v) Party undertaking management.
3. If the proposal is to revise an existing designation of an HSM, please list the relevant past Recommendations and Measures.

The above format may be used as a template or as a check-list for the cover sheet, to ensure that all the requested information is provided.

Resolution 2 (2008)

Site Guidelines for Visitors

The Representatives,

Recalling Resolution 5 (2005), Resolution 2 (2006) and Resolution 1 (2007) 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 four 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 1 (2007);
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 texts of Resolution 2 (2006) and Resolution 1 (2007) on its website in a way that makes clear that these Resolutions are no longer current.

Annex to Resolution 2 (2008)

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. 64°49' S; Long. 63°30' W);

5. Goudier Island, Port Lockroy (Lat. 64°49' S; Long. 63°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. 63° 32' S; Long. 56° 55' W); and
14. Snow Hill (Lat. 64° 22' S, Long. 56° 59' W)
15. Shingle Cove, Coronation Island (Lat. 60º 39' S, Long. 45º 34' W)
16. Devil Island, Vega Island (Lat. 63° 48' S, Long. 57°167' W)
17. Whalers Bay, Deception Island, South Shetland Islands (Lat. 62° 59' S, Long. 60° 34' W)
18. Half Moon Island, South Shetland Islands (Lat. 60° 36' S, Long. 59° 55' W)

Resolution 3 (2008)

Environmental Domains Analysis for the Antarctic continent as a dynamic model for a systematic environmental geographic framework

The Representatives,

Noting that Article 3 of Annex V to the Protocol on Environmental Protection to the Antarctic Treaty provides a framework for the designation of Antarctic Specially Protected Areas;

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

Noting also that Article 3(2) of Annex V states that Parties shall seek to identify such areas within a systematic environmental-geographical framework;

Desiring to give practical meaning to the phrase "systematic environmental-geographical framework";

Recalling Resolution 1 (2000) *Guidelines for Implementation of the Framework for Protected Areas;*

Recommend that:

The "*Environmental Domains Analysis for the Antarctic Continent*" annexed to this Resolution be used consistently and in conjunction with other tools agreed within the Antarctic Treaty System as a dynamic model for the identification of areas that could be designated as Antarctic Specially Protected Areas within the systematic environmental-geographical framework referred to in Article 3(2) of Annex V of the Protocol.

Annex: Environmental Domains Analysis for the Antarctic continent

Version 2.0, 2007

Environmental geographic frameworks are methods of classifying or organising subsets of environmental and geographic characteristics such as different types of ecosystem, habitat, geographic area, terrain, geology, and climate into environmental or geographic regions. Each region is distinctive or in some way different from other regions but some might have characteristics in common.

Environmental Domains Analysis (EDA) has been used, at the scale of the Antarctic continent, to classify a sub-sample of over 13 million 1000m pixels from eight underlying data layers, into 21 Environments (also known as "Environmental Domains"). The classification presented here is the best that can be achieved by this process using currently available climate, slope, land cover and geological data.

The 21 different Environments in Table 1 and Figure 1 represent 21 different environmental-geographic regions that fit together into a logical, integrated and complete system of regions representing Antarctica as a whole. This provides the fundamental scientific basis for the systematic environmental-geographic framework for protected areas as envisaged in, and consistent with, Article 3(2).

A full description of these Environments, individual maps of them (as well as further details on the project background, data layers and the classification process itself) are contained in the technical report by Morgan and others (2007).

The spatial classification of Antarctica into 21 Environmental Domains is presented in the attached figure.

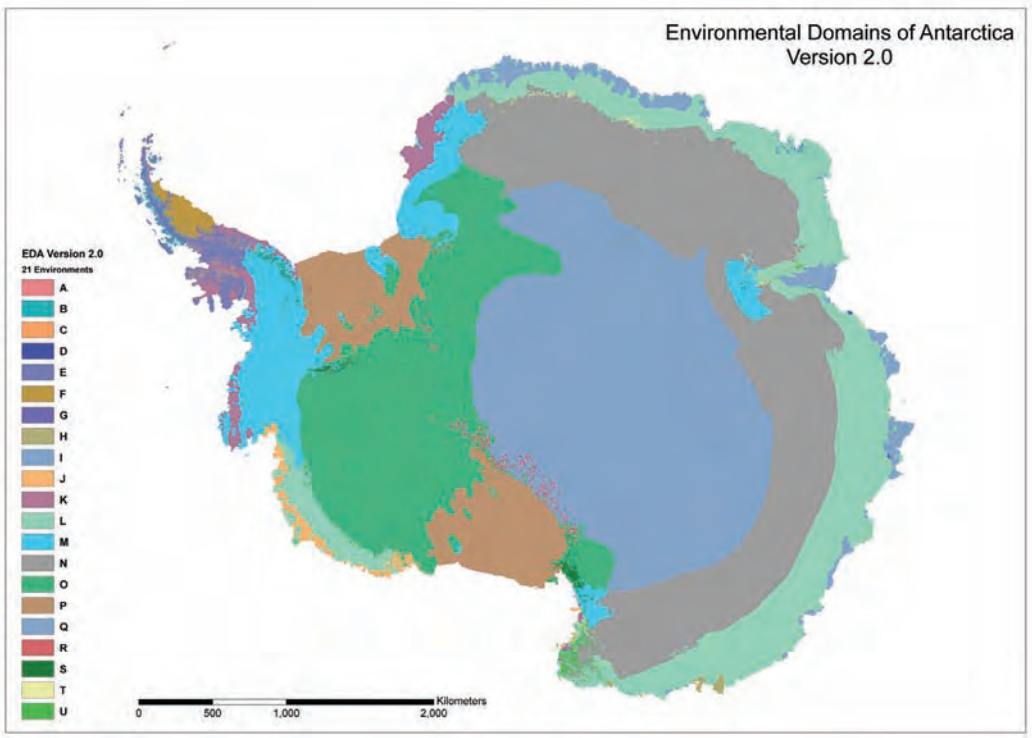
Reference

Morgan F, Barker G, Briggs C, Price R and Keys H. 2007. Environmental Domains of Antarctica Version 2.0 Final Report, Manaaki Whenua Landcare Research New Zealand Ltd, 89 pages.

Table 1 – Descriptions of Environments in Version 2.0 of Environmental Domains Analysis for the Antarctic continent, including type examples

Alphabet label	EDA Type Environments and extended descriptors
A	Antarctic Peninsula northern geologic
B	Antarctic Peninsula mid-northern latitudes geologic
C	Antarctic Peninsula southern geologic
D	East Antarctic coastal geologic (e.g. Vestfold, Bunger, Wilson hills)
E	Antarctic Peninsula, Alexander and other islands main ice fields and glaciers)
F	Larsen Ice Shelf (also includes Prince Gustav and other northern peninsula ice shelf remnants)
G	Antarctic Peninsula offshore islands (e.g. most of Deception Island)
H	East Antarctic low latitude glacier tongues (e.g. Mertz, Rennick)
I	East Antarctic ice shelves (e.g. Fimbulisen, Amery, Shackleton, Cook, Moubray Bay)
J	Southern latitude coastal fringe ice shelves and floating glaciers (e.g. Pine Island,Thwaites, Getz, Drygalski)
K	Northern latitude ice shelves (e.g. Wordie, George VI, Wilkins, Abbot, Riser-Larsenisen, Nansen)
L	Continental coastal-zone ice sheet
M	Continental mid-latitude sloping ice (e.g. Ellsworth & Coats lands, upper Lambert Gl, northern Berkner & Thurston islands)
N	East Antarctic inland ice sheet
O	West Antarctic Ice Sheet (also includes inland Coats Land, Taylor Dome, Ross Island ice cap)
P	Ross and Ronne-Filchner ice shelves
Q	East Antarctic high interior ice sheet
R	Transantarctic Mountains geologic (Shackleton Range to Cook Mountains)
S	McMurdo - South Victoria Land geologic (also includes Ellsworth, Werner etc mountains)
T	Inland continental geologic (Dronning Maud, MacRobertson, Victoria, Oates lands, Ford Range)
U	North Victoria Land geologic (also includes Executive Committee Range, Prince Charles & Jones mountains)

Figure 1 – Map of Antarctica showing the classification layer with its 21 Environments



Resolution 4 (2008)

Checklist to assist in the inspection of Antarctic Specially Protected Areas and Antarctic Specially Managed Areas

The Representatives,

Recalling Article VII of the Antarctic Treaty which provides for the designation of observers to carry out inspections and Article 14 of the Protocol on Environmental Protection to the Antarctic Treaty which provides that inspections shall be arranged to promote the protection of the Antarctic environment and dependent and associated ecosystems and to ensure compliance with the Protocol;

Further recalling Article 12 of the Protocol which sets out the functions of the Committee for Environmental Protection, including providing advice on inspection procedures, including formats for inspection reports and checklists for the conduct of inspections;

Considering that inspection checklists are useful as guidelines for those planning and conducting inspections;

Noting that checklists are not mandatory, exhaustive nor necessarily completely applicable to all areas and that they are not to be used as a questionnaire;

Recommend that:

Their Governments encourage the use of the attached *"Checklist to assist in the inspection of Antarctic Specially Protected and Managed Areas"*.

Annex: Checklist to assist in the inspection of Antarctic Specially Protected Areas and Antarctic Specially Managed Areas

This checklist is not intended to be exhaustive, but is designed to provide a guideline to observers conducting inspections in Antarctica in accordance with Article VII of the Antarctic Treaty and Article 14 of the Environment Protocol. Not all items in the checklist are necessarily applicable to the activity being inspected or directly related to Article VII of the Antarctic Treaty or the requirements of the Protocol on Environmental Protection to the Antarctic Treaty. It is recognised that some of the items could be addressed through the Antarctic Treaty Exchange of Information. It is also recognised that the purpose of an inspection is to verify through observation. Therefore, any inspection report should clearly identify which information was observed and which was taken from documents. It is recommended that observers seek out and examine all relevant documents prior to undertaking inspections.

1. General information

1.1 Name and number of Protected or Managed Area

1.2 Date of inspection visit

1.3 Name(s) of observers entering the Area

1.4 Mode of transport to/from the Area

1.5 Activities conducted by the observers in the Area

1.6 Authority issuing permit to observers to enter the Area

2. Nearby stations and visiting vessels (if any)

2.1 Nearest stations, bases and vessels

2.2 Are copies of the Area Management Plan held on the station or vessel?

2.3 Who is responsible for ensuring compliance with Management Plans at any nearby stations or vessels?

2.4 Entry by station or vessel personnel to the Area within the past year (issue of permits and reason for their issue)

2.5 Are there any problems with station or vessel personnel or visitors not observing the restrictions of the Area?

2.6 Are other Protected or Managed Areas in close proximity?

3. Assessment of Area Management Plan

3.1 Are the values for which the Area was designated still relevant?

3.2 Are the values of the Area being protected effectively?

3.3 Are the management aims and objectives appropriate?

3.4 Is the period of designation appropriate?

3.5 Do maps and photographs show the boundary of the Area clearly and the key features it contains?

3.6 Are the boundaries easy to locate?

3.7 Are maps and photographs easy to use and up to date?

3.8 What are the geographical coordinates of the Area? Are they correct (clearly state how this was checked in the field)?

4. Management activities

4.1 Are appropriate management activities being undertaken to protect the values of the Area?

4.2 Is any monitoring of the Area being undertaken?

4.3 What measures are in place to ensure that the aims and objectives of the Management Plan are being met? Do they need to be revised?

Resolution 5 (2008)

Improving hydrographic surveying and charting to support safety of navigation and environmental protection in the Antarctic region

The Representatives,

Considering that reliable hydrographic data and nautical charts are essential to safe maritime operations;

Noting the increase in marine traffic, particularly tourist vessels, in the Antarctic region;

Concerned about the increased risk of harm to ships, persons and the environment in inadequately charted waters in the region;

Noting that the collection of accurate survey data will improve navigational safety and support scientific research;

Recognising the role of the International Hydrographic Organization Hydrographic Commission on Antarctica (HCA) in the coordination of hydrographic charting in the Antarctic region and the value of cooperating with relevant expert bodies;

Recommend that their Governments:

1) cooperate with the HCA to improve hydrographic surveying and charting in the Antarctic region, including working to
    a) clarify HCA requirements for the collection of hydrographic data of sufficient quality for use in the development of electronic navigation charts, and
    b) identify priority areas for the collection of additional hydrographic and bathymetric data;
2) encourage their national programme vessels and other vessels, as appropriate, to collect hydrographic and bathymetric data on all Antarctic voyages, as practicable;
3) forward any Antarctic hydrographic and bathymetric data collected to the relevant international chart producer for charting action; and
4) endeavour to find additional resources towards improving hydrographic surveying and charting in the Antarctic region.

Resolution 6 (2008)

Enhancing the role of Maritime Rescue Coordination Centres with Search and Rescue Regions in the Antarctic Treaty Area

The Representatives,

Concerned at the risk of a serious humanitarian and environmental maritime incident in the Antarctic Treaty Area;

Recalling the work of the International Maritime Organisation in producing guidelines relating to maritime search and rescue issues;

Recognising the important role of the five Rescue Coordination Centres with Search and Rescue Regions in the Antarctic Treaty Area in coordinating responses to search and rescue incidents;

Recommend that:

Their Governments, in accordance with their national laws, encourage operators of tourist vessels to:

1) consider the International Maritime Organisation's *"Enhanced contingency planning guidance for passenger ships operating in areas remote from SAR facilities"* (MSC.1/Circ/1184) in planning their activities; and

2) in particular, report their vessel positions on a regular basis to the relevant regional Maritime Rescue Coordination Centres while operating within the Antarctic Treaty Area.

PART III

OPENING AND CLOSING ADDRESSES AND REPORTS FROM ATCM XXXI

ANNEX D

Opening and Closing Addresses

Message from the President of Ukraine Mr Victor Yuschenko to the Participants of the XXXI Antarctic Treaty Consultative Meeting

Ladies and Gentlemen,

Please accept my warm congratulations on the opening of the XXXI Consultative Meeting of the State Signatories to the Antarctic Treaty. I hope you have everything you need for constructive and productive work in hospitable Ukraine.

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 sixth continent is rightfully considered as a global research laboratory. 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.

Ukraine has always taken an active part in international Antarctic studies. We are committed to further development of such an important global research area. Our country, as always, stands for strict compliance with the Antarctic Treaty, and for united efforts by all interested states in studying the severe but beautiful part of our planet.

I am confident that studies of Antarctica and its climatic and geological features will show mankind how to address numerous environmental issues, enrich global science, and promote progress and security in our civilization.

I wish all of you successful and creative work, inspiration, all the best and joy.

III. Opening and Closing Addresses

Welcoming Address to the Participants of XXXI Antarctic Treaty Consultative Meeting by Vice Prime Minister of Ukraine Mr Grigoriy Nemyrya

2 June 2008

Dear Ladies and Gentlemen,

On behalf of the Ukrainian Government, I would like to extend our warmest welcome to the representatives of the Parties to the 1959 Antarctic Treaty in the city of Kiev, capital of Ukraine.

We are proud that, for the first time, Ukraine is hosting a Consultative Meeting.

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 Vernadsky Station) to Ukraine in London in 1996 that was a key milestone in Ukraine's joining the international Antarctic community.

The station is now named after Vladimir Vernadsky, the founder of the Ukrainian Academy of Sciences. This is quite symbolic, because it was Vernadsky who drew mankind's attention to the fact that our thoughts and actions are part of the ecumenical mechanism to study and maintain the unique terrestrial civilization with its extremely vulnerable nature.

Since the establishment of Vernadsky Station, there have been 13 Antarctic expeditions. The station has hosted wintering teams and has conducted studies in many research areas during the summer season.

Ukraine's annual research in Antarctica includes ozone layer observations, as well as meteorological, hydrological, ionospheric, and terrestrial magnetism studies. It is no exaggeration to say this research is extremely valuable for global climate change assessments. Due to the high quality of the research, Vernadsky Station is part of the Global Climate Observing System.

We take care to extend our business contacts with Antarctic researchers from other countries and, to that end, have signed long-term agreements, exchange wintering personnel and scientists, and have developed a number of joint research programs and logistic operations.

Ukraine cooperates with scientists from the UK, Argentina, Bulgaria, Spain, Israel, China, Germany, Poland, Russia, Slovakia, Slovenia, USA, Czech Republic, Chile, Japan, and many other countries.

The Ukrainian Antarctic Research Center, which is our National Antarctic Operator, interacts with international organizations, such as WMO, COMNAP, SCAR and others. Our international contacts are becoming more and more dynamic every year, and we address the issues of the unique Ice Continent and Southern Ocean.

Antarctica is the only remaining safeguard on our blue planet, where climatic conditions helped minimize the impact of human technological activities, and where present and future generations may still admire the exceptional beauty and purity of the first pages of the Earth's history. This live nature reserve of global significance, and worldwide research laboratory, still exists, first due to your efforts, and second due to geopolitical agreements developed and successfully supported by the international Antarctic club, its research institutions and NGOs.

We are highly grateful to you for that.

Unfortunately, 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 may promote destabilization of the planetary water/ice balance and provoke international conflicts over redistribution of Antarctic mineral and biological resources.

The Government 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 civilized way for the benefit of all mankind.

Ukrainian scientists regularly submit monitoring data to worldwide weather centers. They have started 16 new projects within the framework of the Third International Polar Year and have recently begun modernizing station equipment, refurbishing research and engineering facilities, and developing expedition-based studies to cover not only the Argentina Islands area but also inland Antarctica.

Funds for research at Antarctic Vernadsky Station are included in the annual national budget by the Ukrainian Government and allocations for 2008 amount to 20.4 million Ukranian hryrna.

We are making continuous efforts to establish a requisite national regulatory legal framework in support of Antarctic activities, and take care to create adequate social conditions for people working under special circumstances.

The Ukrainian Supreme Rada has approved, in the first reading, a draft national Law on Antarctic Operations. Its enactment will surely open up new opportunities for Ukrainian Antarctic researchers. Therefore, the Government will work to support the draft Law and have it approved.

Completion of the Third IPY projects and ATCM XXXI has caused much interest in the Ukrainian society and especially the younger generation. Antarctica attracts attention at schools, lyceums, universities; children draw penguins and icebergs and watch Antarctic video films and slides.

It depends on all of us, to a certain extent, whether our children and grandchildren will have such an opportunity in the future.

I am confident that your work on issues included in the agenda of XXXI Antarctic Treaty Consultative Meeting will be a powerful impetus to strengthen international environmental cooperation and encourage the development of relevant international and national organizations.

I wish you successful work and balanced and wise decisions to provide for the integrity of a unique Antarctic nature which is so close to us.

Enjoy your stay in our hospitable country.

Thank you for your attention. Good luck!

Message from the Minister of Foreign Affairs of Ukraine Mr Volodymyr S. Ogryzko to the Participants of the XXXI Antarctic Treaty Consultative Meeting

2 June 2008

Esteemed Chairperson, Heads and Members of Delegations as well as participants in the Meeting, Dear colleagues,

Ladies and Gentlemen,

Let me welcome you in connection with holding the XXXI Antarctic Treaty Consultative Meeting in our capital, the city of Kyiv.

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. 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's obtaining the status of the Consultative Party to the Treaty in 2004 enabled our state to join this global movement. "Academician Vernadsky," the Ukrainian research station, is included in the 17 basic centres of the global climate change observing system of the World Meteorological Organization, and this fact is indicative of the recognition, by the world community, of Ukraine's capabilities and, at the same time, imposes certain international obligations on our state.

I would like to recall, without exaggeration, ponderable efforts made by states participating in the Antarctic Treaty System, by the Consultative Parties and by the Secretariat of the Antarctic Treaty concerning the preservation of the Antarctic continent. The creation of Specially Protected Antarctic Areas and Antarctic Specially Managed Areas is one of lines of these activities. As you know, today there are 67 Specially Protected Antarctic Areas and 6 Antarctic Specially Managed Areas.

I hope that you will successfully consider numerous proposals concerning the determination and revision of plans to manage the existing areas which are to be considered at the Kyiv Meeting.

Finally, I would like to welcome you once again on the soil of Ukraine. I would like to express the hope that, apart from your fruitful work, you will have an opportunity to enjoy the Ukrainian hospitality, the cultural achievements of our people and the unforgettable colouring of Kyiv, a city having a millenary history, and this will, for certain, impress you and leave vivid recollections about the Ukrainian land forever.

I wish you fruitful work, cheerful mood and all the best!

III. Opening and Closing Addresses

Greetings from Vernadsky Station

1. Yevgeniy Karyagin, station Commander:

"Good afternoon, Ladies and Gentlemen! The 13th Ukrainian Antarctic expedition with me, Yevgeniy Karyagin, as the Base leader are glad to greet you. We know the 31st Antarctic Treaty Consultative Meeting is open in Kiev. Our congratulations with the beginning of your work! Being here in Antarctica we hope that the main result of your work will be some right decisions for this beautiful place, for Antarctica. We are sure you are already familiar to our wonderful capital – the city of Kiev. We offer to meet Ukraine here in Antarctica at Akademik Vernadsky Station. Welcome, friends!"

2. Igor Gvozdkovskiy, geophysicist:

"Dear participants of the 31st ATCM, on behalf of all winterers, I would like to congratulate you on the opening of the Meeting, and wish you success in creative resolution of all issues and problems."

3. Vadim Lisinchuk, station doctor:

"On behalf of the 13th Antarctic expedition, I would like to welcome the participants of the Meeting, wish them good health, creative inspiration, and resolution of all issues on the agenda. He who has ever been in Antarctica cannot help falling in love with this land, its beautiful landscapes, unforgettable sunset and exotic fauna. It is our key task to preserve such beauty for future generations. We trust and rely on you. Using the opportunity, I would like to invite all participants, especially women, to our Antarctic station to get acquainted with Ukrainian Antarctic cuisine and sing Ukrainian songs. Welcome!"

4. Roman Sokolovsky, system administrator:

"I'd like to thank the Ukrainian Antarctic Center for the chance to visit this beautiful place, to meet new friends and say these wonderful words. Thank you."

5. Anatoliy Rudenko, electrical engineer:

"As you can see, we have beautiful sunny weather. However, it is not always like this. Local weather is changeable as a fickle girl's mood. Despite that, relations and atmosphere at our station are stable, warm and friendly, and I also wish you warmth and comfort in your families and homes."

6. Yevgeniy Karyagin, station Commander:

"And finally, I would like to wish you success and fruitful work in your essential mission that is defending the interests of Antarctica."

ANNEX E

Report of the Committee for Environmental Protection (CEP XI)

Report of the Committee for Environmental Protection (CEP XI)

Kyiv, June 2–6, 2008

Item 1: Opening of the Meeting

(1) The CEP Chair, Dr Neil Gilbert (New Zealand), opened the meeting on Monday 2 June 2008. The Chair thanked Ukraine for arranging and hosting the meeting, as well the Secretariat of the Antarctic Treaty for its support during the intersessional period.

(2) The Chair joined Brazil in expressing deep sadness of the death of Dr Edith Fanta and noted her many years of support for Antarctic work, particularly through her role as chair of CCAMLR's Scientific Committee. The Committee stopped in silent reflection for Dr Fanta and those who lost their lives in Antarctica over the past year.

(3) The Chair summarised the work undertaken since CEP X. The Chair noted that a number of intersessional groups had been established at CEP X to deal with, respectively, the five-year work plan, the review of Management Plans (through the Trial Informal Group), the review of the draft CEE from China, preparation of a model action plan for Specially Protected Species, the Electronic Information Exchange System (EIES) and the status of southern giant petrels in accordance with Resolution 2 (2007). The Chair thanked those who had participated and noted that the outcomes of these intersessional groups would be discussed further throughout the meeting.

(4) The Chair also noted his attendance on behalf of the Committee at the 26th CCAMLR Scientific Committee Meeting, noting that his report would be discussed under agenda item 14.

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 Agenda
3. Strategic Discussions on the Future Work of the CEP
4. Operation of the CEP
5. International Polar Year
6. Environmental Impact Assessment
    a) Draft Comprehensive Environmental Evaluations
    b) Other EIA Matters

7. Area Protection and Management
   a) Management Plans
   b) Historic Sites and Monuments
   c) Site Guidelines
   d) Systematic Environmental Geographic Framework
   e) Other Annex V Matters
8. Conservation of Antarctic Fauna and Flora
   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. Emergency Response and Contingency Planning
12. Waste Management
13. Prevention of Marine Pollution
14. Cooperation with Other Organisations
15. General Matters
16. Election of Officers
17. Preparation for Next Meeting
18. Adoption of the Report
19. Closing of the Meeting

(6) The Committee considered 46 Working Papers, 64 Information Papers and 4 Secretariat Papers (Annex 1, page 453).

Item 3: Strategic Discussions on the Future of the CEP

(7) Australia presented WP 17 *Preparation for Scheduled CEP Discussions: Reviews of Past Activities*, proposing two ideas for improving the efficiency and effectiveness of the Committee. Australia recommended that the Committee consider having a topic summary prepared in advance of discussions scheduled through the five-year work plan, noting that Australia's IP 7 (submitted under agenda item 9b), summarising past discussions and

agreements on environmental monitoring and reporting, was an example. Australia suggested that such summaries would aid the Committee's debates by acting as a reminder of past discussions, and that such topic summaries could be prepared, as required, by the Secretariat and / or willing Members.

(8) Australia also proposed that Members include an abstract at the start of each Working and Information Paper, to assist with the preparation of topic summaries and with Members' review of papers for each meeting.

(9) The Committee supported the proposal for Working and Information Papers to include an abstract that would highlight the key aspects and proposals or recommendations contained in the paper. The Committee noted that such abstracts could be used by the Chair and Secretariat in preparing an annotated agenda for the Committee.

(10) There was general agreement to Argentina's suggestion that Working Papers ideally should include a clear recommendation, or a clear question for discussion.

(11) Members also agreed in principle with Australia's proposal for topic summaries to be prepared, if required. Some Members posed questions about the time that would be required to prepare such topic summaries, whether they would be required for all items on the CEP's agenda, and the potential impact on the Secretariat's resources.

(12) Australia responded that in its view topic summaries would be an additional tool to support the CEP's five-year work plan and that the need for such topic summaries should be considered on a case-by-case basis.

(13) The Secretariat indicated that it would be willing to prepare topic summaries, but that the Committee should clearly define the scope of the summary, on which topics they would be required and by what deadline. Connected with this, France suggested to add a link to the original documents when possible.

(14) The Committee agreed that topics could be selected from the five-year work plan and that the Secretariat and willing volunteers could be asked to prepare topic summaries and make them available on the CEP website, well in advance of the meeting at which the topic would be discussed, so as to assist Parties in their preparations.

(15) Noting the large and increasing number of papers presented to the Committee, France suggested that one possible alternative to discussion of Information Papers at the meeting would be to make them available on the CEP website for discussion by Members via an on-line forum.

(16) The Secretariat responded that whilst such an approach would be technically possible, this could be resource intensive due to the large number of Information Papers. ASOC also noted that invited experts can only introduce Information Papers. As such, an on-line discussion forum would preclude discussion of all papers submitted from those invited experts. Several Members indicated a desire for more time to consider this proposal.

(17) France agreed to reflect further on the idea during the intersessional period with other interested Members for possible further consideration at the next Meeting.

(18) New Zealand introduced WP 24 *Improving the CEP's Role in Advising the ATCM on the State of Antarctic Environments* recalling lengthy discussions on how the CEP might meet one of its core functions of advising the ATCM on the state of the Antarctic environment as required by Article 12 (1) (J) of the Protocol. New Zealand suggested that it could be argued that the Committee is already going some way towards meeting this requirement, in that regular meetings and intersessional work of the Committee have provided a significant body of advice to the ATCM. Modifying CEP's working practices would help to ensure that it is dealing with priority issues in a targeted and efficient manner.

(19) New Zealand made a series of recommendations to the CEP noting that these did not constitute a significant departure from the way the CEP currently works, but did include modifications in order to make the CEP more dynamic and responsive to key environmental risks.

(20) Brazil considered that WP 24 proposed interesting mechanisms which could help the Committee to deal with the priority issues defined in the five-year work plan. However, some of the proposals may need further consideration, possibly through intersessional discussions.

(21) Australia supported the concept of taking a more strategic approach to the CEP's work as outlined in the paper and endorsed a number of recommendations contained in the paper, including:

- the need to adopt the five-year work plan and use it to set the CEP's agenda;
- encouraging increased engagement from Parties, Observers and experts in intersessional work;
- seeking dedicated support from the Secretariat for project work; and
- changing the structure of the CEP report to make its advice to the ATCM explicit.

(22) The UK also emphasised the importance of taking a more strategic approach to the CEP's work noting that it could take decisions to drop certain items and take a proactive approach to deciding on the advice required by the ATCM.

(23) With no further comments the Chair noted that WP 24 would be further considered under Agenda item 9b.

(24) The CEP Chair introduced WP 29 rev.1 *A Five-Year Work plan for the CEP: Report on Intersessional Review* (New Zealand). The Chair reminded the Committee that a draft five-year work plan, which was endorsed on a provisional basis by CEP X, had been made available on the CEP Discussion Forum to provide an opportunity for all Members to comment further on it during the intersessional period. The Chair noted that the comments received had been included in the current version of the work plan appended to the paper.

(25) The CEP Chair noted that of the comments received during the intersessional period, Members had indicated their support for taking a more strategic or prioritised approach to the work of the Committee. Several Members also stressed the need to retain flexibility within the work plan; the need to ensure that Members have the opportunity to raise additional subjects at meetings of the Committee at any time, and the requirement to regularly review the work plan to make sure it remains relevant and up-to-date.

(26) In response both Brazil and the US noted that the mechanisms for working would need to depend on the issue in question and the resources available. The US suggested that even spending half a day at a CEP meeting on a particular topic may assist in making a leap of progress. Several Members also encouraged greater participation in intersessional activities and discussion groups to assist in taking matters forward.

(27) France, supported by Germany, noted that the use of the priority words "high", "medium" and "low", implied possible disregard by the Committee of issues given a "low" status. Instead France suggested the use of a numbered ranking system, with which the Committee agreed.

(28) The Chair recommended that the work plan be modified to include the numbered ranking system, and was considered again under Agenda item 8, when the Committee discussed the issue of non-native species, (Appendix 1, page 463). As this matter had received the highest rating in the work plan, it would be a useful "test case" to plan the CEP's work on this issue over the next few years. At the Chair's suggestion, the work plan was considered again when the Committee prepared its Agenda for CEP XII.

(29) The Committee adopted the five-year work plan contained in Appendix 1.

(30) Brazil introduced WP 57 *Report on Effectiveness of Trial Informal Group* summarising the lessons learned from operating the Trial Informal Group (TIG) established to review protected and managed area management plans. Brazil noted that the group worked via electronic means to review the management plans it was tasked with assessing. The TIG had developed a useful checklist which had greatly assisted the group in reviewing management plans in a comprehensive, systematic and clear manner. The group concluded that the whole process of evaluation, once internal operational procedures were established, was quite successful as:

- it provided useful advice in a focussed structured manner;
- participation had been better than in previous ICGs;
- the manner in which the group approached the review process seemed to facilitate the task considerably;
- responses by proponents had indicated that it greatly helped to improve management plans; and
- the development of the checklists was a useful tool for both the TIG and, possibly, by those preparing or revising management plans in the future.

(31) As a result the TIG recommended that:

- the CEP agree to formalise the Trial Informal Group (TIG) as a permanent standing group to review management plans (SGMP);
- the CEP encourage proponents to draw closely on the *Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas* as well as the checklist developed by the TIG, when preparing management plans;
- the CEP encourage proponents to include a summary cover sheet when presenting new or revised management plans;
- the CEP encourage greater participation by Members in the intersessional review of management plans; and
- if the TIG is established on an ongoing basis, proponents should be encouraged to resubmit modified plans that the TIG has revised, back to the TIG at least 60 days before the CEP meeting.

(32) Many Members commented on how the intersessional work helped countries in the elaboration and revision of management plans, noting the TIG had responded to its mandate in an effective manner.

(33) New Zealand asked whether the TIG had been able to identify opportunities to make management plans more effective. In response Brazil, supported by Australia, commented that the group had engaged in a wide-ranging discussion on matters such as this, but that they had been constrained by their Terms of Reference.

(34) Sweden noted that revision of management plans would be easier to evaluate if they were written in a formalised way. Sweden suggested that the text be harmonised. This work could be taken on by the SGMP.

(35) Australia commented that the TIG had operated as envisaged in its proposal put to CEP X in WP 10.

(36) Russia emphasised the importance of ensuring the efficacy of management plans and that the management measures remained relevant and effective. To this end it was important in establishing such a group on an ongoing basis to ensure its Terms of Reference were appropriate.

(37) Germany questioned what options might be available for the Members and the CEP to gauge the extent to which comments on the management plan had been incorporated by the proponent.

(38) It was noted that some proponents (though not all) had added a further column to the TIG's checklist to indicate how the comments had been addressed and what changes to the management plan had been made. Australia noted that this point lay behind the TIG's

recommendation that management plans revised on the basis of the TIG's advice should then be resubmitted to the TIG for a final review.

(39) Argentina, in supporting the establishment of such a group to assess management plans on an ongoing basis, indicated its desire to ensure that membership of such a group was open to all Members. Argentina also encouraged SCAR participation in the group noting the importance of having scientific advice on key elements of management plans.

(40) In response SCAR indicated that assisting with the review of management plans was a role it had withdrawn from in recent years responding to the CEP's wish to take on the review completely under its own remit, and ensuing changes in SCAR's organisation and the changes to the process by which it engaged with the CEP. Nevertheless, a recent meeting to review SCAR's support to the CEP had recommended that SCAR should engage with the review of management plans, as provided for by Article 6 of Annex V, and it may look to re-engage on assessing those elements of management plans that fell within SCAR's remit. The Committee welcomed SCAR's willingness to look at this issue.

(41) Japan questioned what benefits would be acquired from the formal establishment of such a management plan review group as opposed to continuing with the TIG.

(42) Australia responded noting that assessing new and revised management plans was an ongoing task for the Committee that currently required considerable time at its annual meetings. Establishing a permanent group to undertake this role would provide for consistency and continuity in ensuring that management plans were fit for purpose. It was also noted that a permanent group would also benefit from a consistent membership and an agreed convener.

(43) CEP Advice to the ATCM:

The Committee therefore agreed an outlined proposal for establishing a subsidiary group on management plans (included at Appendix 3, page 473). The Committee forwarded this proposal to the ATCM for approval in accordance with Rule 10 of the CEP's Rules of Procedure.

(44) Pending ATCM approval, the Committee welcomed Ewan McIvor (Australia) as the convenor of the group.

Item 4: Operation of the CEP

(45) The Secretariat briefly introduced SP 3 *Secretariat Report 2007/08*, commenting that the CEP website is now integrated into the ATS website and available in the four Treaty languages.

(46) Members thanked the Secretariat for this important work and noted the ease of use of the new website.

(47) The Secretariat introduced SP 12 *Electronic Exchange of Information System*, recalling that at CEP X the meeting had agreed to continue using the system on a trial basis during the intersessional period. During this period several Members submitted comments and suggestions on the system. The Secretariat had modified the system in response to all the suggestions received and concluded that the trial period could now be considered complete.

(48) Many Members agreed that it was a very useful system and agreed in principle that it should be used. Some noted that they had questions of a technical nature but these could be addressed in the future.

(49) The Committee noted that in accordance with Resolution 6 (2001) some Members met their Article 17 requirements by providing an online report via the Secretariat's website.

(50) The Chair proposed to the meeting that the system could now be used for complying with the requirements of annual environmental exchange of information under Article 17 of the Protocol, noted that the system will evolve to respond to opportunities to further improve the system. The Chair encouraged Members to begin to use the system and will recommend to the ATCM that the system be utilized as a reporting tool for the CEP.

(51) CEP Advice to the ATCM:

The CEP proposes that the Electronic Information Exchange System be utilised as a reporting tool to exchange information required under Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty.

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

- IP 14 *Rapport annuel présenté par la France conformément à l'article 17 du Protocole au Traité sur l'Antarctique relatif à la protection de l'environnement 2008* (France)
- IP 15 *Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente* (Ecuador)
- IP 22 *Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Ukraine)
- IP 24 *Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Japan)
- IP 25 *Informe Anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente* (Spain)
- IP 34 *Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2007 – 2008* (Uruguay)
- IP 36 *Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty* (Belgium)

- IP 42 *Annual Report pursuant to Article 17 of The Protocol on Environmental Protection to The Antarctic Treaty* (South Africa)
- IP 55 *Report on the Implementation of the Protocol on Environmental Protection as Required by Article 17 of the Protocol* (United Kingdom)
- IP 68 *Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (China)
- IP 71 *Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007-2008* (Italy)
- IP 90 *Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007/2008* (New Zealand)
- IP 96 *Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty* (Peru)

Item 5: International Polar Year

(53) SCAR Introduced IP 59 *International Polar Year 2007-2008 Planning Document: 2008 and Beyond*, stressing that IPY seemed poised to achieve and even exceed its ambitious goals. SCAR noted that IPY will make major advances in polar knowledge and understanding. SCAR also commented that whilst most legacies will take longer to develop, important outcomes and networks are, nevertheless, under development and, with time and continued international co-ordination, they will achieve an exceptional level of interest and participation.

(54) Dr Colin Summerhayes, on behalf of the IPY Steering Committee, noted the significant investment made to date in IPY science and called for sustainable funding to support the IPY legacy. In particular, funding in support of data management, informing the public and leaving a scientific legacy were still needed. Proper data management from IPY activities would be key to the legacy and would require national data co-ordinators who would provide secure data archives.

(55) SCAR noted that the Arctic Council had been asked to support a scoping study on IPY legacy issues and a workshop of stakeholders in IPY legacy topics. The idea to include Antarctic legacy issues into the workshop had been proposed so that it would be bi-polar in character.

(56) ASOC noted its work with the Association of Polar Early Career Scientists (APECS) in preparation for a Polar Youth Forum organised for the time of the 2009 ATCM in the United States, in the context of its IPY endorsed Environmental Legacy Project.

(57) The Committee encouraged Members to consider how further funding might be found in support of IPY legacy events and activities.

(58) Brazil presented IP 125 on the *South American Network on Antarctic Marine Biodiversity (BioMAntar)*, which involves seven South American countries: Argentina,

Brazil, Chile, Ecuador, Peru, Uruguay and Venezuela. It was emphasised that these countries are making an effort to optimise logistics and undertake joint scientific activities in the Antarctic region. Brazil advised the Meeting that one good example of this increasing cooperation is the Latin American consortium for the Census of Antarctic Marine Life (LA CAML). Discussions involving scientists and administrators of these Latin American Programmes had been undertaken during the past three years to identify common scientific interests, research interfaces, sampling protocols, data exchange, and education and outreach activities. It was also noted that the countries are planning joint field work activities for the next austral summer.

(59) Australia commented that this consortium represented an excellent example of Antarctic cooperation and a lasting legacy of IPY.

Item 6: Environmental Impact Assessment

6a) Consideration of draft CEEs forwarded to the CEP in accordance with paragraph 4 of Article 3 of the Protocol

(60) China introduced WP 5 *The Draft Comprehensive Environmental Evaluation for the construction and operation of the Chinese Dome A Station in Antarctica* and IP 4, with the same title, containing the complete draft CEE document. China supplemented its introduction of WP 5 with a powerpoint presentation summarising the proposed activity and the key findings of the draft CEE.

(61) China noted that the draft CEE had been circulated on 31 January 2008, 120 days before CEP XI, in accordance with the requirements of Annex I to the Protocol.

(62) The new Chinese Station is proposed to be located in the hinterland of East Antarctica at the summit in the central part of Dome A ice sheet with an elevation of 4093m (80°222 003 S; 77°212 113 E). The new Station will be located 1228km from Zhongshan Station. The draft CEE, prepared by the Chinese Arctic and Antarctic Administration (CAA) of the State Oceanic Administration (SOA), assessed the impacts arising from the transportation process for cargo and personnel to Dome A, the construction of the station and its ongoing operations.

(63) The location of the station had been selected because it is:

- an ideal site for the study of global climatic and environmental change;
- one of the most suitable sites for obtaining deep ice cores providing a record exceeding one million years; and
- a favourable site for monitoring and detecting global background atmospheric baseline environments; and a suitable site for astronomical observations and ozone monitoring.

(64) The construction of Dome A Station is planned to commence in 2008/09 and be completed in two austral summers, by the 2009/10 season. The station has a design life of 25 years. In the short term it will accommodate 15-20 people for summer only, and in the long term it will be used by 25 people as a year-round station. China noted that the design of the station followed the principles of environmental protection, safety and energy conservation, and that the environmental impact will be minimised during its construction, operation and decommissioning phases.

(65) China noted that the draft CEE had continued to be developed since its circulation to the Parties and to the Committee and particular attention had been paid to issues related to safety of expedition members, energy saving initiatives, scientific study and logistical support activities.

(66) China reaffirmed that the design of the Dome A Station was scientific, rational and technically practicable. China's draft CEE had concluded that the construction and operation of the Station would have no more than minor or transitory impacts on the environment. Moreover, the implementation of the prevention and mitigation measures outlined in the draft CEE would further reduce identified impacts. China considered that the scientific benefits of constructing the station outweighed the identified environmental impacts.

(67) Australia introduced WP 15 *Report of the Intersessional Open-ended Contact Group to Consider the draft CEE for the "Proposed Construction and Operation of the New Chinese Research Station at Dome A"*. Australia recalled that the intersessional contact group had been established in accordance with the *Procedures for consideration of draft CEEs* (Appendix 4 to the Final Report of CEP X) from which its terms of reference had been drawn. Australia noted that ten Members and one observer had participated in the intersessional discussions.

(68) Australia stated that the ICG had determined that the draft CEE generally conformed to the requirements of Article 3 of Annex I of the Environmental Protocol, but that several participants identified a number of matters for which they considered further information or clarification should be provided in the final CEE. In particular, many participants suggested the proponent should consider expanding the scope of the impact assessment to more adequately cover the proposed activities as described. In this respect, it was felt that more attention should be given in the final CEE to:

- the planned transition to a year-round station and the impacts associated with operating a year-round base;
- the research activities to be undertaken at the station, in particular ice core drilling;
- the movement of personnel and equipment through the Larsemann Hills ASMA; and
- the possible use of aircraft at and around the station.

(69) Several ICG participants also suggested the final CEE should provide more details about planned waste management measures, including the handling of human waste during construction and operational phases, the management of ice pits, and the storage and handling of hazardous waste, and plans for fuel handling and storage.

(70) Australia also commented that the ICG had worked well, particularly as a first test for the new procedure adopted at CEP X, and thanked ICG participants for their contribution.

(71) Several ICG participants agreed with the proponent's conclusion that the proposed activity is justified on the basis of the significant contribution it is likely to make to the support and conduct of important science. However, some participants expressed the view that, for a range of reasons identified in the analysis of the draft CEE, it would be more appropriate to conclude that the activity is likely to have more than a minor or transitory impact on the Antarctic environment. A range of editorial suggestions were also put forward by the ICG.

(72) China thanked the CEP Members and, in particular Mr Ewan McIvor for his effective work in coordinating the ICG. China noted that IP 77 *Additional Information on draft CEE on proposed new Chinese Dome A Station in Antarctica*, provided its initial response to each of the points raised by the ICG and that the comments and suggestions received would be taken into account in preparing the final CEE.

(73) Members thanked China for presenting its detailed responses in the form of IP 77. This approach was regarded as a useful model to follow for future draft CEEs.

(74) Ukraine questioned how waste would be handled, noting, for example, that the draft CEE did not estimate quantities of human waste expected to be removed from the station.

(75) China responded that waste management, including quantities, was already addressed in the draft CEE, and additional information will be included in the final CEE.

(76) The Russian Federation congratulated China on its ambitious and pioneering proposal, but recognised the unique difficulties that inland stations presented. Russia commented on the reported power requirements for the new station which were, in its view, insufficient especially when scientific drilling is undertaken. Russia, supported by France, also requested further information on the planned air activities, noting that this would add an increased environmental impact.

(77) Germany expressed a wish to see fuller consideration given to the likely impacts on the Larsemann Hills Antarctic Specially Managed Area, and questioned the time that will be spent transiting through the Larsemann Hills ASMA each season.

(78) New Zealand added that they would like to see more consideration given to cumulative impacts in the document and also to the likely impact on wilderness values. New Zealand noted that consideration of wilderness values more generally was an issue that the Committee may wish to give further attention to.

(79) In response China noted that mitigation measures to reduce impacts on the Larsemann Hills ASMA were contained in the draft CEE. Approximately 10 days would be spent transiting through the ASMA each season. The provisions of the Larsemann Hills ASMA would be fully adhered to. Regarding the planned scientific drilling, China noted that this activity is not envisioned until 2011 and a further environmental impact assessment will be prepared for that specific activity.

(80) With regard to power requirements, China indicated that it would give further consideration to the matter and would provide more details in the final CEE. Regarding air operations, as mentioned in the draft CEE, aircraft will be used for emergency rescue and science support. The plane was likely to be a fixed-wing, ski-equipped aircraft, which would conduct about three rotations to Dome A each season. Fuel for air operations will be stored at a relay site between Dome A and Zhong Shan station. China noted that it would be keen to draw on the experience of those already operating aircraft in inland Antarctica, in planning for these activities.

(81) France noted that the project will contribute to fundamental scientific knowledge and offered to share its experience gained from the French / Italian Concordia Station and noted that a Chinese delegation had been invited to visit this station in the near future. France also commented on the need to minimise duplication of scientific research.

(82) China thanked France and Italy for the invitation to visit Concordia Station and noted that the new Chinese station will adopt an open policy as a science base for other countries in the spirit of the Antarctic Treaty. China responded that before making the plan for constructing the new Dome A Station, it had held some international workshops on the feasibility study on the setting up of the new station to avoid the duplication of scientific activities undertaken by other National Programmes. China noted that it will take the environmental impacts from the scientific programme, including the wilderness values, into account in the final CEE.

(83) The UK thanked China for the draft CEE and the additional information provided in IP 77 which answered many of the questions posed by the ICG, in which the UK had participated. The UK noted the scope of the proposed science programme and agreed with New Zealand on the need for greater consideration of cumulative impact.

(84) Many Members welcomed the scientific benefits that would arise from the new station. Romania also welcomed China's efforts to learn from the experience of other operators, and encouraged China to make use of modern technology to reduce emissions and other impacts on the environment.

(85) China indicated that it is always willing to enhance collaboration and communication with other Parties and also pointed out that as part of its preparation for constructing Dome A Station Chinese professionals and experts had visited the inland stations and obtained significant experience and information.

(86) India congratulated China on the presentation of the draft CEE and pointed out that the impact on the environment appeared to be underestimated. It hoped that the final CEE would incorporate the suggestions given by delegations.

(87) The US noted that for China to ensure that the cumulative impacts of the activities associated with the construction and operation of the new station were fully taken into account it should also take into account the potential impacts of planned scientific activities. The US also commented that the current draft CEE would most likely not account for all activities during the life time of the station and that separate EIAs would be appropriate for unforeseen or as yet unplanned activities.

(88) Norway noted that in the past ice core drilling projects had been subject to CEE level assessment in their own right and queried in that context whether it would be appropriate to do a separate assessment for the scientific activity taken rather than now including it in the final CEE for the Dome A Station.

(89) The Netherlands encouraged China to account for drilling fluids remaining in ice core drill holes in the final CEE.

(90) ASOC commented that every new Antarctic station has a cumulative environmental impact. Construction of the new Chinese station would have impacts on both the wilderness of the high plateau region as well as impacts on the Larsemann Hills ASMA through the logistic support activities of the station. ASOC therefore asked China whether this station will be removed after a certain time and what that time period might be.

(91) China responded that cumulative impacts of the activities would be considered in the final CEE. Regarding the dismantlement of the station, and noting that the station has a design life of 25 years, China noted it would give consideration to the removal of the buildings. China also welcomed the additional comments and noted that it would take these into account in preparing the final version of the CEE. China would also be open to considering further comments on the CEE as it is being finalised and when it is circulated in accordance with Annex I to the Protocol.

(92) China commented that the draft CEE's conclusion raised two issues: whether a CEE should conclude that the activity was likely to have more than a minor or transitory impact; and whether the conclusion of its draft CEE was adequately supported by the information contained in the document. On the first issue, China considered that a CEE could reach one of two conclusions according to Article 3 of Annex I to the Protocol.

(93) China noted that, in general, a CEE would conclude that the activity was likely to have more than a minor or transitory impact. However, compared with other stations recently or soon to be built in Antarctica, the proposed Dome A station was small in scale. A smaller labour force would be involved in its construction and few personnel would stay at the station during its operation. Furthermore, the duration of its operation would be short (only two months each year), including the travel time, for about half of its life span. China noted

that it was available to undertake a further environmental evaluation based on the discussion and the full improvement of the whole plan.

(94) The Chair thanked China for its willingness to consider all of the points raised.

(95) CEP Advice to the ATCM:

The Committee discussed in detail the draft Comprehensive Environmental Evaluation (CEE) prepared by China for "Proposed Construction and Operation of the new Chinese Dome A Station, Dome A, Antarctica" (WP 5 and IP 4). It also discussed the comprehensive report by Australia of the ICG established to consider the draft CEE in accordance with the Procedures for intersessional CEP consideration of draft CEEs (WP 15), and additional information provided by China in response to issues raised in the ICG (IP 77). Those discussions are summarised in paragraphs 60-93 above.

Having fully considered the draft CEE, the Committee advises ATCM XXXI that:

- The draft CEE and the process followed by China generally conform to the requirements of Article 3 of Annex I to the Protocol on Environmental Protection to the Antarctic Treaty. When preparing the required final CEE, the proponent should closely consider, and address as appropriate, the comments raised by Members. In particular, the ATCM's attention is drawn to the suggestion that China should consider expanding the scope of the impact assessment in the final CEE to more adequately cover the full scope of the proposed activity (Section 3.1 of WP 15 and paragraphs 68-89 above).
- The Committee generally agreed with China's conclusion that the proposed activity is justified on the basis of the significant contribution it is likely to make to the support and conduct of important science. Many Members expressed the view that it would be more appropriate for the CEE to conclude that the activity is likely to have more than a minor or transitory impact on the Antarctic environment (Section 3.2 of WP 15).
- The draft CEE is clear and well-structured, and the final CEE could be improved by taking into consideration editorial suggestions raised by ICG participants (Appendix B to WP 15) and by consolidating text to reduce repetition.

General discussion on draft CEEs

(96) Many Members commented on the conclusions that may be drawn by CEEs. Some Members agreed that a CEE could legitimately conclude that the activity in question would have *no more than* a minor or transitory impact, whilst other Members felt that a CEE should inherently conclude that the activity *will have more than* a minor or transitory impact.

(97) Norway noted that the breadth of activities associated with the station previously discussed, in addition to the station itself, justified a conclusion that the impacts will be

more than minor or transitory. Norway noted, however, that a "no more than minor or transitory" conclusion can be reached through a CEE process.

(98) Argentina reminded the Committee that the CEP had discussed this issue before. EIA is a process as represented in *Guidelines for Environmental Impact Assessment in Antarctica* adopted through Resolution 4 (2005). At the time of the preparation of the Guide, it had been concluded that a CEE document will only be prepared on a proposed project which is deemed likely to have more than a minor or transitory impact.

(99) Australia noted that Article 3 of Annex I states *"If an Initial Environmental Evaluation indicates or if it is otherwise determined that a proposed activity is likely to have more than a minor or transitory impact, a Comprehensive Environmental Evaluation shall be prepared"*. The Protocol does not prescribe what the conclusion of the CEE should be, only that a draft CEE must be circulated. As such, the final conclusion should be determined by the impacts identified by the environmental impact assessment process and the extent of mitigation measures. As such Australia believed it is entirely possible that some CEEs could indeed conclude that an activity will not have more than a minor or transitory impact.

(100) France concurred that Article 3 of Annex 1 does not pre-judge the conclusion of a CEE, and that the conclusion of a CEE is not necessarily of fundamental importance. What is important is that a CEE level assessment allows for a detailed analysis of the impacts of an activity and a process of review by the Members and discussion during the CEP meeting.

(101) Spain noted its agreement with Argentina stating that, according to Article 2, Annex I to the Protocol the step up to a CEE from an IEE would be undertaken if the IEE result shows that the level of impact could be more than minor or transitory.

(102) The Czech Republic noted that because the terms "minor or transitory" in the Protocol are not defined, such ambiguity was always likely to remain.

(103) The Chair noted that different views on the conclusions of CEEs clearly remained and that it was unlikely that a consensus view could be reached. Nevertheless, the discussion had been useful, would allow Members to reflect on the points made and could be returned to at future meetings.

(104) Argentina and France welcomed the translation of the non-technical summary of the Chinese draft CEE in to the four Treaty languages, which had assisted intersessional review of the document. Argentina felt that translation of draft CEEs in their entirety, given the technical level of the language used, would be preferable.

(105) The Chair noted that this matter had been raised with the ATCM last year, and that the ATCM had neither agreed nor disagreed with the proposal. The ATCM had simply noted that the budgetary consequences would need to be taken into account. The Secretariat noted that the matter was a financial one as there was currently no Secretariat budget line to provide for translation of draft CEEs.

(106) The Chair noted that an interim solution was to continue to at least provide translations of the non-technical summaries of each draft CEE.

6b) Other EIA matters

(107) SCAR introduced WP 12 *Human Disturbance to Wildlife in the Broader Antarctic Region: A Review of Findings,* provided in response to a request from CEP X to report on the current state of knowledge with respect to human disturbance of wildlife in Antarctica. WP 12 included a comprehensive review paper, entitled: *Review of recent research into the effects of human disturbance on wildlife in the Antarctic and sub-Antarctic region*.

(108) SCAR drew attention to the Working Paper's two major conclusions and three recommendations. Specifically, SCAR noted that the effects of human disturbance on Antarctic wildlife are highly variable and that no 'one size fits all' solution can be applied to managing human disturbance effects on wildlife. SCAR also noted with concern the decline in the number of long-term studies being undertaken and recommended that Parties encourage long-term work that would help improve management of wildlife populations in the region.

(109) SCAR also suggested that site-specific, timing-specific and species-specific studies are required to produce results of use in managing human activities near wildlife aggregations, and that investigations of interactions between human disturbance and other factors affecting wildlife populations, such as climate change and incidental mortality, are urgently required.

(110) The Committee endorsed these recommendations and congratulated SCAR on its excellent report. Many delegations noted the importance of undertaking long-term research, especially in the context of other factors affecting wildlife populations in the region, and that SCAR's report would be invaluable for ongoing discussions on this topic.

(111) In welcoming SCAR's paper, New Zealand noted that the CEP was not endorsing a "one size fits all" approach distance, and suggested that a further review of this matter was required by the CEP.

(112) Australia noted that it placed a high level of importance on providing appropriate guidance and education to its expeditioners and that its current approach distances accounted for different species and stages in their life cycles as well as other factors.

(113) Argentina noted the need to have educational material regarding behaviour around wildlife.

(114) IAATO noted the importance of education in mitigating human disturbance and stated that in its view the current 5 metre rule was regarded as the basic minimum distance; tourists were warned to stay further away if disturbance was perceived to be occurring.

(115) The US, supported by the UK, emphasised SCAR's comment with respect to conducting long-term studies in the context of other influences and noted that this was in

part addressed through CCAMLR's ecosystem monitoring programme, from which the CEP could also benefit. The US noted that the idea of a joint CEP / Scientific Committee workshop was proposed and that discussion of such monitoring studies could form a useful part of that meeting.

(116) The UK urged the need for more studies to better inform management decisions regarding wildlife distances and urged caution against drawing general or generic conclusions from one or two specific case studies. The UK also noted that it would be continuing with its long-term penguin monitoring studies at Port Lockroy and would ensure the data and results were made available in due course.

(117) COMNAP noted that it was preparing an on-line library of current training materials available through national programmes.

(118) The Committee welcomed this initiative noting that it would be a useful means of sharing information and educational material with respect to current approach distances.

(119) France introduced WP 34, *A Mechanism for Centralizing Tourism and Non-governmental Activity Declarations and Authorization Requests Suitable for Taking Cumulative Impacts into Account*. It noted that, although the impact of a single activity in a given site can be assessed as less than minor or transitory, it had became difficult to estimate the cumulative impact of the overall activity resulting from visits of several operators to a given site. France recalled that, according to the Protocol, tourist activity was subjected to a prior environmental impact assessment and that it had to be done based on sufficient information. It also mentioned that several recommendations adopted recently by the ATCM were directly or indirectly related to the cumulative impacts of tourist activity in the Antarctic.

(120) France proposed to establish a mechanism for centralising tourism and non-governmental activity authorisation to allow national competent authorities to be aware of the information and their status, in real time, before October 1st (the deadline for exchanging pre-season information) to better consider the possible cumulative environmental impacts at a given site. France suggested that an ICG should be established to work in close cooperation with the Secretariat to consider such a procedure.

(121) The Committee agreed on the importance of new initiatives to help develop a better understanding of cumulative impacts.

(122) Several Members indicated that they could support France's proposal in principle, but highlighted practical concerns with its implementation bearing in mind significant differences in the way authorising agencies in various countries operated, and the need to avoid duplication of effort between such a centralised system and Parties' own requirements.

(123) Spain stated that in order to avoid a situation whereby individuals were able to elude their own national legislation, those organising non-governmental expeditions should seek authorisation from their own national authorities, according to the provisions of Annex I to the Protocol, Measure 4 (2004) and Resolution 4 (2004).

(124) Several Members and COMNAP noted the importance of having data available on tourism activities, particularly with landings close to stations and bases.

(125) The US suggested the need to have reference to existing data on use of visitor sites.

(126) Argentina noted that relevant information, particularly IEEs on tourism activities, was not always publicly available. Access to such information would be valuable to adequately assess cumulative impacts.

(127) Australia noted that cumulative impact was a vexing issue that the Committee had considered over many years, and that further work was scheduled in the five-year work plan. It considered there may be challenges with France's proposal, and that it may be better to separate consideration of the proposed mechanism from further work to understand cumulative impacts.

(128) IAATO thanked France for WP 34 and the useful discussion. IAATO had some concerns with the assumption that cumulative impacts could be linked only to numbers of visits and/or visitors, noting that consideration had been given to the complexity of issues surrounding assessment of cumulative impacts for many years. That said, IAATO supported the concept of a single database of information on all visitor activities as good cooperation and coordination is integral to successful management.

(129) IAATO also noted that in addition to the current distribution of detailed information on Member activities prior to the season to COMNAP and other Parties, they would be pleased to pass this information on to other National Authorities if this would be of use. In addition, following a comment from New Zealand on the important role of guides, IAATO noted that field staff are of key importance in the current mechanism of identifying and assessing potential impacts thus allowing for immediate action to be taken.

(130) Argentina questioned IAATO as to whether there is a post-season evaluation of the differences between planned and actual activities.

(131) IAATO said that estimates from field staff indicate a 10 – 15% change from the pre-season planning.

(132) IUCN urged that a comprehensive review of Antarctic tourism be undertaken so as to better inform appropriate management measures.

(133) New Zealand raised the idea of a detailed study at a highly visited tourist site to gather hard data to help inform the process of assessing cumulative impacts.

(134) CEP Advice to the ATCM:

The Committee discussed the proposals set out in WP 34. Whilst several Members expressed in-principle support, a number of concerns were raised regarding the practical implementation of the proposed database. The Committee reinforced the importance of adequately assessing cumulative impacts at regularly visited sites, but noted the challenges

involved in gathering appropriate information and data. Noting that WP 34 would be considered also by the ATCM through its Tourism Working Group, the Committee agreed that it would await the outcomes of that discussion before assessing how it might contribute further to the issue.

(135) The United Kingdom introduced WP 60 *Quantifying Atmospheric Emissions in Antarctic Comprehensive Environmental Evaluations* reporting on an analysis of the emissions estimated in final CEEs prepared since 1989. The UK noted the wide variety of chemical species reported on, and the range of different methodologies used in the final CEE produced since the Environment Protocol entered into force.

(136) To assist Parties compiling final CEEs, the UK proposed to develop a common approach to emission reporting in CEEs based on existing agreed international standards. If the CEP considered that this might be a useful approach, the UK indicated that it would be willing to prepare a more detailed paper, in conjunction with interested Parties, for consideration at CEP XII.

(137) Many Members and ASOC indicated their support for the UK , recognising the benefits of being able to have a consistent approach to calculating emissions, not least when preparing CEEs.

(138) China commented that whilst this appeared to be a useful proposal it may not be a priority matter for the Committee. China also expressed concern that the CEP should not be duplicating efforts of other organisations, particularly with respect to CO_2, which was not considered to be a pollutant by some countries.

(139) Germany and the US expressed caution over attempting to set standards for calculating emissions, with many countries bound by their own domestic standards.

(140) In supporting the proposal Russia noted the EU standards on transboundary transfer of pollutants may be a useful reference.

(141) COMNAP offered assistance to the UK of its Energy Management Network which had embarked on drafting proposals for indicators of energy consumption, noting that whilst the level of Antarctic CO_2 emissions were insignificant compared to global emissions, the world was watching Antarctica and it was therefore important to take an appropriate leadership and educational role in the Antarctic context.

(142) In responding the UK welcomed the feedback provided, noting that it was not intended that any common approach would supersede national requirements or other accepted standards. It also recalled that its proposal was to identify a common approach to calculating emissions in CEEs for activities undertaken in Antarctica. The UK also agreed with COMNAP that whilst the contribution of Antarctic emissions to global emissions was negligible, there was an opportunity for Antarctica to set an example to the rest of the world.

(143) The Committee encouraged the UK and other interested Parties to further develop the proposal for consideration at CEP XII.

(144) The Secretariat introduced SP 8 covering the *Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2007 and March 31st 2008*, noting that information had been received on more than 80 EIAs from 15 Parties. The Secretariat also noted that the web based EIA database now contained entries on 677 EIAs, many of which also include the actual EIA document in electronic format.

(145) Romania introduced IP 1 *Initial Environmental Evaluation Law-Racovita Base*, on the assessment of impacts associated with scientific and logistic activities at Law-Racovita Base, Larsemann Hills, during the Romanian Antarctic Expedition 2008/09. The adverse impacts on the environment will be minor.

(146) India introduced IP 16 *Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica.* India informed the Meeting that a preliminary design of the station was prepared and that, during the 2007/08 season, further studies were carried out in Larsemann Hills. Construction of the station will start in summer 2009/10 and it will be commissioned in 2010/11.

(147) Belgium requested clarification on the timing of the circulation of India's final CEE, and expressed its concern over potential impacts on the lakes in the area, in particular lake 7, in which unique species and a rich biodiversity had recently been identified.

(148) India confirmed that the final CEE would be circulated at least sixty days before the commencement of the activities in accordance with the requirements of Annex I to the Protocol. India also stated that it was well aware of the research that had been conducted on lakes in the area, and that lake 7 would not be interfered with.

(149) India introduced IP 26 *Initial Environmental Evaluation for Installation of Earth Station at Maitri, Schirmacher Oasis, Antarctica*, noting that the objective of the activity was to provide better communication and real time data transfer facility between Antarctica and mainland India. Once operational it will help in enhancing the capabilities and efficacies of Indian polar orbiting satellites. The IEE had concluded that the adverse impacts on the environment at the site were no more than minor or transitory.

(150) India also presented IP 49 *Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Maitri, Schirmacher Oasis, Antarctica,* informing the meeting that the long-term data collected on wind speed indicated the potential of harnessing wind energy to convert into electrical energy. The installation of the WEG is planned in the winter of 2008/09 and India concluded that the gains through electricity generation by wind will reduce the sustained impact on the environment. India had concluded that an IEE was sufficient to address the impacts of the activity.

(151) ASOC introduced issues concerning EIA and tourism addressed in IP 41 *A decade of Antarctic tourism: Status, change and actions needed.* ASOC considered that tourism EIAs hitherto had been Initial Environmental Evaluations or Preliminary Assessments, which often did not go into adequate detail about what is actually proposed, and insufficiently

address cumulative impact. EIAs for tourism operations tended to focus on routine activities, without taking into consideration the potential impact of accidents. The EIAs of the largest ship to sail in Antarctica ever, in 2006-07, which carried nearly 3,000 passengers, and of the *M/V Explorer*, which sank in Antarctic waters in November 2007, were used as examples. ASOC recommended CEP look critically at the application of EIA to tourism. EIAs could be conducted for sites for which site-specific guidelines are in place, which are among those under higher tourism pressure, to better assess cumulative impacts.

(152) The US strongly disagreed with ASOC's overarching criticism of the EIA process for tourism activities, particularly with regard to multi-year assessments, and with ASOC's conclusions regarding the level of assessment for the 3000 passenger ship activities.

(153) Russia introduced IP 44 *Results of Russian studies of the subglacial Lake Vostok during the season 2007-2008.* Russia recalled a number of incidents that had occurred in borehole 5G-1 during 2007 that had delayed progress with further drilling of the ice core and penetration of the sub-glacial Lake Vostok. Further attempts would be made towards recovery of the trapped drill, though if this was not successful Russia plans to abandon the area where the drill is trapped and instead drill around the accident area.

(154) As a result of these technical delays, and a delay in collecting further data and information on ice characteristics near the ice sheet bottom, Russia noted that it had not been possible to complete the final CEE for penetration of Lake Vostok. However, Russia stated that it would present the final version of the CEE as soon as electrical-mechanical drilling is stopped close to the lake surface and before commencing with thermal drilling for lake penetration.

(155) Russia also presented IP 45 *On obtainment of permit to authorize activities of the Russian Antarctic Expedition for the period from 2008 to 2012,* on the authorisation process of the Russian Antarctic Expedition for next the 5-year period. Russia said that an IEE was prepared and it indicated that all the considered activities being carried out now and planned to be carried out during the next 5-year period, would have no more than a minor or transitory impact on the Antarctic environment.

(156) New Zealand introduced IP 101 *The ANDRILL Independent Environmental Audit* recalling that the ANDRILL CEE had provided for an independent audit to be undertaken. Such an audit was conducted by the British Antarctic Survey and the Australian Antarctic Division on the ANDRILL McMurdo Sound Portfolio project in November 2007 on the invitation of Antarctica New Zealand.

(157) The audit had concluded that the programme was undertaken in compliance with the Protocol and largely in accordance with the CEE, and that the impacts were believed to be within the environmental limits established in the CEE. The audit provided several recommendations for the ANDRILL partners to consider. New Zealand concluded that such an external audit could be considered a satisfactory way of achieving the requirements of Resolution 2 (1997), and encouraged other Members to provide for such audits for activities carried out under CEEs.

(158) Australia and the UK thanked New Zealand for the opportunity to carry out the audit and supported the recommendation that Parties use independent audits to assess the findings of CEE level activities, whenever possible.

(159) Ukraine presented IP 102 *On the Issue of the Replacement of Fuel Tanks at Vernadsky Station,* informing the meeting of the progress made in installing new fuel tanks at Vernadsky station. Ukraine also noted that half of one of the old tanks had now been cleared of oil product deposits. It is planned to finish clearing both of the old tanks and to use them as a storage facility for dry solid materials.

(160) Ukraine also introduced IP 124 *Initial Environmental Evaluation "RMM-technology on recycling of solid food wastes at Ukrainian Antarctic Vernadsky station"* on the development and usage of a new technology on recycling of solid food wastes to conform to Article 1(2) of Annex III of Environment Protocol.

(161) Ecuador presented IP 105 *Plan de Manejo Ambiental Estación Maldonado Ecuador* on an environmental management programme at Maldonado Station which included a number of activities such as prevention of environmental impacts, contingency planning, recovering of affected zones, training, monitoring and measures to protect wildlife.

Item 7: Area Protection and Management

7a) Management plans

i. Draft management plans which had been reviewed by the trial informal group

(162) The Committee considered four draft management plans for Antarctic Specially Protected Areas and one draft management plan for an Antarctic Specially Managed Area which had been reviewed intersessionally by the Trial Informal Group (TIG) established at CEP X.

(163) As convenor of the TIG, Brazil presented WP 58 *Review of Draft Management Plans by Trial Informal Group*. Brazil recalled that the TIG had developed a checklist for assessing protected and managed area management plans and informed the Meeting that this had greatly assisted their work. Brazil noted that the draft conclusions of the TIG were made available at the CEP Discussion Forum in the four Treaty languages and feedback was received by several Members and observers.

(164) The TIG had reviewed one ASMA and four ASPA Management Plans in accordance with the terms of reference set by CEP X.

(165) *Draft Management Plan for ASMA No X: South-west Anvers Island and Palmer Basin* – was presented under WP 39 (United States).

(166) The TIG considered that the draft Management Plan was well written and that it adequately addressed the provisions of Annex V and relevant CEP guidelines. The TIG noted that the CCAMLR Scientific Committee had reviewed the draft Management Plan

and had supported the proposal, noting that some minor changes would be required. The TIG recommended only minor amendments to this Management Plan, and the United States submitted a revised draft adequately addressing those recommendations. Separate to the TIG, comments on the draft Management Plan were submitted by ASOC.

(167) The TIG therefore recommended that the CEP adopt the Management Plan for the proposed South-west Anvers Island and Palmer Basin ASMA.

(168) *Draft Antarctic Specially Protected Area (ASPA) Management Plan for Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica* – was presented under WP 19 (Australia and China).

(169) The TIG considered that this draft Management Plan had been prepared to a high standard, and that it adequately addressed the provisions of Annex V and relevant CEP guidelines. The TIG recommended only minor amendments to this Management Plan, and Australia and China submitted a revised draft adequately addressing those recommendations. Separate to the TIG, no comments on the draft Management Plan were submitted by other Members.

(170) The TIG therefore recommended that the CEP adopt the Management Plan for the proposed Amanda Bay ASPA.

(171) *Revised Management Plan for Antarctic Specially Protected Area No 150 Ardley Island, Maxwell Bay, King George Island* – was presented under WP 46 rev. 1(Chile).

(172) The TIG considered that Chile had made good progress with updating the Management Plan for Ardley Island, and that the draft revised Management Plan addressed the provisions of Annex V and relevant CEP guidelines. The TIG recommended only minor amendments to this Management Plan, and Chile submitted a revised draft adequately addressing those recommendations. Separate to the TIG, comments on the draft Management Plan were submitted by Germany and ASOC.

(173) The Trial Informal Group recommended that the CEP adopt the revised Management Plan for ASPA 150, Ardley Island.

(174) *Revised Draft Antarctic Specially Protected Area Management Plan for Mount Harding, Grove Mount, East Antarctic* – was presented under WP 52 (China).

(175) The TIG considered that the draft Management Plan should be modified to more closely comply with the provisions of Annex V and relevant CEP guidelines. The TIG recommended a number of changes to this Management Plan, and China submitted a revised draft adequately addressing those recommendations. Separate to the TIG, comments on the draft Management Plan were submitted by Australia. Australia indicated that the revised draft Management Plan adequately addressed those comments.

(176) The Trial Informal Group recommended that the CEP adopt the Management Plan for the proposed Mount Harding ASPA.

(177) *Antarctic Specially Protected Area (ASPA) Management Plan for Marion Nunataks, Charcot Island, Antarctic Peninsula* – presented under WP 53 (United Kingdom).

(178) The TIG considered that the draft Management Plan was well written and that it adequately addressed the provisions of Annex V and relevant CEP guidelines. The TIG recommended only minor amendments to this Management Plan, and the United Kingdom submitted a revised draft adequately addressing those recommendations. Separate to the TIG, no comments on the draft Management Plan were submitted by other Members.

(179) The Trial Informal Group recommended that the CEP adopt the Management Plan for the proposed Marion Nunataks ASPA.

(180) The Committee thanked the TIG, and its coordinator Tânia Brito in particular, for the valuable work done during the intersessional period in assessing these management plans and for the advice it had provided.

(181) With regard to the new draft management plans for South-west Anvers Island and Palmer Basin ASMA, and Marion Nunataks ASPA, the Committee agreed that these plans could be forwarded to the ATCM for adoption.

(182) Romania suggested that China consider including soil micro organisms in the ASPA Management Plan for Mount Harding.

(183) China stated that the primary consideration of the ASPA in Mount Harding is to protect the unique geomorphological features. The new finding of microbiological organisms in the cold desert soil in Mount Harding made by Romanian scientists is interesting, but needs further investigation. China would like to consider it in the future.

(184) With regard to the new draft Mount Harding Management Plan Japan asked for clarification with respect to prohibitions on bringing fauna and flora in to the protected area. With some minor changes to the text the Committee endorsed the Management Plan and forwarded it to the ATCM for adoption.

(185) With regard to the new draft Amanda Bay Management Plan, Japan asked for clarification with respect to the management of human waste in the area. Following clarification of this issue from Australia, the Committee agreed to forward the Management Plan to the ATCM for adoption.

(186) Regarding the revised Management Plan for ASPA 150, Ardley Island, Germany reminded the meeting that it was working towards the development of a future ASMA for Fildes Peninsula, which includes Ardley Island, and therefore it considered that the review of the ASPA Management Plan should be considered as part of the process for designating the ASMA in Fildes Peninsula. Besides, some comments from Germany made in the intersessional work were not properly reflected. Germany therefore noted that it could not approve the revised ASPA during the meeting and recalled that the existing Management Plan remains in force until 2010.

(187) Chile responded that it had not anticipated comments from Germany after the review process by the TIG. Chile noted that the current version of the Management Plan was adopted in 1991 and that this updated draft addressed the latest knowledge of the site and included new measures for improved protection. Several delegations supported the comments made by Chile.

(188) Some delegations asked Chile for more clarification on the change in the boundaries of the ASPA to allow tourism visits to some areas that now would be outside the boundaries of the protected area. ASOC noted that tourist activity associated with any ASPA could set a bad precedent for the Antarctic protected area system.

(189) In responding to these questions Chile noted that confusion had existed among the various activities occurring in the area. As a result a very well differentiated coastal zone was removed from the boundaries of the ASPA to provide a buffer zone so as to avoid impacts on the values of the area from tourism activity.

(190) As result of discussions, Chile agreed to continue discussing the future of Fildes Peninsula in the framework of an international working group (IWG) on Fildes, but making it clear that terms of reference for that group should recognise that Ardley Island is an existing ASPA designated and adopted by the ATCM.

(191) Germany agreed and noted that the terms of reference in the work plan for the future activities of the IWG agreed by this working group were distributed and would be made available on the IWG web-based discussion forum after the Meeting.

(192) The Committee agreed to send this Management Plan for further intersessional review.

ii. Draft revised management plans which had not been reviewed by the trial informal group

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

- WP 7 *Five Years Review of Antarctic Specially Protected Area (ASPA) No 161 Terra Nova Bay, Ross Sea* (Italy)
- WP 8 *Revised Management Plan for Antarctic Specially Protected Area No 138 Linnaeus Terrace, Asgard Range, Victoria Land* (United States)
- WP 9 *Revised Management Plan for Antarctic Specially Protected Area No 137, North-west White Island, McMurdo Sound* (United States)
- WP 13 *Revised Management Plan for Antarctic Specially Protected Area No 106 Cape Hallett, Northern Victoria Land, Ross Sea* (United States)
- WP 14 *Revised Management Plan for Antarctic Specially Protected Area No 124 Cape Crozier, Ross Island* (United States)
- WP 25 *Review of Antarctic Specially Protected Area (ASPA) No 105, 118, 154, 155 and 156* (New Zealand)

- WP 31 *Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 135, 143, 160* (Australia)
- WP 32 *Review of Antarctic Specially Protected Area (ASPA) No 141* (Japan)
- WP 37 *Revised Management Plan for Antarctic Specially Protected Area No 123 Barwick and Balham Valleys, Southern Victoria Land* (United States)
- WP 47 *Revised Management Plan for Antarctic Specially Protected Area No 125, Fildes Peninsula, King George Island (Isla 25 De Mayo)* (Chile)

(194) In introducing WP 7, Italy noted that there had been no substantial changes made to the provisions of the existing Management Plan. Italy noted that the changes related to the supporting bibliography, the new projects to be undertaken in the area, a small addition on the presence of cetacean species and new information regarding the Antarctic silver fish, *Pleurogramma antarcticum* around the Terra Nova Bay ASPA.

(195) Noting the minor changes to the Management Plan, the Committee agreed to forward it to the ATCM for adoption.

(196) In introducing its five revised ASPA management plans the United States noted that:

- No substantial changes had been made to the existing Management Plan of ASPA 138 (Linnaeus Terrace). The boundaries of the Area remained the same and only minor edits and corrections had been made to the description of the Area and plan policies.
- No substantial changes were made to the Management Plan of ASPA 123 (Barwick and Balham Valley). Changes in the Management Plan were limited to minor edits and corrections to the description of the area and plan policies.
- Some substantial changes had been introduced in the Management Plan of ASPA 137 (North-west White Island). These related to the extension of some boundaries, clarification and improvement of the aircraft access guidelines, and improvement of precautions against alien introductions.
- Substantial changes were also introduced to the Management Plan of ASPA 124 (Cape Crozier). These related to changes in the boundaries of the ASPA, changes in the values to be protected; the scientific activities permitted in the area; clarification in the aircraft access guidelines and more restrictions on aircraft activities in the area.
- Substantial modifications had been made to the Management Plan of ASPA 106 (Cape Hallett). These related to changes in the boundaries of the ASPA, the description of the values of the area, improvements in the description of the objectives of the ASPA, updating of maps, as well as additional controls on access to and movements within the Area. The somewhat novel approach proposed with the revised Management Plan was to include a flexible boundary that was defined by the extent of the penguin colony. The US noted that this

approach of using a biological feature to delineate the area was not entirely without precedent and was currently used for Beaufort Island, ASPA 105. Nevertheless, the US suggested that this Management Plan be sent for intersessional review.

(197) The Committee also endorsed the changes to the Management Plan for ASPA 124 (Cape Crozier) and agreed to forward this revised Management Plan to the ATCM for adoption.

(198) With respect to the revised management plans for ASPAs 123 (Barwick and Balham Valley), 137 (North-west White Island) and 138 (Linnaeus Terrace), Japan suggested minor changes to specific parts of the text. With these changes the Committee endorsed the management plans and agreed to forward them to the ATCM for adoption.

(199) With respect to the revised ASPA 106 (Cape Hallett) Management Plan, Japan indicated that imprecise boundaries such as those proposed, provided particular difficulties in adopting such plans in Japanese law. Japan welcomed the opportunity to discuss this matter further in the intersessional period.

(200) New Zealand presented WP 25 on the review of five ASPA management plans: ASPAs 105 (Beaufort Island), 118 (Mount Melbourne), 154 (Botany Bay), 155 (Cape Evans) and 156 (Lewis Bay). New Zealand noted that the review process for ASPA 105 had been initiated, but could not be completed as local sea ice conditions did not allow a visit to take place in the 2007/08 season. In informing the Committee on changes made to the management plans of these ASPAs, New Zealand noted that:

- there had been only minor changes made to the provisions of the existing Management Plan of ASPA 118 (Mount Melbourne);
- some substantial changes were introduced in the existing Management Plan of ASPA 154 (Botany Bay), relating to the re-drawing of the Managed Zone boundary, permits for access to the area for conservation visits to historic sites, and substantial changes in the maps to include vegetation cover;
- a substantial change had been made to the provisions of the existing Management Plan for ASPA 155 (Cape Evans) to allow vehicle access into the area. This change was required to overcome the immediate extreme risk to the hut from ice and snow build up. Vehicles will be used for ice and snow removal; and
- no changes to Management Plan for ASPA 156 (Lewis Bay) were proposed given the enduring nature of the values and the absence of any other concerns regarding the Area.

(201) With only minor changes to the Management Plan for ASPA 154 (Botany Bay), the Committee agreed to send the management plans for ASPAs 118 (Mount Melbourne), 154 (Botany Bay) and 155 (Cape Evans) to the ATCM for adoption, noting the existing Management Plan for ASPA 156 (Lewis Bay) remains extant.

(202) Australia presented WP 31 on the review of three management plans: ASPAs 135 (North-east Bailey Peninsula), 143 (Marine Plain), 160 (Frazier Islands) noting that:

- no changes were required to the Management Plan for ASPA 143 (Marine Plain);
- changes to the Management Plan for ASPA 135 (North-east Bailey Peninsula) included new provisions to allow for limited and appropriate vehicle access for the purposes of safe maintenance of essential communications equipment, updating of the list of supporting documentation and updating of the appendixes summarising species information;
- an introduction had been added to the Management Plan of ASPA 160 (Frazier Islands), an appendix on observations of southern giant petrel was updated, the provisions for conducting censuses of this species were modified, and the supporting documentation was updated.

(203) With respect to the revised Management Plan for ASPA 135, Japan asked Australia for clarification regarding the use of vehicles which was not in the current Management Plan. Also with respect to the revised Management Plan for ASPA 160, Japan asked Australia for clarification regarding the change in the length of time allowed for censuses. Australia explained the reasons for these changes and the Committee agreed to forward the management plans to the ATCM for adoption. The Committee also noted that the Management Plan for ASPA 143 had been reviewed and required no revision.

(204) In presenting WP 32 on the issue of ASPA 141, Japan informed the Meeting that a visit by the Japanese Antarctic Research Expedition to the area in February 2008 indicated that no changes to the value of the Area's unique ecosystem were observed, and therefore, the Management Plan was still effective.

(205) The Committee agreed, noting that the existing Management Plan remains in force.

(206) Chile introduced WP 47 *Revised Management Plan for Antarctic Specially Protected Area No 125, Fildes Peninsula, King George Island (Isla 25 de Mayo)*. Chile noted that the area was currently insufficient to protect the fossils found in the area. Following recent studies in the region, the area of the ASPA was being extended to include eight areas containing fossils.

(207) Germany thanked Chile for developing the revised plan and agreed that extra protection was required in this area. However, recent German findings differed from those presented by Chile with respect to the precise areas requiring protection. Germany referred to its earlier intervention with respect to developing a broader ASMA for the Fildes Peninsula region, noting that this Management Plan should also be included in the broader review.

(208) The Committee agreed to refer the Management Plan for further intersessional review.

iii. New draft management plans for protected/managed areas

(209) After a presentation by Korea, the Committee considered WP 3 *Proposal for a new Antarctic Specially Protected Area at Narêbski Point, Barton Peninsula, King George Island* (Republic of Korea,). Korea noted that the area had high species richness of flora and fauna, and the abundance of some of these was, in some cases, exceptional. The cover of mosses, lichens, and grasses was very extensive. The area contains the largest Chinstrap penguin colony in King George Island, a large number of gentoo penguins and breeding areas of seven other birds. As such, the area provides exceptional opportunities for the scientific study of terrestrial biological communities. The Management Plan aims to protect the unique terrestrial ecosystem found in the Area and, in particular, to reduce the risk of invasive species introductions from both local and global sources.

(210) The Committee thanked Korea for its presentation and agreed to refer this new ASPA Management Plan for intersessional review.

(211) Argentina noted that it would be pleased to participate in this intersessional review and provide data and information, given its scientific experience in the area.

(212) CEP Advice 4 to the ATCM:

The Committee had before it 21 new or revised protected or managed area management plans. Five of these had been subject to review by the Trial Informal Group (TIG) established by CEP X. 16 new or revised management plans had been submitted directly to CEP XI.

In reviewing the advice of the TIG, and following the Committee's assessment of those plans that had not been subject to intersessional review, the Committee decided to:

- Forward the following 14 management plans to the ATCM, with the recommendation that they be adopted by AT:

#	**Name**
ASMA new	*South-west Anvers Island and Palmer Basin*
ASPA new	*Mount Harding, Grove Mount, East Antarctic*
ASPA new	*Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica*
ASPA new	*Marion Nunataks, Charcot Island, Antarctic Peninsula*
ASPA 118	*'Cryptogam Ridge' Mount Melbourne, Victoria Land*
ASPA 123	*Barwick and Balham Valley, Victoria Land*
ASPA 124	*Cape Crozier, Ross Island*
ASPA 135	*North-eastern Bailey Peninsula, Budd Coast, Wilkes Land*
ASPA 137	*North-west White Island, McMurdo Sound*
ASPA 138	*Linnaeus Terrace, Asgaard Range, Victoria Land*
ASPA 154	*Botany Bay, Cape Geology, Victoria Land*
ASPA 155	*Cape Evans, Ross Island*
ASPA 160	*Frazier Islands, Wilkes land, East Antarctica*
ASPA 161	*Terra Nova Bay, Ross Sea*

- Forward the following four management plans for further intersessional review:

#	Name
ASPA new	*Narębski Point, Barton Peninsula, King George Island*
ASPA 106	*Cape Hallett, Victoria Land*
ASPA 125	*Fildes Peninsula, King George Island, South Shetland Islands*
ASPA 150	*Ardley Island, Maxwell Bay, King George Island*

The Committee also advised that the following three management plans had been reviewed according to the requirements of Annex V, but no changes had been made and therefore the existing plans remain in force:

#	Name
ASPA 141	*'Yukidori Valley', Langhovde, Lützow-Holmbukta*
ASPA 143	*Marine Plain, Mule Peninsula, Vestfold Hills, Princess Elizabeth Land*
ASPA 156	*Lewis Bay, Mount Erebus, Ross Island*

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

(213) The Chair noted Secretariat Paper 6 *Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans* recalling that this information is available online at the CEP website.

(214) Romania presented IP 64 *Grove Mountains, East Antarctica - between scientific research and environmental protection,* on the field-based research in the region since 2003, during the Chinese Antarctic Expedition. Romania suggested that the objectives of a future Management Plan of Grove Mountains should include also biological data of the area and that it will make efforts to increase knowledge of the environmental importance of the Area, and the impacts of human activities.

7b) Historic sites and monuments

(215) Chile introduced WP 61 *Antarctic Protected Area System: Revised List of Historic Sites and Monuments Measure 3 (2003) Guidelines for its Application,* recalling earlier decisions taken by the ATCM to manage historic sites and monuments, including Resolution 4 (2001), and Resolution 8 (1995). Chile also recalled that through Measure 3 (2003) the ATCM consolidated the "List of Historic Monuments Identified and Described by the Proposing Government or Governments" updating the information and removing sites or monuments which no longer exist.

(216) Chile considered that taking these provisions into account it still remains important and useful to consolidate the existing provisions on HSMs, in order to maintain and improve the quality of the protection afforded to the present sites and monuments, and appropriately build on the established rules and procedures to manage the List of Historic Sites and Monuments. Therefore Chile proposed new guidelines to focus on the ATCM List of Historic Sites and Monuments as a more comprehensive management tool.

(217) Several Members supported Chile's proposal in principle, noting some concerns over certain aspects of the proposed guidelines. The Committee agreed to ask Chile to coordinate an intersessional review of the proposed guidelines, together with interested Members and to present an updated version to the next meeting.

(218) The other paper submitted under this agenda ítem was IP 12 *Recuperación del Sitio Histórico Nº 56 Base Aérea Antártica "Pdte. Gabriel González Videla"* (Chile).

7c) Site guidelines

(219) Ukraine introduced WP *2 Site Guidelines for Wordie House, Winter Island, Argentine Islands*, (United Kingdom & Ukraine). 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- this included a detailed description of the site with recommendations for its future management. Vernadsky station undertakes management of the Base "F" on behalf of the UK.

(220) In presenting WP 40, *Site Guidelines for Shingle Cove, Coronation Island,* the United Kingdom recalled that the area is located on the southern shore of Coronation Island, opposite to Signy Research Station (UK). The UK emphasised that it is a biologically rich site. The aim of the site guidelines was primarily to protect nesting snow petrels from human disturbance.

(221) The United Kingdom also introduced WP 44, *Site Guidelines for Devil Island, Vega Island.* Devil Island is a narrow island lying in the centre of a bay on the north coast of Vega Island. This small island is a popular landing site for visitors and possesses a large breeding colony of Adelie penguins (approximately 8,500 pairs). Skuas also breed there, while other bird species, including kelp gull, sheathbill and Wilson's storm-petrel are suspected to nest on the island. A number of plant species are observed on the higher slopes of the north eastern peak and a large area of moss species is situated on the flat area behind the penguin colony.

(222) The UK thanked IAATO for its assistance and support in drawing up all three of the Site Guidelines.

(223) On behalf of its co-authors Norway introduced WP 56, *Site Guidelines for Whalers Bay, Deception Island, South Shetland Islands,* (Argentina, Chile, Norway, Spain, UK and US, in conjunction with IAATO and ASOC), noting that it was pleasing to see so many Site Guidelines on the Agenda. Whalers Bay is located on Deception Island, South Shetland Islands and over the last 10 years has continuously been one of the most visited tourist sites in Antarctica. The entire site is recognised for its historical importance and has been adopted as HSM 71 in 2003. The site also has important wilderness and environmental values, a number of bird species breed in the area, and several seal and penguin species use the beach as a resting place. Important or unique floral species and assemblages are also present.

(224) Norway recalled that the Management Plan for ASMA 4 includes a conservation strategy for Whalers Bay, which included a Code of Conduct for Visitors to the site. The Deception Island Management Group saw merit in reformatting the Code of Conduct to be consistent with guidelines adopted for other sites. The Deception Island Management Group therefore recommended the CEP submit these site guidelines for Whalers Bay for endorsement by the ATCM.

(225) Argentina introduced WP 59 *Guidelines for Half Moon Island, South Shetland Islands* stating that the growing number of visitors that had been in evidence at this site during past years, which had reached 15,000 tourist landings from 30 cruise ships during the 2006/07 season, had turned the site into one of the four most visited tourist locations in Antarctica. Argentina proposed these guidelines in order to improve protection measures associated with potential impacts from visitors on the flora and fauna present on the island. Argentina also advised that Cámara Station is not part of the area considered in the guidelines.

(226) IAATO noted that it was pleased to work in conjunction with Parties on development of these guidelines.

(227) In presenting WP 45 *Site Guidelines for Cape Hallett, Northern Victoria Land, Ross Sea,* the United States informed the Meeting that, since the guidelines were associated with the revised Management Plan for Antarctic Specially Protected Area No 106, and the Management Plan was referred for intersessional review, it had decided to postpone the site guideline proposal for CEP XII.

(228) Several Members made comments on particular issues regarding the proposed site guidelines, mainly connected with the description of values to be protected, total number and time ashore of visitors permitted, movement of visitors though the landing areas, and cleaning procedures before landing. On this issue, IAATO reminded the meeting that for IAATO visitors the site guidelines were complemented by a suite of management provisions aimed at minimising disturbance.

(229) Regarding the site guidelines proposed for *Wordie House, Winter Island, Argentine Islands* in WP 2 some delegations expressed concern about a reference made in a footnote to a particular national policy on visits to historic sites. The UK noted with regret that although there was consensus on the guidelines themselves it had not been possible to agree revised wording for the footnote on UK management of this base. Reluctantly, the co-proponents, UK and Ukraine, had decided to withdraw the proposal from the CEP meeting. The UK assured the Committee that the existing good management practices would continue to be followed and the draft site guidelines would be passed to IAATO for implementation by its members.

(230) IAATO expressed its disappointment that these guidelines were not agreed. It assured the Committee that IAATO members would follow the provisions of the proposed guidelines.

(231) After modification by the proponents of some topics proposed by Members, the Committee endorsed and recommended the approval by the ATCM of the following site guidelines:

- Shingle Cove, Coronation Island
- Devil Island, Vega Island
- Whalers Bay, Deception Island, South Shetland Islands
- Half Moon Island, South Shetland Islands

(232) IAATO introduced IP 82 *Update on the Antarctic Peninsula Landing Site Use and Site Guidelines* focusing on the application of the ATCM site guidelines during this past season, level of use and relevant issues. IAATO highlighted the importance placed on education to ensure continued good understanding and compliance with the guidelines and noted that the organisation was developing an online field staff training and assessment programme. IAATO also drew attention to key issues which need to be addressed to ensure continued success of the ATCM site guidelines: the need for an efficient systematic review process of the guidelines; the importance of good coordination between all visiting parties and assurance that all visitor activities are included in a single tourism database.

(233) After this presentation, France posed a general issue related to the visitor site guidelines objectives and effectiveness, noting that several guidelines adopted during the last three years had standard wording, which was not related to the specific characteristics of each site. France emphasised some specific issues which should be defined taking into account the site features and its environmental sensitivities such as the distance to approach fauna and the number of people ashore.

(234) Other Members raised issues connected to the maximum number of people including guides inside historic ASPAs and huts and expressed concern on how this was being managed to avoid damage to those values. On this matter IAATO agreed with New Zealand that the number of people inside a hut and in the environs of ASPAs related to historic sites was important to ensure protection of the historic artefacts. IAATO also noted its view that limits were important to safeguard the visitor experience. In areas where space is less constricted, it may be more effective for management purposes to restrict the maximum number of visitors, excluding guides.

(235) ASOC noted that in its view, placing limits to visitor numbers could be used as an environmental management tool at any site as a precautionary action to minimise impacts. Spain showed its agreement with the comments made by ASOC with regard to the benefits for environmental protection entailed by placing limits on visitor numbers in those areas of the Antarctic where environmental precautionary action so requires.

(236) Other Members noted that specific codes of conduct adopted by National Antarctic Programmes for certain sites often visited by tourists could be used as a basis to develop site guidelines as done for Whalers Bay. IAATO noted that when the ATCM site guidelines

were first considered, the ICG, noting the existence of Recommendation XVIII-1, discussed considering the development of a general code of conduct as a 'cover sheet' for the guidelines in due course. IAATO observed that it may now be time reconsider this issue and IAATO would be happy to be involved in drafting any such general guidelines.

(237) Argentina noted that Recommendation XVIII-1 was still not in force. The Chair proposed to transmit to the ATCM the urgency in the approval of this important management instrument to better protect the Antarctic environment from possible impacts associated with tourist activity.

(238) After further interventions on this issue, France agreed to coordinate an intersessional discussion with interested Members, to identify those issues which might constitute general guidance, perhaps as a generic cover sheet to site guidelines, and those issues which merit site specific guidance and report back to CEP XII.

(239) The following paper was also submitted under this Agenda item: IP 6 rev.1 *Antarctic Site Inventory: 1994-2008* (United States).

7d) Systematic environmental geographic framework

(240) New Zealand introduced WP 27 *Systematic Environmental Protection in Antarctica: Final report on Environmental Domains Analysis for the Antarctic continent as a dynamic model for a systematic environmental geographic framework for Annex V of the Protocol*, recalling that, since 2000, it had been working on a systematic environmental geographic framework (SEGF) in order to provide substance to this undefined phrase in Article 3(2) of Annex V of the Protocol.

(241) New Zealand noted that Version 2.0 of the classification framework, identifying 21 different Environments, was the best possible achievement using currently available climate, slope, land cover and geological data. Further continental-scale data (e.g. on lakes, biota, biogeography and soils) would be useful when available. Until then the Environmental Domain Analysis (EDA) addressed the immediate need. Version 2.0 provided a scientifically sound basis for a systematic spatial classification of Antarctica into Environments of quantifiable character. New Zealand suggested that examining environmental risk to Environments poorly represented amongst the existing Antarctic Specially Protected and Managed Areas would be an essential next step for the CEP to take.

(242) New Zealand therefore recommended:

- the EDA to the CEP as a dynamic model for a systematic environmental geographic framework (provided for in Article 3(2) of Annex V of the Protocol) for the Antarctic continent; and
- that the CEP request the support of the Antarctic Treaty Secretariat, specific Parties and/or COMNAP to disseminate the EDA, including making *Environmental Domains of Antarctica Version 2.0 Final Report, Manaaki*

Whenua Landcare Research New Zealand Ltd (Morgan *et al.*, Manaaki Whenua Landcare Research New Zealand, 2007) available on the Antarctic Treaty Secretariat website.

(243) Many Parties congratulated New Zealand on what was a major accomplishment, noting that the model proposed for use by the CEP was the result of sustained work over a number of years. EDA would be a practical systematic tool for the CEP to use to help protect the Antarctic environment. Version 2.0 gave a better characterization of the ice-free areas. As well as including more representative areas, it would be important to look particularly at which Environments were vulnerable.

(244) Australia and COMNAP offered support in making the EDA more widely available. It was noted that EDA was an example of an environmental classification that is also being referred to as bioregionalisation in the marine environment. A number of applications were noted such as the representation of ASPAs and the role of the ASPA system, environmental monitoring, statistics about human activities, assessing risks from invasion of non-native species, its surrogacy value and general conservation planning.

(245) SCAR noted that it was in the process of assessing the EDA using data on terrestrial biodiversity.

(246) Argentina noted that each proposed ASPA would still need to be considered on its own merits.

(247) ASOC also noted that EDA would provide a valuable tool for extending the ASPA system.

(248) The UK noted the similarities between the methodologies and objectives of the environmental domain analysis and the marine bioregionalization work. In particular it highlighted the potential for developing common applications for these marine and terrestrial classifications.

(249) The Committee strongly endorsed the EDA as a dynamic model for the identification of Antarctic Specially Protected Areas within the Systematic Environmental Geographic Framework (SEGF) referred to in Article 3(2) of Annex V, and recommended that the ATCM adopt a Resolution "*Environmental domains Analysis for the Antarctic continent as a dynamic model for a systematic environmental geographic framework*".

7e) Other Annex V matters

(250) The United Kingdom introduced WP 41 *Guidance for Working Papers on Area Protection and Management,* reminding the meeting that the proposal had been considered by ATCM XXX and that Parties had been encouraged to use the guidance during the intersessional period on a trial basis.

(251) Australia suggested a minor amendment to Template A in the document to more accurately reflect the process agreed in Decision 9 (2005) for consultation with CCAMLR

on proposed areas with a marine component. The Committee agreed with this suggestion and endorsed the amended version of the Guide.

(252) The United Kingdom introduced IP 2 *Workshop on Bioregionalisation of the Southern Ocean (Brussels, Belgium, August 2007)*, (United Kingdom and United States) informing the meeting that the aim of the Workshop was to provide a scientific basis for the identification of representative areas for protection in the Southern Ocean. The United Kingdom noted that the results of the Workshop had been endorsed by CCAMLR at its meetings in 2007 and that CCAMLR had agreed that these results were sufficient to allow progress on developing practical approaches to the selection of marine areas for protection.

(253) The United Kingdom also presented IP 3 *Proposed approach for the identification of important marine areas for conservation*, proposing an approach for the identification of important marine areas for conservation based on "Systematic Conservation Planning" methodology, noting that they intend to undertake a pilot study to identify key decisions and data sets required. South Africa offered to provide its expertise in this matter.

(254) Australia and IUCN strongly supported the development of a representative network of protected areas in the Southern Ocean. Australia felt it would be appropriate for the Committee to echo CCAMLR's endorsement of the workshop recommendations and agree that the results can be used by the CEP and CCAMLR to inform marine spatial management.

(255) The Committee agreed that further work on this topic is of key importance and Members were encouraged to continue working with CCAMLR to utilise the outcomes of the CCAMLR-CEP bioregionalisation workshop.

(256) IUCN noted that the ATCM would benefit from endorsing the UK approach described in IP 3 and encouraged other Members to conduct similar studies to contribute to the development of best guidance to identify important marine areas for conservation.

(257) Japan recorded its position that in general the matter of marine protected areas should be mainly discussed in the CCAMLR context.

(258) The United Kingdom pointed out that Article 3 of Annex V of the Protocol confirmed that the development of marine ASPAs and ASMAs is within the CEP's remit, noting that the working relationship with CCAMLR, including through ATCM Decision 9 (2005), was very important. Australia recorded its agreement with the United Kingdom's statements.

(259) The CCAMLR observer informed the CEP that CCAMLR had endorsed the administrative procedures, introduced by the CCAMLR Secretariat in 2007, to ensure that ATCM proposals for protected areas with marine components are reviewed without undue delay by CCAMLR following ATCM Decision 9 (2005).

(260) Germany presented IP 30 *Final Report on the Research Project "Risk assessment for Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas"* informing the meeting that this project had been carried out between 2003 and 2006. The document contained a summary as well

as a detailed version of the report. Germany also made available a CD version of the final report, and informed the Meeting that the full report could also be downloaded from the Umweltbundesamt (UBA) webpage and that the printed version could be sent out to each contracting party on request.

(261) Romania presented IP 64 *Grove Mountains, East Antarctica – Between scientific research and environmental protection*, noting its intention to gather more data.

(262) Brazil introduced IP 117, *The Admiralty Bay ASMA website*, demonstrating the website for the CEP (*www.admiraltybayasma.aq*).

(263) ASOC presented IP 57 *Area Protection: Time for Action*, noting their view that the rolling Annex review process offers an opportunity to both consider the effectiveness of Annex V to deliver best practice area protection for the Antarctic Treaty area, and to review the barriers to effective implementation of current requirements.

(264) Other papers submitted under this agenda item were IP 94 *Ross Sea Heritage Conservation Project: Conservation of Shackleton's Hut, Cape Royds, ASPA 157* (New Zealand), IP 109 *Amundsen-Scott South Pole Station, South Pole Antarctic Specially Managed Area (ASMA 5) First Year Management Report* (United States), and IP 126 *Report of the Deception Island Antarctic Specially Managed Area (ASMA) Management Group* (Argentina, Chile, Norway, Spain, United Kingdom, and United States).

Item 8: Conservation of Antarctic Fauna and Flora

8a) Quarantine and non-native species

(265) Australia introduced WP 16 *Antarctic Alien Species Database*, advising the Meeting that the Australian Antarctic Division maintained a Biodiversity Database in support of the SCAR Life Sciences Program Evolution and Biodiversity in the Antarctic (EBA). This contained species records from the Antarctic and sub-Antarctic, including observations of over 190 alien species. It can be searched by species, geographic region, or alien status (transient, persistent, invasive).

(266) Australia reminded Members that the provisional CEP Five Year Work Plan adopted at CEP X included as a suggested action "establish a database of non-native species occurrences in Antarctica" and therefore Australia recommended that the Committee encourage Members to use the Biodiversity Database as the central database of alien species occurrences in the Antarctic region.

(267) The Committee and SCAR supported the Australian recommendation, with SCAR noting that its EBA committee consistently screened incoming data.

(268) IUCN noted the importance of such databases and highlighted the need for further work on marine alien species.

(269) Australia presented IP 17 *Measures to protect the Larsemann Hills, East Antarctica, from the introduction of non-native species,* (Australia, China, India, Romania and the Russian Federation) noting that, in accordance with the high priority given by the CEP's proposed five-year action plan, the Parties active in ASMA No 6 were instituting a range of precautionary measures aimed at minimizing the accidental introduction of non-native species, and high risk quarantine materials to the Larsemann Hills.

(270) In response to a question from New Zealand, Australia noted that the Parties were in the process of implementing these measures, which were not expected to require significant additional resources. The Larsemann Hills Parties would consider reporting back to future meetings on progress.

(271) Uruguay presented IP 33 *Medidas preventivas para evitar la introducción de especies alienas en la Antártida, en cumplimiento del Anexo II del Protocolo*.

(272) New Zealand presented IP 75 *Non-native Species Incursions at Scott Base, Antarctica* on a significant incursion of vinegar flies *(Drosophilae)* at Scott Base during 2007, and the response and management of that incident. New Zealand noted that the application of the recommendations from the *2006's Non-native Species in Antarctica Workshop* resulted in a more comprehensive reporting system on these sorts of incursions.

(273) A number of Members noted that it was useful to share experiences about the control and eradication of such incursions, which appeared to be linked often to the importation of human food-stuffs.

(274) The United States submitted IP 93 rev. 1 *Non-native Species Awareness Campaign: "Don't Pack a Pest" When Travelling to Antarctica,* on an awareness programme aimed at reducing the risk of introduction of non-native species to Antarctica.

(275) COMNAP presented IP 98 *Survey on existing procedures concerning introduction of non native species in Antarctica,* which was undertaken by its Antarctic Environmental Officers Network (AEON) in regard to existing procedures within National Antarctic Programmes to minimize introduction of alien species. The survey was based on three main topics: awareness programmes; operational procedures; and monitoring/surveillance programmes. COMNAP informed the Meeting that the survey had shown that the issue was already addressed by most National Antarctic Programmes through awareness programs, and that a significant number of Programmes also implemented a range of operational procedures aimed at minimising the risk of introduction of non-native species. Lessons learnt from this survey will be useful to National Antarctic Programmes to continue improve their procedures. COMNAP will keep the CEP informed.

(276) The United States introduced IP 110 *Report on Exploration of Antarctic Subglacial Aquatic Environments; Environmental and Scientific Stewardship.* This made a series of recommendations to help manage risk to subglacial environments while allowing exploration and sampling of these environments to occur.

(277) A number of Members and ASOC congratulated the United States on this important paper. The Chair noted its importance with regards to environmental impact assessment, non-native species and area protection. The Committee agreed to further assess the report intersessionally and looked forward to further discussion at CEP XII.

(278) References were also made to *Aliens in Antarctica*, a SCAR-sponsored IPY project being led by Australia. SCAR noted that further details on the results of the project would be reported to the CEP at future meetings.

(279) The Chair noted that the reports delivered under that agenda item would contribute to the development of the CEP's future work on non-native species as prioritized in the 5 year work plan.

8b) Specially protected species

(280) SCAR introduced WP 10 rev. 1 *Status of the Regional, Antarctic Population of the Southern Giant Petrel – Progress*, and summarized the steps taken by SCAR to advise the ATCM on whether the southern giant petrel should be listed as a Specially Protected Species (SPS) under Annex II to the Protocol on Environmental Protection, particularly a workshop held in Cambridge in May 2008, where members of several parties, SCAR, BirdLife International and ACAP had participated. For the purposes of this workshop, SCAR compiled an extensive database on abundance and trends of the species at all known breeding sites, and scrutinized the data according to the IUCN red list criteria for regional assessments.

(281) SCAR also raised several caveats. First, that data for several sites are not current, but that by comparison with assessments for other bird species globally, the data are extensive. Second, that data on fledging success, juvenile and adult survival, and breeding frequency are available for only a few breeding sites, and much variation exists between these site-specific data, so precluding demographic modelling of future trends. Third, that census data at sites are often not comparable among years.

(282) SCAR concluded that:

- According to the IUCN Red List Categories and Criteria, the southern giant petrel population south of 60°S is of Least Concern under Criteria A2 and B-E. Therefore it does not qualify as Critically Endangered, Endangered, Vulnerable or Near Threatened, and the present data and analysis do not support the designation of the southern giant petrel as a SPS under Annex II.
- Additional censuses of breeding sites and of fledging success should be undertaken in a consistent scientific manner, which SCAR outlined, to enable better estimates to be made of current trends in the southern giant petrel population (north and south of 60°S). Should such work indicate a change in the status of the species, it should be reassessed.
- Further quantitative work should be undertaken, using both current and new data, so that quantitative demographic models can be applied to the species.

Because these models rely on carefully collected, time series information, the collection of such information was encouraged.

- Sites that have been censused more than 10 years ago should be revisited at an appropriate time so that an assessment of the status of the species at these sites can be made.
- The lessons learnt from this process should be applied to other species.

(283) A number of Members thanked SCAR for the quality of its advice, noting it was a good example of cooperation between the CEP and SCAR. The SCAR recommendations were supported.

(284) Australia stated that making the workshop data available to ACAP would assist with its global assessment of the species and would also help with determining the level of uncertainty with the Antarctic regional assessment. Australia strongly supported the development of a standardised methodology for population counts, and suggested the guidance contained in SCAR's paper could be referred to ACAP for consideration and further advice to the CEP if required. It also noted that the current assessment does not reduce the sensitivity of the species to disturbance, so the Parties should continue the commitments made in earlier Resolutions to limit such disturbance, including by taking steps to protect breeding habitat. These sentiments were endorsed by the Committee.

(285) The UK described its future plans for survey and for continued convening of the ACAP breeding sites working group, and noted that advice and cooperation from experts within SCAR and CEP would be appreciated.

(286) IUCN also noted that the IUCN Red List status of the species, released in May 2008, is "near threatened" and that the Red List assessment notes the ongoing threats from Illegal, Unreported and Unregulated (IUU) fishing. The assessment also recommended conservation measures including, continued monitoring, minimising disturbance at breeding sites, and adoption of mitigation measures in all fisheries within the species range.

(287) New Zealand presented WP 30 rev. 3 *Draft Action Plan for Southern Giant Petrel Macronectes giganteus,* noting that the primary objective of the document was to provide a means of continuing to test the *Guidelines for CEP Consideration of Proposals for New and Revised Designations of Antarctic Specially Protected Species under Annex II of the Protocol* adopted at CEP VIII and to illustrate how a draft Action Plan could be developed following the accompanying template.

(288) New Zealand noted that this test of the CEP's SPS guidelines had been conducted in the full knowledge that the range of southern giant petrels included areas outside of the Antarctic Treaty area and CAMLR Convention areas and, therefore, the concept of the Antarctic environment and dependent and associated ecosystems was particularly relevant to the protection of southern giant petrels. New Zealand also expressed that hopefully the test would be useful in clarifying the roles of the CEP, CCAMLR and the Antarctic Treaty Parties on this matter.

(289) Several Members thanked New Zealand for producing a useful model, noting that, together with SCAR's robust review, the process of producing the Action Plan was a good test of the CEP's guidelines and the process for collaboration between the CEP and the Scientific Committee on CAMLR about protected marine species.

(290) France noted that it intends to make use of the draft action plan for its own management purposes and encouraged other Members to do so.

(291) Noting that the Parties that had contributed to the draft Action Plan largely operate in East Antarctica, Australia invited Parties with experience of the Antarctic Peninsula region to consider whether the types of actions identified in the plan would be appropriate to that region also.

(292) The Committee agreed that because the southern giant petrel would not be listed as a Specially Protected Species, it was not appropriate to formally adopt the draft as an Action Plan. The draft action plan would be made available through the Antarctic Treaty Secretariat website as an example, and for comment.

8c) Marine acoustics

(293) Germany noted that its work on a strategic risk assessment for Antarctic marine acoustics was still progressing. Germany anticipated providing a full report to CEP XI.

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

(294) The United Kingdom submitted IP 21 *Update on Wildlife Awareness Information for Aircraft Operations in Antarctica* on a development of larger-scale maps using information about the location of wildlife concentrations. These maps were designed to support helicopter operations in Antarctica and to assist pilots in planning their routes so that they avoid wildlife concentrations.

(295) Ecuador introduced IP 107 *Censos del Petrel Gigante del Sur Macronectes giganteus y las skúas Catharacta spp en la Punta Fort Williams-Isla Greenwich y la Isla Barrientos, Shetland del Sur, Antártida*, informing the meeting on the results of the census of southern giant petrels and skuas undertaken during January and February 2007. The document was provided in due time for SCAR's consideration with regard to changes in the southern giant petrel population and the workshop that was organised at their headquarters in May 2008.

Item 9: Environmental Monitoring and Reporting

9a) Climate change

(296) Norway introduced WP 35 *Antarctic Climate Change Issues* (Norway and United Kingdom). In introducing the paper, Norway noted that climate change is one of the main challenges faced in Antarctica, and a priority area for the CEP as identified in the five-year

work plan. Norway stressed that climate change and its impacts are likely to have knock-on impacts on Antarctic activities, and that it therefore is important to consider consequences of climate change for Antarctica at a broad level and also for more specific management and protection.

(297) The document proposed several recommendations for actions that Parties should take. These included:

- ensuring Resolution 3 (2007) is followed up and reporting activities in this regard;
- SCAR being asked to keep the CEP updated on new knowledge on climate changes and its effects in Antarctica;
- asking COMNAP to continue to collect and disseminate experience on alternative energy production and good practice to help reduce greenhouse gases in Antarctica;
- encouraging National Operators and others as appropriate to further cooperate and coordinate logistics to reduce emissions;
- the CEP developing a clear methodology for calculating emissions and considering how to incorporate such information into the EIA process; and
- convening an Antarctic Treaty Meeting of Experts in 2009 to assess the consequences of climate change in Antarctica for the management of Antarctica and to consider the necessary practical and legal steps to meet related challenges.

(298) SCAR introduced IP 62 *Antarctic Climate Change and the Environment: A Progress Report*. SCAR noted that the Antarctic Climate Change and the Environment (ACCE) project was aimed at providing an up-to-date assessment of the climatic changes that had taken place on the Antarctic continent and across the Southern Ocean, to give improved estimates of how the climate might evolve over the next century and to examine the possible impact on the biota and other aspects of the environment.

(299) SCAR informed the Committee that the final published report would be a comprehensive approach taking into account the role of Antarctica as a major component of the global system, the climate variability and the Antarctic, the history of the Antarctic climate and environment, the changes registered during the 'instrumental' period of the last several decades as well as the predicted evolution of the Antarctic climate over the next 100 years. The report would be circulated widely for comment, including to the CEP and CCAMLR, during July and August, and SCAR would welcome feedback.

(300) Many Members welcomed both papers and expressed concern at the environmental changes described in SCAR's report, although recognising that uncertainties still remain. The importance of research including sustained scientific monitoring to understand trends, supported by Resolution 3 (2007), was stressed.

(301) Some Members considered that some of the recommendations in WP 35 needed to be clarified, for example the frequency in reporting to the CEP. In addition, some Members suggested that legal matters needed to be addressed in other fora rather than being duplicated by the ATCM, but that a meeting of Antarctic experts might be useful. It was agreed that ATCPs had the responsibility to lead by example and to take account of consequences and risks for the management of the Antarctic environment.

(302) The UK noted that Members had acknowledged that climate change was important for the CEP to consider and that the Committee should examine the management of climate change impacts on the Antarctic environment and the associated fauna and flora. To this end scientific research in this area is vital.

(303) The Committee discussed the need to reduce emissions in Antarctica, with some Members noting that Antarctic emissions are insignificant on a global scale, with some other Members noting that even at a local scale the significance of emissions was minor. Some Members noted the ethical importance of reducing emissions and leading by example using best practice. It was noted that some Parties were already taking actions consistent with the recommendations in WP 35, including by COMNAP on alternate fuels, fuel handling and other mitigation measures.

(304) In summarising the discussions the Chair noted:

- the concerns that had been expressed on the impacts of climate change on the Antarctic environment;
- the importance that Members had placed on the need for ongoing scientific research in the Antarctic, and the need to place a high priority on long term monitoring, as set out in Resolution 3 (2007);
- that the Committee had welcomed SCAR's progress report on Antarctic Climate Change and the Environment, recognising that it would be an important part of the Committee's future work to review the findings of the report when it is available in early 2009;
- that in the light of the findings of SCAR's report the Committee would have an opportunity to assess the environmental management implications of a changing Antarctic climate;
- the Committee may wish to reconsider the proposal for a meeting of Antarctic experts to focus on climate change in the Antarctic context, after the SCAR report was available; and
- the ongoing efforts by National Antarctic Programmes and COMNAP to reduce emissions in the Antarctic, and that some Members had also commented on the underpinning ethical responsibilities in this area.

(305) The Committee welcomed the Chair's summary and looked forward to future discussions on this issue.

(306) ASOC introduced IP 56 *Impacts of Climate Change on Antarctic Ecosystems* providing a further review of the latest science and emphasizing the value of full consideration of climate change management decisions.

(307) Other papers submitted under this agenda item were IP 23 *Australia's Antarctic and Southern Ocean Climate Science* (Australia), IP 50 *Antarctic Peninsula: rapid warming in a pristine environment* (United Kingdom), and IP 51 *Antarctic Peninsula: Ice shelf status* (United Kingdom). The United Kingdom distributed a useful composite map of ice shelf change in the Antarctic Peninsula.

9b) Other environmental monitoring and reporting matters

(308) The CCAMLR observer delivered an informative presentation on CCAMLR's work, including ecosystem monitoring, which provided very useful background for the CEP and in respect of the joint SC-CAMLR and CEP workshop (see paragraphs 337 to 346).

(309) Belgium introduced WP 55 *The Marine Biodiversity Information Network: 2010 and Beyond*, as an instrument for science-based management and invited Members to join the project, since funding by Belgium is not guaranteed beyond 2010. Several Members thanked Belgium for this excellent scientific tool which, it was noted, provided basic data for the Census of Antarctic Marine Life (CAML) and the SC-CAMLR and CEP workshop on bioregionalisation. Belgium also noted that the database was available at *www.scarmarbin.be.*

(310) New Zealand referred again to WP 24 *Improving the CEP's Role in Advising the ATCM on the State of Antarctic Environments.* It noted that the first three recommendations would help improve environmental monitoring and reporting.

(311) ASOC thanked the United Kingdom and France for their IP 54 *The Recovery of Drilling Fluid from a Deep Ice-Core Drilling Site on James Ross Island, Antarctic Peninsula*, noting the importance of such recovery, which had been the first successful remediation of a deep ice core bore hole in Antarctica.

(312) The Chair reminded the Meeting of the request from the Secretariat of the Stockholm Convention on Persistent Organic Pollutants, for data and information on Persistent Organic Pollutants (POPs) in the Antarctic environment.

(313) Chile introduced IP 97 *Antarctic Persistent Organic Pollutants: Notes on a Request from the Stockholm Convention* regarding access to information from the Antarctic Treaty System. Several Parties and SCAR noted they had information or databases on the subject.

(314) SCAR agreed to coordinate this information for the CEP, should the ATCM decide to develop a consolidated Antarctic input to the Stockholm Convention.

(315) Other papers submitted under this agenda item included IP 07 *Summary of Environmental Monitoring and Reporting Discussion* (Australia), IP 35 *Environmental Monitoring of the Indian Permanent Station-Maitri in Pursuant to the Article 17 of Protocol*

on Environmental Protection to the Antarctic Treaty (India), IP 118 *Brazilian contribution to the Monitoring Programme for the Admiralty Bay Antarctic Specially Managed Area (ASMA No 1)* (Brazil), and IP 122 *Monitoring of Human Impacts at McMurdo Station, Antarctica* (United States).

Item 10: Inspection Reports

(316) The United States presented WP 26 *A Proposed Checklist for Inspecting Specially Protected and Managed Areas in Antarctica* (New Zealand, United Kingdom and United States) noting that it was a resubmission of an original proposal that had been made by the same proponents at CEP IX and that the matter had also been briefly considered at the CEP X.

(317) The US noted that the adoption of a checklist for inspecting specially protected and managed areas would provide an optional, though useful tool in carrying out inspections in those areas, complementing the set of inspection checklist adopted by the ATCM through Resolution 5 (1995). The US also noted that the draft checklist had been prepared and tested in Antarctica by inspecting five ASPAs and one ASMA in the 2005/06 season.

(318) Brazil commented on the usefulness of the checklist, noting that it had made use of them informally during the last summer in assessing the Admiralty Bay ASMA.

(319) France and Chile, supported by several other Members, expressed their support for this new checklist, noting that it remains a useful tool for future inspection of ASPAs and ASMAs, and carries no formal obligation to use it.

(320) Argentina stated that it was pleased to see that its comments on a previous draft were taken into account in this final version of the document. Consequently, Argentina supported the recommendation for adoption.

(321) Argentina introduced WP 54 *Proposal to revise the inspection checklists contained in Resolution 5 (1995)*, noting that considerable time had passed since the set of checklists were adopted. It proposed that, taking into account the experience gained with their extended use and considering that valuable information can be obtained from the Secretariat's Information Exchange System prior to the inspections visits, the list adopted in 1995 could be reviewed.

(322) Argentina proposed to establish an ICG in the framework of the ATCM to begin with the review of List A *"Permanent Antarctic Stations and Associated Installations"* appended to Resolution 5 (1995), as the first step towards revising all the lists included in the Resolution, and to urge the Parties to submit to the Secretariat the information required under the exchange of information requirements under the Antarctic Treaty and the Protocol.

(323) This proposition received unanimous support. Many Members and COMNAP notified their wish to participate in such an ICG if established by the ATCM.

(324) CEP Advice to the ATCM:

The Committee considered a proposed new checklist for inspecting protected and managed areas, and a separate proposal to review the existing inspection checklist A adopted under Resolution 5 (1995). The Committee agreed to forward the draft checklist for inspecting specially protected and managed areas in Antarctica to the ATCM for approval by means of a Resolution. The Committee supported the proposal for establishing an ATCM ICG to review the inspection checklist A.

Item 11: Emergency Response and Contingency Planning

(325) COMNAP introduced IP 91 *The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica,* informing the Committee that a set of four guidelines for fuel storage and handling in Antarctica had been developed by COMNAP between 1990 and 1993, and that they had provided valuable guidance to Antarctic operators for 15 years. COMNAP noted that the guidelines had been edited to make them compatible with the Protocol wording, and that the former four separate guidelines were reorganized in a single "COMNAP Fuel Manual" in which additional sections could be inserted as required.

(326) COMNAP stated that it will continue developing and updating the Fuel Manual and promoting and facilitating its use by all operators.

(327) The Committee thanked COMNAP for this work and for keeping the Committee informed.

Item 12: Waste Management

(328) Japan introduced IP 80 *Completion of a Four-year Campaign to Clean Up the Syowa Station Area,* covering its four-year programme to clean up the Syowa Station area from 2005 to 2008. The cleanup programme consisted of three major activities: cleaning up large old waste items like snow vehicles, an intensive cleanup campaign, and starting sewage treatment for the Summer Lodge building at Syowa.

(329) The Committee congratulated Japan on the successful cleanup programme.

Item 13: Prevention of Marine Pollution

(330) ASOC introduced IP 58 *Antarctic Shipping* noting the increase in the number and type of vessels operating in Antarctica, and that this increase raised environmental and marine safety issues. While there is considerable effort underway to improve the standards of shipping in the Antarctic region, not all proposed measures apply to all vessels operating in the region, and many international shipping instruments developed and adopted by the International Maritime Organization (IMO) over the past decades have not been ratified.

(331) ASOC undertook a review of the recent developments in the framework of IMO and the ATCM and made several recommendations to the ATCM, including a joint assessment

with IMO of the threats resulting from the full range of vessels operating in the region, increasing collaboration between national-level IMO and ATCM representatives, urgent ratification and full implementation of existing shipping instruments by ATCPs, and greater control by Flag and Port States over vessels operating in the Antarctic region.

(332) The Committee thanked ASOC for keeping it informed on this matter and noted the activities being undertaken within the IMO.

Item 14: Cooperation with Other Organisations

(333) The Chair introduced WP 28 *Report of the CEP Observer to the twenty-sixth meeting of the Scientific Committee to CCAMLR, 22 to 26 October 2007*. The Chair drew the Committee's attention to several matters arising from SC-CAMLR XXVI, noting in particular:

- the Scientific Committee's suggestion for a joint SC-CAMLR and CEP workshop in 2009. The Chair recommended that the Committee give consideration to agenda items for such a workshop, as well as a possible venue and timing;
- the Scientific Committee's decision to discontinue the Seal Island CCAMLR Ecosystem Monitoring Programme (CEMP) site as research was no longer undertaken in the area;
- the outcomes to the bioregionalisation workshop had been endorsed by the Scientific Committee and agreed that further work be undertaken within the context of its Working Group on Ecosystem Monitoring and Management (WG-EMM);
- the Scientific Committee's concern over the increasing interest in the krill fishery for the 2007/08 season;
- the attention given to developing a systematic process for assessing the impacts of bottom fishing on vulnerable marine ecosystems;
- the very low levels of marine mammal by-catch and zero levels of seabird by-catch in longline fisheries;
- the Scientific Committee's encouragement for its members to use and promote ACAP resources and to work with Regional Fisheries Management Organisations (RFMOs) to reduce bird by-catch in fisheries adjacent to CCAMLR waters;
- the Scientific Committee's decision to establish a WG-EMM sub group on status and trends in predator populations.

(334) Argentina expressed its concern about the potential increase in the exploitation of krill, and its possible effects on the rest of the food web, especially on species of interest to the CEP under Annex II. Argentina wondered if the Committee could express its concern on this matter to the ATCM.

(335) The Committee noted the potential implication of declining krill stocks on those species covered by Annex II.

(336) The CCAMLR observer informed the Meeting that the current levels of krill catches had not increased despite the five-fold increase in notified catches for the 2007-08 season. The CCAMLR observer also reminded the CEP that the impact of krill fishing on krill dependent species is a central part of the risk-based ecosystem approach to management of marine resources taken by CCAMLR.

(337) Noting the proposal made by the CCAMLR Scientific Committee to hold a joint SC-CAMLR and CEP workshop in 2009, to further strengthen cooperation between the two bodies, the Committee was requested to give further consideration to this proposal, and to identify key agenda items for such a workshop.

(338) The Committee noted ATCM Resolution 1 (2006) on CCAMLR in the Antarctic Treaty System, which encourages increased cooperation between the ATCM and CCAMLR at a practical level in respect of the conservation and protection of the Antarctic environment.

(339) Noting also that there are several areas of common interest between the CEP and the SC-CAMLR, the Committee welcomed the proposal for a joint SC-CAMLR and CEP workshop, as an opportunity to consider ways in which to improve and maintain practical cooperation between the two bodies.

(340) The Committee recommended that an overarching theme for the proposed workshop might be: 'Opportunities for collaboration and practical cooperation between the CEP and SC-CAMLR'.

(341) The Committee further recommended that issues of common interest between the CEP and the SC-CAMLR might be used to focus discussions relating to the proposed workshop theme. Such issues of common interest might include, though may not be limited to:

- Climate change research
- Ecosystem and environmental monitoring
- Protected areas and spatial management measures
- Species requiring special protection
- Marine pollution
- Biodiversity and non-native species

(342) The aim would not be to address theses issues in substantive detail, but rather to focus on the development of mechanisms for practical cooperation which may be specific to these issues.

(343) Although the timing of the workshop remains open for discussion, it could be conveniently scheduled immediately prior to CEP XII in Baltimore, US. The workshop

might follow a similar model to the two-day workshop on Antarctica's Future Environmental Challenges held in Edinburgh, UK, immediately prior to CEP IX.

(344) A workshop Steering Group comprising both CEP and SC-CAMLR Members should be convened as soon as is practical. The Committee agreed to nominate its Chair and two Vice chairs as representatives on the Steering Group. In developing a workshop agenda, this Steering Group might wish to consider the proposed workshop theme and issues of common interest outlined above.

(345) Pending the further development of an agenda and practical arrangements for the workshop, CEP Members were encouraged to consider the nomination of workshop participants to contribute to the issues outlined above.

(346) The Committee requested the CCAMLR observer to forward its recommendations on the proposed workshop to SC-CAMLR Members for their consideration. The Committee looked forward to working together with SC-CAMLR colleagues towards the convening of a joint workshop in 2009.

(347) The CEP Chair introduced to WP 23 *Commission for the Conservation of Antarctic Marine Living Resources Performance Review* (New Zealand) noting the Commission's decision to undertake a performance review of CCAMLR. In recognition of the important linkages between the ATCM and CCAMLR, the Commission had decided to invite the Chair of the CEP to participate in the Review, *ex officio*, as one of the panel members.

(348) The Chair noted that the performance criteria were appended to WP 28. A draft Resolution on the issue was also appended to WP 23. The CEP Chair welcomed Members providing him with comments and suggestions with respect to his involvement in the panel.

(349) Australia welcomed the CEP Chair's involvement in the review panel, noting that of the criteria set out for reviewing the performance of CCAMLR, matters related to environmental protection, conservation, protected areas, marine pollution and ecosystem approach were matters the Chair may wish to particularly concentrate on.

(350) The CCAMLR observer noted that the review panel would meet in Hobart 23 – 27 June 2008 and that the panel's report would go to CCAMLR XXVII in October of this year.

(351) The Chair welcomed SCAR's invitation for a CEP representative to attend the SCAR delegates meeting in Moscow (14-16 July 2008). The Committee thanked SCAR for this invitation and welcomed Hugo Decleir's (Belgium) offer to represent the Committee at this meeting.

(352) The Chair provided a verbal report on his recent participation in a SCAR Action Group established to review and improve SCAR's advisory role to support the work of the CEP. The Chair noted that several recommendations to enhance this role had been agreed and that a more complete report would be provided to the CEP once the recommendations and findings had been considered by the SCAR delegates and its Executive.

(353) SCAR thanked the CEP Chair for his participation in the action group.

Item 15: General Matters

(354) No papers received.

Item 16: Election of Officers

(355) The meeting re-elected Dr Neil Gilbert (New Zealand) for a second term as Chair of the CEP and Ewan McIvor (Australia) for a first term as Second Vice Chair. Both were elected by acclamation. Dr Yves Frenot continues in his role as First Vice Chair.

(356) The Committee thanked Dr Tânia Brito (Brazil) for her involvement during the two last years in the CEP work as Vice Chair and congratulated Neil Gilbert and Ewan McIvor for their election.

Item 17: Preparation for CEP XII

(357) The Committee adopted the agenda for CEP XII in Appendix 2.

Item 18: Adoption of the Report

(358) The Committee adopted the draft Report.

Item 19: Closing of the Meeting

(359) The Chair closed the meeting on Friday 6 June 2008.

ANNEX 1

CEP XI Agenda and Final List of Documents

Paper Nº	Title	Submitted by

Item 1: Opening of the Meeting

Item 2: Adoption of the Agenda

Item 3: Strategic Discussion on the Future of the CEP

WP 17	Preparation for Scheduled CEP Discussions: Reviews of Past Activities	Australia
WP 29 rev.1	A Five-Year Work plan for the CEP: Report on Intersessional Review	New Zealand
WP 57	Report on Effectiveness of Trial Informal Group	Brazil

Item 4: Operation of the CEP

SP 3 rev.2	Secretariat Report 2007/08	Secretariat
SP 12	Electronic Information Exchange System	Secretariat
IP 14	Rapport annuel présenté par la France conformément à l'article 17 du Protocole au Traité sur l'Antarctique relatif à la protection de l'environnement 2008	France
IP 15	Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	Ecuador
IP 22	Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Ukraine
IP 24	Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Japan
IP 25	Informe Anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	Spain
IP 34	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2007 - 2008	Uruguay
IP 36	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Belgium
IP 42	Annual Report pursuant to Article 17 of The Protocol on Environmental Protection to The Antarctic Treaty	South Africa
IP 55	Report on the Implementation of the Protocol on Environmental Protection as Required by Article 17 of the Protocol	United Kingdom
IP 68	Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	China
IP 71	Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007-2008	Italy
IP 90	Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007/2008	New Zealand
IP 96	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Peru

Paper Nº	Title	Submitted by

Item 5: International Polar Year

IP 59	International Polar Year 2007-2008 Planning Document: 2008 and Beyond	SCAR
IP 88	Antarctic Treaty Summit: Science-Policy Interactions in International Governance	IPY-IPO
IP 125	South American Network on Antarctic Marine Biodiversity (BioMAntar)	Brazil

Item 6: Environmental Impact Assessment

6a) Draft comprehensive environmental evaluations

WP 5	The Draft Comprehensive Environmental Evaluation for the construction and operation of the Chinese Dome A Station in Antarctica	China
WP 15	Report of the Intersessional Open-ended Contact Group to Consider the Draft CEE for the "Proposed Construction and Operation of the New Chinese Research Station at Dome A"	Australia
IP 4	The Draft Comprehensive Environmental Evaluation for the construction and operation of the Chinese Dome A Station in Antarctica	China
IP 77	Additional Information on draft CEE on proposed new Chinese Dome A Station in Antarctica	China

6b) Other EIA matters

WP 12	Human Disturbance to Wildlife in the Broader Antarctic Region: A Review of Findings	SCAR
WP 34	A Mechanism for Centralizing Tourism and Non-governmental Activity Declarations and Authorization Requests Suitable for Taking Cumulative Impacts into Account	France
WP 60	Quantifying Atmospheric Emissions in Antarctic Comprehensive Environmental Evaluations	United Kingdom
SP 8	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2007 and March 31st 2008	Secretariat
IP 1	Initial Environmental Evaluation Law-Racovita Base	Romania
IP 16	Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica	India
IP 26	Initial Environmental Evaluation for Installation of Earth Station at Maitri, Schirmacher Oasis, Antarctica	India
IP 41	A decade of Antarctic tourism: Status, change, and actions needed	ASOC
IP 44	Results of Russian studies of the subglacial Lake Vostok during the season 2007-2008	Russian Federation
IP 45	On obtainment of permit to authorize activities of the Russian Antarctic Expedition for the period from 2008 to 2012	Russian Federation
IP 49	Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Maitri, Schirmacher Oasis, Antarctica	India
IP 101	The ANDRILL Independent Environmental Audit	New Zealand and United Kingdom
IP 102	On the Issue of the Replacement of Fuel Tanks at Vernadsky Station	Ukraine
IP 105	Plan de Manejo Ambiental Estación Maldonado Ecuador	Ecuador
IP 124	Initial Environmental Evaluation "RMM-technology on recycling of solid food wastes at Ukrainian Antarctic Vernadsky station"	Ukraine

Paper Nº	Title	Submitted by

Item 7: Area Protection and Management Plans

7a) Management plans

WP 3	Proposal for a new Antarctic Specially Protected Area at Narębski Point, Barton Peninsula, King George Island	Korea (ROK)
WP 7	Five Years Review of Antarctic Specially Protected Area (ASPA) N° 161 Terra Nova Bay, Ross Sea	Italy
WP 8	Revised Management Plan for Antarctic Specially Protected Area No. 138 Linnaeus Terrace, Asgard Range, Victoria Land	United States
WP 9	Revised Management Plan for Antarctic Specially Protected Area No. 137, North-west White Island, McMurdo Sound	United States
WP 13	Revised Management Plan for Antarctic Specially Protected Area No. 106 Cape Hallett, Northern Victoria Land, Ross Sea	United States
WP 14	Revised Management Plan for Antarctic Specially Protected Area No. 124 Cape Crozier, Ross Island	United States
WP 19	Revised Draft Antarctic Specially Protected Area (ASPA) Management Plan for Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica	Australia & China
WP 25 rev. 1	Review of Antarctic Specially Protected Area (ASPA) No.s 105, 118, 155, 154, and 156	New Zealand
WP 31	Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 135, 143, 160	Australia
WP 32	Review of Antarctic Specially Protected Area (ASPA) No. 141	Japan
WP 37 rev. 1	Revised Management Plan for Antarctic Specially Protected Area No. 123 Barwick and Balham Valleys, Southern Victoria Land	United States
WP 39	Draft Management Plan for ASMA No. X: South-west Anvers Island and Palmer Basin	United States
WP 46 rev. 1	Revisión del Plan de Gestión de la Zona Antártica Especialmente Protegida Nº 150 Isla Ardley, Bahía Maxwell, Isla Rey Jorge (Isla 25 De Mayo)	Chile
WP 47	Revisión del Plan de Gestión de la Zona Antártica Especialmente Protegida Nº 125 Península Fildes, Isla Rey Jorge (Isla 25 de Mayo)	Chile
WP 52	Revised Draft Antarctic Specially Protected Area Management Plan For Mount Harding, Grove Mount, East Antarctic	China
WP 53	Antarctic Specially Protected Area (ASPA) Management Plan for Marion Nunataks, Charcot Island, Antarctic Peninsula	United Kingdom
WP 58	Review of Draft Management Plans by Trial Informal Group	Brazil
SP 6	Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	Secretariat

7b) Historic sites and monuments

WP 61	Antarctic Protected Area System: Revised List of Historic Sites and Monuments - Measure 3 (2003). Guidelines for its Application	Chile
IP 12	Recuperación del Sitio Histórico Nº 56 Base Aérea Antártica "Pdte. Gabriel González Videla"	Chile

7c) Site guidelines

WP 2	Site Guidelines for Wordie House, Winter Island, Argentine Islands	Ukraine & United Kingdom
WP 12	Human Disturbance to Wildlife in the Broader Antarctic Region: A Review of Findings	SCAR
WP 40 rev.2	Site Guidelines for Shingle Cove, Coronation Island	United Kingdom
WP 44 rev. 1	Site Guidelines for Devil Island, Vega Island	United Kingdom
WP 45	Site Guidelines for Cape Hallett, Northern Victoria Land, Ross Sea	United States
WP 56	Site Guidelines for Whalers Bay, Deception Island, South Shetland Islands	Argentina, Chile, Norway, Spain, United Kingdom and United States
WP 59	Guidelines for Half Moon Island, South Shetland Islands	Argentina
IP 6 rev. 1	Antarctic Site Inventory: 1994-2008	United States
IP 82	Update on the Antarctic Peninsula Landing Site Use and Site Guidelines	IAATO

Paper Nº	Title	Submitted by

7d) Systematic environmental geographic framework

WP 27	Systematic Environmental Protection in Antarctica: Final report on Environmental Domains Analysis for the Antarctic continent as a dynamic model for a systematic environmental geographic framework for Annex V of the Protocol	New Zealand

7e) Other Annex V matters

WP 41 rev. 1	Guidance for Working Papers on Area Protection and Management	United Kingdom
IP 2	Workshop on Bioregionalisation of the Southern Ocean (Brussels, Belgium, August 2007)	United Kingdom & United States
IP 3	Proposed approach for the identification of important marine areas for conservation	United Kingdom
IP 30	Final Report on the Research Project "Risk assessment for Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas"	Germany
IP 57	Area Protection: Time for Action	ASOC
IP 64	Grove Mountains, East Antarctica - between scientific research and environmental protection	Romania
IP 94	Ross Sea Heritage Conservation Project: Conservation of Shackleton's Hut, Cape Royds, ASPA 157	New Zealand
IP 109	Amundsen-Scott South Pole Station, South Pole Antarctic Specially Managed Area (ASMA No. 5) First Year Management Report	United Satates
IP 110	Report on Exploration of Antarctic Subglacial Aquatic Environments: Environmental and Scientific Stewardship	United States
IP 117	The Admiralty Bay ASMA website	Brazil
IP 126	Report of the Deception Island Antarctic Specially Managed Area (ASMA) Management Group	Argentina, Chile, Norway, Spain, united Kingdom & United States

Item 8: Conservation of Antarctic Flora and Fauna

8a) Quarantine and non-native species

WP 16	Antarctic Alien Species Database	Australia
IP 17	Measures to protect the Larsemann Hills, East Antarctica, from the introduction of non-native species	Australia, China, India, Romania & Russian Federation
IP 33	Medidas preventivas para evitar la introducción de especies alienas en la Antártida, en cumplimiento del Anexo II del Protocolo	Uruguay
IP 75	Non-native Species Incursions at Scott Base, Antarctica	New Zealand
IP 93	Non-native Species Awareness Campaign: "Don't Pack a Pest" When Traveling to Antarctica	United States
IP 98	Survey on existing procedures concerning introduction of non native species in Antarctica	COMNAP
IP 110	Report on Exploration of Antarctic Subglacial Aquatic Environments: Environmental and Scientific Stewardship	United States

Paper Nº	Title	Submitted by

8b) Specially protected species

WP 10 rev. 1	Status of the Regional, Antarctic Population of the Southern Giant Petrel - Progress	SCAR
WP 30 rev.3	Draft Action Plan for Southern Giant Petrel Macronectes giganteus	New Zealand

8c) Marine acoustics

8d) Other Annex II matters

IP 21	Update on Wildlife Awareness Information for Aircraft Operations in Antarctica	United Kingdom
IP 107	Censos del Petrel Gigante del Sur Macronectes giganteus y las Skúas Catharacta spp en la Punta Fort Williams-Isla Greenwich y la Isla Barrientos, Shetland del Sur, Antártida	Ecuador

Item 9: Environmental Monitoring and Reporting

9a) Climate change

WP 35	Antarctic Climate Change Issues	Norway & United Kingdom
IP 23	Australia's Antarctic and Southern Ocean Climate Science	Australia
IP 50	Antarctic Peninsula: rapid warming in a pristine environment	United Kingdom
IP 51	Antarctic Peninsula: Ice shelf status	United Kingdom
IP 56	Impacts of Climate Change on Antarctic Ecosystems	ASOC
IP 62	Antarctic Climate Change and the Environment: A Progress Report	SCAR

9b) Other environmental monitoring and reporting matters

WP 24	Improving the CEP's Role in Advising the ATCM on the State of Antarctic Environments	New Zealand
WP 55	The Marine Biodiversity Information Network: 2010 and Beyond	Belgium
IP 7	Summary of Environmental Monitoring and Reporting Discussions	Australia
IP 35	Environmental Monitoring of the Indian Permanent Station-Maitri In Pursuant to the Article 17 of Protocol on Environmental Protection to the Antarctic Treaty	India
IP 54	The Recovery of Drilling Fluid from a Deep Ice-core Drilling Site on James Ross Island, Antarctic Peninsula	United Kingdom and France
IP 97	Antarctic Persistent Organic Pollutants. Notes on a Request from the Stockholm Convention	Chile
IP 118	Brazilian contribution to the Monitoring Programme for the Admiralty Bay Antarctic Specially Managed Area (ASMA Nº 1)	Brazil
IP 122	Monitoring of Human Impacts at McMurdo Station, Antarctica	United States

Item 10: Inspection Reports

WP 26	A Proposed Checklist for Inspecting Specially Protected and Managed Areas in Antarctica	New Zealand, United Kingdom & United States
WP 54	Proposal to revise the inspection checklists contained in Resolution 5 (1995)	Argentina

Paper Nº	Title	Submitted by

Item 11: Emergency Response and Contingency Planning

IP 91	The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica	COMNAP

Item 12: Waste Management

IP 80	Completion of a Four-year Campaign to Clean Up the Syowa Station Area	Japan

Item 13: Prevention of Marine Pollution

IP 58	Antarctic Shipping	ASOC

Item 14: Cooperation with Other Organisations

WP 23	Commission for the Conservation of Antarctic Marine Living Resources Performance Review	New Zealand
WP 28	Report of the CEP Observer to the twenty-sixth meeting of the Scientific Committee to CCAMLR, 22 to 26 October 2007	New Zealand
IP 127	COMNAP Report to ATCM XXXI	COMNAP

Item 15: General Matters

Item 16: Election of Officers

Item 17: Preparation for CEP XII

Item 18: Adoption of the Report

Item 19: Closing of the Meeting

ANNEX 2

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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)									
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
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 occurences in Antarctica 4. Review / endorse SCAR's RiSCC guidelines	Secretariat preparation of topic summary	Consideration of results of Alien in Antarctic IPY project Report by SCAR on workshop on minimising introduction of alien species Submission of information about measures taken by Parties Dedicated time for discussion	Workshop with SCAR and COMNAP or ICG established	Dedicated time for discussion						
Tourism and NGO activities	1	1. Provide advice to ATCM as requested	ICG established as required	If required, dedicated time for discussion								
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		Standing sub-item. SCAR report presented to CEP - dedicated time for discussion		Standing sub-item		Standing sub-item		Standing sub-item		Standing sub-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)								
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
Global Pressure: Pollution	1	1. Maintain a watching brief on pollution monitoring	SCAR to compile information about POPs	Consideration of SCAR report and address 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 Subsidiary Group on Management Plans or Trial Informal Group	Consideration of SGMP / TIG report	SGMP / TIG conducts work as required	Consideration of SGMP / TIG report. Review of effectiveness of SGMP (if esiabliished at ATCM XXXI)	SGMP / TIG conducts work as required	Consideration of SGMP / TIG report	SGMP / TIG conducts work as required	Consideration of SGMP / TIG report	SGMP / TIG conducts work as required	
Marine protected areas	1	1. Cooperate with CCAMLR on Southern Ocean bioregionalisation 2. Identify processes for MPA designation		Review CCAMLR outcomes and consider further CEP action								

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)									
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
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"		Assign to a Standing Group; or assign to the Treaty Secretariat; or Standing item agenda	Consultation with "expert" bodies		Workshop	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)								
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
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			SG report, or Secretariat report, or standing item		SG report, or Secretariat report, or standing item		SG report, or Secretariat report, or standing item		SG report, or Secretariat report, or 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		Dedicated discussion of environmental monitoring and reporting Report by SCAR on current long-term monitoring		Standing Group established				Dedicated time for discussion and possible establishment of an Expert Group		
Exchange of Information	2	Assign to the Secretariat	Commence use of EIES	Secretariat Report		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)									
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
Site specific guidelines for tourist-visited sites	2	1. Review site specific guidelines as required 2. Provide advice to ATCM as required		Assign to a Standing Group	Standing Group conducts work as required	SG report	Standing Group conducts work as required	SG report	Standing Group conducts work as required	SG report	Standing Group conducts work as required	SG report
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 Consideration of work on reporting of emissions in CEEs	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required Standing Group established to handle draft CEEs (and other EIA matters) or dedicated discussion time to strengthen existing ICG process	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required SG report or ICG report	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required SG report or ICG report	Establish ICG to review draft CEEs as required	Consideration of ICG report on draft CEE, as required SG report or ICG report

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)									
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
Specially protected species	3	1. Consider listing / delisting proposals as they come forward	Forward SGP data and standard census methodology to ACAP for consideration	Consideration of advice from ACAP								
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		Assign to an area protection Standing Group						
Emergency response action and contingency planning	3	To be determined				COMNAP advice on ERA and CP 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)									
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
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
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		

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)										
			Inters. period	CEP XII 2009	Inters. period	CEP XIII 2010	Inters. period	CEP XIV 2011	Inters. period	CEP XV 2012	Inters. period	CEP XVI 2013
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		
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

CEP XII Provisional Agenda

1. Opening of the Meeting
2. Adoption of the Agenda
3. Strategic Discussions on the Future Work of the CEP
4. Operation of the CEP
5. International Polar Year
6. Environmental Impact Assessment (EIA)
    a. Draft Comprehensive Environmental Evaluations
    b. Other EIA Matters
7. Area Protection and Management Plans
    a. Management Plans
    b. Historic Sites and Monuments
    c. Site Guidelines
    d. 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

Appendix 3

Subsidiary Group on Management Plans

Background

Since its first meeting in 1998, the CEP has discussed the need to improve its procedures for reviewing new and revised Management Plans. During this time, the CEP has adopted a documented process for its consideration of draft Antarctic Specially Protected Area Management Plans,[1] established individually convened informal intersessional contact groups for each draft Management Plan and established an online Discussion Forum to assist with intersessional work. The resource burden created by the large number of Management Plans under review each year will continue to be further considered within the context of the CEP's wider discussions on its five year work plan.

Benefits of establishing a Subsidiary Group on Management Plans (SGMP)

Under its Rules of Procedure, the CEP is able to establish formal subsidiary groups to assist with its work.[2] CEP X considered an Australian proposal to establish a coordinated intersessional process to review draft Management Plans, supported by a standing group, as a further improvement.[3]

CEP X agreed to establish a Trial Intersessional Group (TIG), considering the major benefits of establishing a TIG to be:

- improving the efficiency of CEP meetings by replacing detailed consideration of each draft Management Plan with consideration of the recommendations arising from a coordinated intersessional review (particularly with the increasing number of Management Plans falling due for a five-year review);
- promoting consistency between Management Plans through the TIG providing proponents with practical advice on the suitability of the Management Plan for the area in question, consistency with other Management Plans, and how the proposed Management Plan would contribute to the protected areas system as a whole; and
- improved participation by Members in intersessional work through utilising an experienced core group of participants while maintaining open membership of the group, achieving continuity and improved institutional knowledge.

Operation and outcome of the Trial Intersessional Group

The TIG was convened by Vice Chair Dr Tânia Britto of Brazil and operated remotely through the online Discussion Forum. Discussion took place in English, with the recommendations to proponents and report to the CEP translated through the Antarctic Treaty Secretariat to the four languages of the Antarctic Treaty. The TIG has reported to CEP XI that the trial was successful, and CEP XI considers that the appropriate next step is to formally establish a SGMP.

[1] Guidelines for CEP Consideration of New and Revised Draft Management Plans for Protected Areas (2000, and revised in 2003).

[2] 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 where applicable.

[3] ATCM XXX WP 10 submitted by Australia.

Potential further activities for a SGMP

Other activities a SGMP could undertake as its resources allow include providing practical advice as requested to CEP Members who intend to prepare new draft Management Plans for the CEP's consideration, revising current guidelines and providing guidance to the CEP on how Management Plans can be made more consistent. This guidance could be used by CEP Members where Management Plans are reviewed with little or no changes made and are therefore not sent to the SGMP. The Terms of Reference (TOR) should be sufficiently broad to include such activities without the need for the CEP to continuously review the TOR.

Proposal for establishing a SGMP

Draft TOR are below for the Antarctic Treaty Consultative Meeting's (ATCM) consideration. Matters important to the operation of the SGMP are also outlined below, along with the timeline for its operation[4]. It will be necessary to update the *Guidelines for CEP Consideration of New and Revised Draft ASPA and ASMA Management Plans* to reflect the establishment of the SGMP (see Annex 1).

Proposed Terms of Reference

1) Examine any draft new or revised Management Plan to consider, in consultation with relevant experts if appropriate:
   - whether it is consistent with the provisions of Annex V to the Protocol, particularly Articles 3, 4 and 5[5], and with relevant CEP guidelines;[6]
   - its content, clarity, consistency and likely effectiveness;[7]
   - whether it clearly states the primary reason for designation;[8] and
   - whether it clearly states how the proposed Area complements the Antarctic protected areas system as a whole.[9]
2) Advise proponents of suggested amendments to the draft Management Plan to address issues in relation to 1) above.
3) Submit a Working Paper to the CEP with recommendations for the adoption or otherwise of each new or revised draft Management Plan, identifying where the Plan reflects comments received by Members, and where they have not been, the reasons for not doing so. The Working Paper is to include all revised Management Plans and the information required by the ATCM's Legal and Institutional Working Group.
4) Provide advice to the CEP as necessary for the purpose of improving Management Plans and the process for their intersessional review.

Operational matters

- Translation: Under Rule 22 of the CEP Rules of Procedure, English, French, Russian and Spanish shall be the official languages of subsidiary bodies. The appropriateness of

[4] CEP X Final Report, p259.

[5] Modified from "Terms of Reference for an Intersessional Contact Group to Consider draft Management Plans" ToR #2 (CEP VII Final Report, Annex 4).

[6] Currently including – for ASPAs – Resolution 2 (1998) *Guide for the Preparation of Management Plans for Antarctic Specially Protected Areas*.

[7] From "Guidelines for CEP Consideration of New and Revised Draft ASPA and ASMA Management Plans" paragraph 8 (CEP VI Final Report, Annex 4), and "Terms of Reference for an Intersessional Contact Group to Consider draft Management Plans" ToR #2 (CEP VII Final Report, Annex 4).

[8] Agreement at CEP VIII (Final Report paragraph 187).

[9] Agreement at CEP VIII (Final Report paragraph 187).

translation arrangements for subsidiary bodies needs to be considered on a case by case basis. Noting that the proposed SGMP will conduct its business remotely, the CEP considers that translation of the SGMP's advice to proponents and to the CEP is sufficient to achieve compliance with Rule 22.

- Membership: While membership of the SGMP will remain open to all CEP Members, CEP Representatives are particularly encouraged to participate in the SGMP where they will be able to do so for several consecutive intersessional periods so as to achieve continuity in membership and improved institutional knowledge. The expectation is that all Members in the SGMP would participate in the review of all Plans except those they have proposed. The SGMP needs to maintain a minimum number (4) of participants to remain viable. The convenor will have oversight of maintaining the membership of the SGMP.
- Convener: The convener of the SGMP may be either one of its elected Vice Chairs or a CEP Representative elected as convenor under the same conditions as set out for the Vice Chairs in Rule 16 of the Rules of Procedure as applicable. The convenor may, but is not required to, provide technical contribution to the SGMP's activities.
- Submission: Revised draft Management Plans should be submitted to the SGMP at least 60 days prior to the meeting at which the Plan will be considered by the CEP.
- Review: The CEP intends to review the effectiveness of the SGMP after a 2 year period, and to revise the TOR as necessary.

Timeline

Period	Action	Timing
Intersessional period	• Antarctic Treaty Secretariat posts all draft Management Plans referred for intersessional discussion to the online Discussion Forum.	As soon as possible following CEP meeting
	• Interested CEP Members and Observers post comments on draft Management Plans via the Discussion Forum. • Subsidiary Group on Management Plans (SGMP) considers draft Management Plans in accordance with its Terms of Reference and prepares a report with recommendations for proponents. SGMP report is translated and posted to the Discussion Forum.	3-6 months following CEP meeting
	• Draft Management Plans are revised by proponents in response to comments provided by Members, Observers and the SGMP, and posted to the Discussion Forum.	60 days prior to CEP meeting
Working Paper deadline	• SGMP convener submits Working Paper with recommendations for the adoption or otherwise of draft Management Plans.	45 days prior to CEP meeting.
CEP meeting	• Consideration by CEP of Working Paper containing SGMP's recommendations.	

Appendix 3 - Annex 1

Guidelines for CEP Consideration of New and Revised Draft ASPA and ASMA Management Plans

1. Draft Management Plans (new or revised) shall be submitted by the proponent(s) to the CEP for consideration at its next meeting.

2. For those areas that include a marine component, and which meet the criteria set out in Decision 9 (2005)[10], draft Management Plans shall also be forwarded by the proponent(s) to CCAMLR for its consideration.

- The proponent(s) shall submit draft Management Plans to the CCAMLR Secretariat by mid-June to ensure that CCAMLR has adequate time to review the draft plans and provide comments within the timetable of the CEP's own review. Draft Management Plan(s) may be submitted to CCAMLR ahead of submission to the CEP depending on the timing of the CEP meeting in any one year.

3. At its meeting the CEP may, as appropriate, refer draft Management Plans to:

- the ATCM for adoption; or
- to the Subsidiary Group on Management Plans (SGMP) for intersessional review.

4. In accordance with its Terms of Reference, the SGMP shall consider each draft Management Plan referred to it, advise the proponent(s) on recommended changes, consider any revised version of the Management Plan prepared during the intersessional period, and report to the CEP on its review.

5. With consideration of the recommendations of the SGMP, and any additional comments by Members, the CEP shall consider each Management Plan reviewed by the SGMP in accordance with paragraph 3 above.

[10] Decision 9 (2005) states that:

Draft management plans which require the approval of CCAMLR are those which include marine areas:

- In which there is actual harvesting of potential capability for harvesting of marine living resources which might be affected by the sites' designation; or
- For which there are provisions specific in a draft management plan which might prevent or restrict CCAMLR-related activities.

And that:

Proposals for ASPAs and ASMAs which might have implications for CCAMLR Ecosystem Monitoring Programme (CEMP) sites should be submitted to CCAMLR for its consideration before any decision is taken on the proposal.

ANNEX F

Reports pursuant to Recommendation XIII-2

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.

There has been one new accession to the Antarctic Treaty in the past year. The Principality of Monaco acceded to the Antarctic Treaty on May 31, 2008. There are now forty-seven (47) Parties to the Treaty. There have been no new accessions to the Protocol on Environmental Protection in the past year. There are thirty-two (32) 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
Greece	Mr Fransiscos Verros	22 May 2003
	Dr Emmanuel Gounaris	22 May 2003
	Dr Vassilios Patronas	22 May 2003
India	Prof. Upendra Baxi	6 October 2004
	Mr Ajai Saxena	6 October 2004
	Dr N. Khare	6 October 2004
Japan	Judge Soji Yamamoto	1 May 2003
United States	Professor Daniel Bodansky	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.

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			

[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.

Participant	Signature	Consent to be bound		Other Action	Notes
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]

[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.

Participant	Signature	Consent to be bound		Other Action	Notes
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**		

[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.
"In communicating its decision to accede to the Antarctic Treaty, the Government of the Oriental Republic of Uruguay declares that it reserves its rights in Antarctica in accordance with international law."

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

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
NON-CONSULTATIVE PARTIES						
Austria	Oct. 4, 1991					
Canada	Oct. 4, 1991	Nov. 13, 2003		Dec. 13, 2003		
Colombia	Oct. 4, 1991					
Cuba						
Czech Rep.[1,2]	Jan. 1, 1993	Aug. 25, 2004 [4]		Sept. 24, 2004		
Denmark	July 2, 1992					
Estonia						
Greece	Oct. 4, 1991	May 23, 1995		Jan. 14, 1998		
Guatemala						
Hungary	Oct. 4, 1991					
Korea, DPR of	Oct. 4, 1991					
Papua New Guinea						
Romania	Oct. 4, 1991	Feb. 3, 2003		Mar. 5, 2003	Feb. 3, 2003	Mar. 5, 2003
Slovak Rep.[1,2]	Jan. 1, 1993					
Switzerland	Oct. 4, 1991					
Turkey						
Venezuela						

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* Signed at Madrid on October 4, 1991; thereafter at Washington until October 3, 1992.

** The following denotes date relating either to acceptance of Annex V or approval of Recommendation XVI-10
(A) Acceptance of Annex V (B) Approval of Recommendation XVI-10

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 a the date on which this Protocol was adopted. (Article 23)
***Adopted at Bonn on October 17, 1991 at XVI Antarctic Consultative Meeting.

1. Signed for Czech & Slovak Federal Republic on Oct. 2, 1992 - Czechoslovakia accepts the jurisdiction of the International Court of Justice and Arbitral Tribunal for the settlement of disputes according to Article 19, paragraph 1. On December 31, 1992, at midnight, Czechoslovakia ceased to exist and was succeeded by two separate and independent states, the Czech Republic and the Slovak Republic.

2. Effective date of succession in respect of signature by Czechoslovakia which is subject to ratification by the Czech Republic and the Slovak Republic.

3. Accompanied by declaration, with informal translation provided by the Embassy of Argentina, which reads as follows: "The Argentine Republic declares that in as much as the Protocol to the Antarctic Treaty on the Protection of the Environment is a Complementary Agreement of the Antarctic Treaty and that its Article 4 fully respects what has been stated in Article IV, Subsection 1, Paragraph A) of said Treaty, none of its stipulations should be interpreted or be applied as affecting its rights, based on legal titles, acts of possession, contiguity and geological continuity in the region south of parallel 60, in which it has proclaimed and maintained its sovereignty."

4. Accompanied by declaration, with informal translation provided by the Embassy of the Czech Republic, which reads as follows: "The Czech Republic accepts the jurisdiction of the International Court of Justice and of the Arbitral Tribunal under Article 19, paragraph 1, of the Protocol on Environmental Protection to the Antarctic Treaty, done at Madrid on October 4, 1991."

5. Ratification on behalf of the United Kingdom of Great Britain and Northern Ireland, the Bailiwick of Jersey, the Bailiwick of Guernsey, the Isle of Man, Anguilla, Bermuda, the British Antarctic Territory, Cayman Islands, Falkland Islands, Montserrat, St. Helena and Dependencies, South Georgia and the South Sandwich Islands, Turks and Caicos Islands and British Virgin Islands.

6. Acceptance is for the Kingdom in Europe. At the time of its acceptance, the Kingdom of the Netherlands stated that it chooses both means for the settlement of disputes mentioned in Article 19, paragraph 1 of the Protocol, i.e. the International Court of Justice and the Arbitral Tribunal. A declaration by the Kingdom of the Netherlands accepting the Protocol for the Netherlands Antilles was deposited on October 27, 2004 with a statement confirming that it chooses both means for the settlement of disputes mentioned in Article 19, paragraph 1 of the Protocol.

Department of State,
Washington, May 1, 2008.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at First Meeting (Canberra 1961)	10 Recommendations adopted at Second Meeting (Buenos Aires 1962)	11 Recommendations adopted at Third Meeting (Brussels 1964)	28 Recommendations adopted at Fourth Meeting (Santiago 1966)*	9 Recommendations adopted at Fifth Meeting (Paris 1968)	15 Recommendations adopted at Sixth Meeting (Tokyo 1970)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	ALL	ALL	ALL (except 10)
Bulgaria (1998)+						
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	ALL	ALL (except 10)
Ecuador (1990)+						
Finland (1989)+						
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL	ALL	ALL (except 8)	ALL (except 16-19)	ALL (except 6)	ALL (except 9)
India (1983)+	ALL	ALL	ALL (except 8***)	ALL (except 18)	ALL	ALL (except 9 & 10)
Italy (1987)+	ALL	ALL	ALL	ALL	ALL	ALL
Japan	ALL	ALL	ALL	ALL	ALL	ALL
Korea, Rep. (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Netherlands (1990)+	ALL (except 11 & 15)	ALL (except 3, 5, 8 & 10)	ALL (except 3, 4, 6 & 9)	ALL(except 20, 25, 26 & 28)	ALL (except 1, 8 & 9)	ALL (except 15)
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+						
U.K.	ALL	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2

*** Accepted as interim guideline

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	9 Recommendations adopted at Seventh Meeting (Wellington 1972)	14 Recommendations adopted at Eighth Meeting (Oslo 1975)	6 Recommendations adopted at Ninth Meeting (London 1977)	9 Recommendations adopted at Tenth Meeting (Washington 1979)	3 Recommendations adopted at Eleventh Meeting (Buenos Aires 1981)	8 Recommendations adopted at Twelfth Meeting (Canberra 1983)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL (except 5)	ALL	ALL	ALL	ALL	ALL
Bulgaria (1998)+						
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL (except 5)	ALL	ALL	ALL	ALL	ALL
Ecuador (1990)+						
Finland (1989)+						
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL (except 5)	ALL (except 2 & 5)	ALL	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL (except 1 & 9)	ALL	ALL
Italy (1987)+	ALL (except 5)	ALL	ALL	ALL (except 1 & 9)		
Japan	ALL	ALL	ALL	ALL	ALL	ALL
Korea, Rep. (1989)+	ALL	ALL	ALL	ALL	ALL	ALL
Netherlands (1990)+	ALL	ALL	ALL (except 3)	ALL (except 9)	ALL (except 2)	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+	ALL	ALL	ALL	ALL	ALL	
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL (except 1 & 9)	ALL (except 1)	ALL
Sweden (1988)+						
U.K.	ALL	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2

*** Accepted as interim guideline

+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	16 Recommendations adopted at Thirteenth Meeting (Brussels 1985)	10 Recommendations adopted at Fourteenth Meeting (Rio de Janeiro 1987)	22 Recommendations adopted at Fifteenth Meeting (Paris 1989)	13 Recommendations adopted at Sixteenth Meeting (Bonn 1991)	4 Recommendations adopted at Seventeenth Meeting (Venice 1992)	1 Recommendation adopted at Eighteenth Meeting (Kyoto 1994)
	Approved	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	ALL	ALL	ALL	ALL	ALL
Bulgaria (1998)+				XVI-10		
Chile	ALL	ALL	ALL	ALL	ALL	ALL
China (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
Ecuador (1990)+				XVI-10		
Finland (1989)+			ALL	ALL	ALL	ALL
France	ALL	ALL	ALL	ALL	ALL	ALL
Germany (1981)+	ALL	ALL	ALL (except 3,8,10,11&22)	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL	ALL	ALL
Italy (1987)+		ALL	ALL	ALL	ALL	ALL
Japan	ALL	ALL	ALL	XVI-10		ALL
Korea, Rep. (1989)+	ALL	ALL	ALL (except 1-11, 16, 18, 19)	ALL (except 12)	ALL (except 1)	
Netherlands (1990)+	ALL	ALL (except 9)	ALL (except 22)	ALL	ALL	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL	ALL	ALL	ALL
Peru (1989)+			ALL (except 22)	ALL (except 13)	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+			ALL	ALL	ALL	ALL
U.K.	ALL	ALL (except 2)	ALL (except 3, 4, 8, 10, 11)	ALL (except 4, 6, 8, & 9)	ALL	ALL
Uruguay (1985)+	ALL	ALL	ALL	ALL	ALL	ALL
U.S.A.	ALL	ALL	ALL (except 1-4, 10, 11)	ALL	ALL	ALL

* IV-6, IV-10, IV-12, and V-5 terminated by VIII-2
*** Accepted as interim guideline
+ Year attained Consultative Status. Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	5 Measures adopted at Nineteenth Meeting (Seoul 1995)	2 Measures adopted at Twentieth Meeting (Utrecht 1996)	5 Measures adopted at Twenty-First Meeting (Christchurch 1997)	2 Measures adopted at Twenty-Second Meeting (Tromso 1998)	1 Measure adopted at Twenty-Third Meeting (Lima 1999)
	Approved	Approved	Approved	Approved	Approved
Argentina	ALL	ALL	ALL	ALL	ALL
Australia	ALL	ALL	ALL	ALL	ALL
Belgium	ALL	ALL	ALL	ALL	ALL
Brazil (1983)+	ALL	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
Germany (1981)+	ALL	ALL	ALL	ALL	ALL
India (1983)+	ALL	ALL	ALL	ALL	ALL
Italy (1987)+	ALL	ALL			
Japan					
Korea, Rep. (1989)+	ALL				
Netherlands (1990)+	ALL	ALL	ALL	ALL	ALL
New Zealand	ALL	ALL	ALL	ALL	ALL
Norway	ALL	ALL	ALL		
Peru (1989)+	ALL	ALL	ALL	ALL	ALL
Poland (1977)+	ALL	ALL	ALL	ALL	ALL
Russia	ALL	ALL	ALL	ALL	ALL
South Africa	ALL	ALL	ALL	ALL	ALL
Spain (1988)+	ALL	ALL	ALL	ALL	ALL
Sweden (1988)+	ALL	ALL	ALL	ALL	ALL
U.K.	ALL	ALL	ALL	ALL	ALL
Uruguay (1985)+	ALL (except 2, 3, 4 and 5)	ALL (except 2)	ALL (except 3, 4 and 5)	ALL (except 2)	ALL
U.S.A.	ALL	ALL	ALL	ALL	ALL

+ Year attained Consultative Status Acceptance by that State required to bring into force Recommendations or Measures of meetings from that year forward.

Approval, as notified to the Government of the United States of America, of measures relating to the furtherance of the principles and objectives of the Antarctic Treaty

	2 Measures adopted at Twelfth Special Meeting (The Hague 2000)	3 Measures adopted at Twenty-Fourth Meeting (St. Petersburg 2001)	1 Measure adopted at Twenty-Fifth Meeting (Warsaw 2002)	3 Measures adopted at Twenty-Sixth Meeting (Madrid 2003)	4 Measures adopted at Twenty-Seventh Meeting (Cape Town 2004)
	Approved	Approved	Approved	Approved	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-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	*	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-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
Japan			*	ALL	XXVII-1 *, XXVII-2 *, XXVII-3 **
Korea, Rep. (1989)+			*	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 **, XXVII-4
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	*	XXVI-2 *, XXVI-3 **	XXVII-1 *, XXVII-2 *, XXVII-3 **
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 **, XXVII-4
Uruguay (1985)+	ALL	ALL (except XXIV-1 and XXIV-2)	*	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)	4 Measures adopted at Twenty-Ninth Meeting (Edinburgh 2006)	3 Measures adopted at Thirtieth Meeting (New Delhi 2007)
	Approved	Approved	Approved
Argentina	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Australia	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Belgium	ALL except Measure 1	ALL	ALL
Brazil (1983)+	XXVIII-2, XXVIII-3, XXVIII-4, XXVIII-5	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Bulgaria (1998)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Chile	XXVIII-2, XXVIII-3, XXVIII-4, XXVIII-5	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
China (1985)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Ecuador (1990)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Finland (1989)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
France	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Germany (1981)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
India (1983)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Italy (1987)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Japan	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
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 **
Netherlands (1990)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
New Zealand	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Norway	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
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 **
Poland (1977)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Russia	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
South Africa	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	ALL	XXX-1 *, XXX-2 *, XXX-3 **
Spain (1988)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
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 **
Ukraine (2004)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
U.K.	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
Uruguay (1985)+	XXVIII-2 *, XXVIII-3 *, XXVIII-4 *, XXVIII-5 **	XXIX-1 *, XXIX-2 *, XXIX-3 **, XXIX-4 ***	XXX-1 *, XXX-2 *, XXX-3 **
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 **

+ 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.

Office of the Assistant Legal Adviser for Treaty Affairs
Department of State
Washington, May 1, 2008

Report Submitted to Antarctic Treaty Consultative Meeting XXXI 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 2006 to 28 February 2007.

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 2007 – 2008 year will be submitted to ATCM XXXII, once the June 2008 deadline for exchange of information has passed.

The United Kingdom would like to remind Contracting Parties to CCAS that the reporting period for the Exchange of Information is from 1 March to the end of February each year. The reporting period was changed to the above dates during the September 1988 Meeting to Review the Operation of the Convention. This is documented in Paragraph 19(a) of the Report of that Meeting.

The Exchange of Information, referred to in Paragraph 6(a) in the Annex to the Convention, should be submitted to other Contracting Parties and to SCAR by 30 June each year, including nil returns. Currently, not all the information required in paragraph 6(a) is being provided and the UK would encourage all Contracting Parties to CCAS to submit returns on time to ensure that all relevant information can be 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).

May 2008

ANNEX A

Synopsis of reporting in accordance with Article 5 and the Annex of the Convention: Capturing and killing of seals during the period 1 March 2006 to 28 February 2007.

Contracting Party	Antarctic Seals Captured	Antarctic Seals Killed
Argentina	Nil	Nil
Australia	131[f]	Nil
Belgium	Nil	Nil
Brazil	275[b]	Nil
Canada	Nil	Nil
Chile	579[a]	Nil
France	40[g]	Nil
Germany	Nil	Nil
Italy*	-	-
Japan	Nil	Nil
Norway	Nil	Nil
Poland	Nil	Nil
Russia	Nil	Nil
South Africa	Nil	Nil
United Kingdom	7[c]	Nil
United States of America	682[d]	1[e]

* No report received

[a] 568 Antarctic fur seals, 11 leopard seals

[b] 30 Antarctic fur seals, 5 crabeater seals, 5 leopard seals, 230 southern elephant seals, 5 Weddell seals

[c] 1 southern elephant seal, 6 Weddell seals

[d] up to 500 Antarctic fur seals, 80 southern elephant seals, 102 Weddell seals

[e] 1 juvenile male Weddell seal

[f] 12 southern elephant seals, 119 Weddell seals

[g] 40 Weddell seals

All reported capturing was for scientific research.

ANNEX B

Convention for the Conservation of Antarctic Seals (CCAS)

London, 1 June – 31 December 1972

(The Convention entered into force on 11 March 1978)

State	Date of Signature	Date of deposit (Ratification or Acceptance)
Argentina[1]	9 June 1972	7 March 1978
Australia	5 October 1972	1 July 1987
Belgium	9 June 1972	9 February 1978
Chile[1]	28 December 1972	7 February 1980
France[2]	19 December 1972	19 February 1975
Japan	28 December 1972	28 August 1980
Norway	9 June 1972	10 December 1973
Russia[1,2,4]	9 June 1972	8 February 1978
South Africa	9 June 1972	15 August 1972
United Kingdom[2]	9 June 1972	10 September 1974[3]
United States of America[2]	28 June 1972	19 January 1977

Accessions

State	Date of deposit of Instrument of Accession
Brazil	11 February 1991
Canada	4 October 1990
Germany, Federal Republic of	30 September 1987
Italy	2 April 1992
Poland	15 August 1980

[1] Declaration or Reservation.

[2] Objection.

[3] The instrument of ratification included the Channel Islands and the Isle of Man.

[4] Former USSR.

Report to the Thirty-first Antarctic Treaty Consultative Meeting by the Head of the Australian Delegation in her capacity as Representative of the Depositary Government for the Convention on the Conservation of Antarctic Marine Living Resources

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 first Antarctic Treaty Consultative Meeting on the status of the Convention.

Australia advises the Antarctic Treaty Parties that, since the Thirtieth Antarctic Treaty Consultative Meeting, no States have acceded to the Convention.

The People's Republic of China lodged its application to become a member of the Commission for the Conservation of Antarctic Marine Living Resources, in accordance with Article VII(2) of the Convention, with the Depositary on 13 July 2007. Pursuant to Article VII(2) of the Convention, the People's Republic of China became a Member of the Commission on 2 October 2007.

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 to the Thirty-first Antarctic Treaty Consultative Meeting by the Head of the Australian Delegation in her capacity as Representative of the Depositary Government for the Agreement on the Conservation of Albatrosses and Petrels

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-first Antarctic Treaty Consultative Meeting on the status of the Agreement.

Australia advises the Antarctic Treaty Parties that, since the Thirtieth Antarctic Treaty Consultative Meeting, no States have acceded to the Agreement.

The Depositary further advises that Australia's reservation to the entry into force of the Amendment to Annex 1 of the Agreement was withdrawn on 23 November 2007.

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-first Antarctic Treaty Consultative Meeting

Introduction

1. The Twenty-sixth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was held in Hobart from 22 October to 2 November 2007. A number of routine matters were addressed along with notable specific issues, including:
   - CCAMLR fisheries in 2006/07;
   - 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 XXXI and CEP XI agendas. An overall summary of important discussions and decisions from CCAMLR XXVI is provided in Appendix I along with references to the meeting's report paragraphs.

CCAMLR Fisheries in 2006/07

3. Fisheries in the CAMLR Convention Area during 2006/07 (1 December 2006 to 30 November 2007) targeted Patagonian and Antarctic toothfish (*Dissostichus eleginoides* and *D. mawsoni*), mackerel icefish (*Champsocephalus gunnari*) and krill (*Euphausia superba*). The 2006/07 catches reported in CCAMLR-XXVI were interim catches, and the revised numbers will be published in Volume 20 of the *CCAMLR Statistical Bulletin* (*http://www.ccamlr.org/pu/e/e_pubs/intro.htm*).
4. The reported catch of *Dissostichus* spp. in 2006/07 (to 30 November 2007) was 16328 tonnes, taken predominantly by longlining, compared to 16843 tonnes in the previous season (1 December 2005 to 30 November 2006). It is estimated that, in addition to reported catches, some 3615 tonnes of *Dissostichus* spp. were taken as a result of IUU fishing in the Convention Area during 2006/07, compared with 3420 tonnes in 2005/06. The total global catch for *Dissostichus* spp. in 2006/07 was estimated at 26722 tonnes, compared with 30053 tonnes the previous season. For further discussion on IUU fishing, please refer to CCAMLR-XXVI, paragraphs 10.1 to 10.6 (see also paragraphs 10.7 to 10.50).
5. The reported krill catch in 2006/07 (to 30 November 2007) was 104586 tonnes compared with 106591 tonnes in the previous season. The reported catch in 2006/07 was well below the notified catch (368 000 tonnes; SC-CAMLR-XXV, paragraph 4.19). Annual catches of krill have remained in the relatively stable range of krill catches (80 000 to 120 000 tonnes) since 1992/93
6. The discrepancy in reported and notified krill catches for 2006/07 has been attributed to operational considerations such as fuel costs and processing difficulties.
7. However, the notified 2007/08 krill catch was 684 000 tonnes, an effective doubling of the notified catches for 2006/07 and in excess of five times the current catch level. The catches notified for 2007/08 are also higher than the catch trigger level for subdividing the precautionary catch limits for krill in Area 48.

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 become concentrated in any particular region or subarea, including small-scale management units. 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 trigger level in Area 48 should not be 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 2007/08 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 intent to participate in the krill fishery (CM 21-03) and management of bottom fishing in the CCAMLR Area (CM 22-06). All measures are published in the *Schedule of Conservation Measures in Force 2007/08* available from the CCAMLR Secretariat or the website: *http://www.ccamlr.org/pu/e/e_pubs/cm/07-08/toc.htm*.

10. In addition to the Catch Documentation Scheme (CDS) for *Dissostichus* spp. and conservation measures 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 the use of bottom trawling gear;
    - 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" and (k) "International actions to reduce the incidental mortality of seabirds arising from fishing".

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 gives 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. Nevertheless, CCAMLR has again requested its Members to increase surveillance in the Convention Area, particularly in the Indian Ocean Statistical Divisions 58.4.1, 58.4.2 and 58.4.3b. It is also developing a probability matrix to be used to improve the determination of IUU catches.

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 to fish in CCAMLR waters (*http://www.ccamlr.org/pu/e/sc/fish-monit/vess-licensed.htm*). CCAMLR also uses a centralized, satellite-based vessel monitoring system (c-VMS) in the CCAMLR Secretariat to monitor the movements of fishing vessels in the Convention Area. This system has allowed surveillance to be more efficiently deployed.

15. CCAMLR continues to interact with various 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.

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 endorsed a variety of scientific advice on estimating B_0 (initial exploitation biomass) for krill in various statistical areas. This parameter forms the basis for estimating krill precautionary catch levels.

18. The CCAMLR scientific community continues to explore ways in which ecosystem advice can be formally incorporated into management decisions. In this respect, the Commission afforded high priority to:

    - On-going development of management procedures to allocate the precautionary krill catch limit in the south-west Atlantic (Area 48) to Small Scale Management Units (SSMUs);
    - Further development of ecosystem models to take into account the complex interactions between predators, target species and fisheries other than the krill fishery;
    - Further consideration of bioregionalisation in the context of marine protected areas (see paragraph 26 below);
    - Further modelling work to include a special Workshop to be held in June 2008 to provide abundance estimates of land-based predators as well as a joint CCAMLR-IWC Workshop on Antarctic ecosystem model inputs in August 2008, 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.

By-catch in Longline and Trawl Fisheries

19. CCAMLR leads the world in implementing measures to reduce seabird mortality during longline fishing. Many CCAMLR measures, particularly the provisions of Conservation

Measure 25-03 (first adopted in 1992), 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*).

20. 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. 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 CAMLR Convention Area.

21. CCAMLR Resolution 22/XXIII remains as an important initiative in efforts to reduce incidental mortality of CAMLR Convention Area seabirds in adjacent areas.

22. CCAMLR continues to exchange information with other international fisheries and conservation organizations on the prevention of fisheries-induced seabird by-catch and the state of Antarctic seabird populations, as well as its experience with mitigation and associated conservation action. In particular, CCAMLR seeks advice from other regional fisheries bodies (particularly those managing tuna, such as ICCAT, IOTC, 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 by-catch data, including seabird by-catch.

23. 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 to address such concerns (please refer to the *Schedule of CCAMLR Conservation Measures 2007/08* at *http://www.ccamlr.org/pu/e/e_pubs/cm/07-08/toc.htm*).

Protected Areas (Including Marine Protected Areas [MPAS])

24. CCAMLR has endorsed the 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).

25. Following its *Workshop on Marine Protected Areas* in August 2006, CCAMLR has recognized the need for extensive dialogue with key elements of the Treaty System (CEP and the ATCM) as well as SCAR, SCOR and other inter-governmental and non-governmental organisations. In that regard:

    - A CCAMLR Bioregionalisation Workshop was held in Belgium in August 2007 to develop a representative network of MPAs;
    - The CEP Chair actively cooperated with CCAMLR in preparing for this Workshop, and
    - Various examples have illustrated the development, designation and management of local MPAs within the CCAMLR Area, particularly in respect of MPAs proclaimed by Australia, France and South Africa.

26. The Workshop's outcomes require further work by CCAMLR's Working Group on Ecosystem Monitoring and Management (WG-EMM). Such work includes:

    - Primary regionalisation of the pelagic environment can be regarded as useful for application by CCAMLR and the CEP;

- Initial regionalisation for the benthic environment should be reviewed and optimized for use by CCAMLR and the CEP;
- Future refinement of the benthic bioregionalisation is possible in the future as methods improve and further data are acquired and analyzed;
- Additional finer-scale bioregionalisation work can be undertaken in a number of areas using existing data;
- Future work could include efforts to delineate fine-scale provinces to address fine-scale regionalisation, including use of statistical methods and other potential data sources;
- Inclusion of process and species information should be considered further in the context of systematic conservation planning, and in developing a spatial decision-making framework, and
- A procedure should be established to identify marine areas for protection and to further CCAMLR conservation objectives.

CCAMLR Performance Review

27. Since 1996, CCAMLR has had a standing item on its agenda to deal with implementing the Convention's objectives. A major development in this regard was a symposium, co-sponsored by Australia and Chile, in 2005 to discuss CCAMLR's future. A number of general and specific initiatives were proposed with a view to improving CCAMLR's effectiveness and operational efficiency.
28. Consequently, and following developments at COFI-27 and in UNGA Resolution 61/105, CCAMLR-XXVI agreed to undertake a review of the institution's performance in 2008. The terms of reference, workplan and performance criteria to be examined by this review are attached at Appendix 2.

Co-operation with Non-contracting Parties

29. In implementing its Catch Documentation Scheme (CDS), CCAMLR has done much to work with various Non-Contracting Parties (NCPs) considered to have an interest in CCAMLR's work or in the resources that it manages. Such encouragement has included inviting NCPs to attend and participate in CCAMLR meetings. CCAMLR is also actively engaged in improving dialogue with NCPs address their potential involvement in IUU fishing undermining its CMs. This achieved through *CCAMLR's Policy to Enhance Cooperation between CCAMLR and Non-Contracting Parties* aimed at improving the effectiveness of CCAMLR-NCP cooperation, including a cooperation enhancement program.

Co-operation with Other International Organizations

30. CCAMLR continues to urge its Members to accept and ratify a number of relevant international agreements. It also co-operates closely with various RFMOs (CCSBT, IATTC, ICCAT, IOTC, IWC, NAFO, NEAFC, SEAFO and WCPFC) to further its work and co-ordinate its conservation efforts (particularly in relation to combating both IUU fishing and seabird by-catch during longlining). It also encourages all its Members to cooperate in developing a comprehensive and integrated international approach to such problems.
31. FAO is one of several international organizations explicitly referred to in CAMLR Convention Article XXIII as an organization with which CCAMLR should cooperate. Both the Commission and Scientific Committee 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.

32. The Twenty-seventh Meeting of COFI (COFI-27) took place in March 2007. It addressed a number of topics of interest to CCAMLR, particularly in terms of growing international interest for a review of *Regional Fisheries Management Organisations* (RFMOs) (see paragraph 28 above). At this stage, CCAMLR stands alone as the leading example of global best practice in addressing marine fisheries conservation issues.

Co-operation with the ATCM

33. Once again, CCAMLR-XXVI expressed satisfaction with the growing co-operation between CCAMLR and the ATCM/CEP

34. In particular, it noted a number of points from ATCM-XXX as being directly relevant to its work. These included:

- ATCM Resolution 2 (2007) on southern giant petrel conservation and the need for CCAMLR Members to provide relevant data to SCAR;
- ATCM Resolution 3 (2007) on long-term monitoring and sustained environmental observation in Antarctica;
- CEP support for Conservation Measure 26-01 (*General Environmental Protection During Fishing*);
- A CCAMLR information session for CEP-11 to report on CCAMLR's experience in setting-up and implementing its ecosystem monitoring programme (CEMP);
- ATCM deliberations on IUU fishing in the CCAMLR Area;
- Supporting a proposal that the CCAMLR Science Officer periodically accompany the Chair of the CCAMLR Scientific Committee to the CEP in order to improve institutional continuity between the CEP and CCAMLR;
- Possible inclusion of "climate change" as an agenda item, or subitem, on the Commission and Scientific Committee agendas in a manner similar to that of the CEP, and
- Presence of the Antarctic Treaty Secretariat Executive Secretary at CCAMLR-XXVI.

35. Following the points highlighted in paragraph 34 above, it should be noted that the possibility of a joint CEP-CCAMLR Scientific Committee meeting in 2009 was also mooted at CCAMLR-XXVI.

36. CCAMLR-XXVI saw that the award of the prestigious 2007 WWF Duke of Edinburgh Conservation Medal to the CCAMLR Executive Secretary at Buckingham Palace on 17 October 2007 as recognising both CCAMLR's many notable achievements and the Executive Secretary's long-standing involvement with the Commission's work. For such an acknowledgement to have been made during the IPY was doubly meaningful.

Appendix 1

CCAMLR-XXVI References for Topics & Decisions

The CCAMLR-XXVI report is downloadable from:

http://www.ccamlr.org/pu/e/e_pubs/cr/07/toc.htm

Topics & Decisions		CCAMLR-XXVI Paragraphs
1. General Fishery Matters		
1.1	Fisheries Catches in 2006/07	4.32, 4.51-4.52
1.3	Fishery Regulation Measures 2007/08	13.3, 13.26, 13.47, 13.48, 13.51, 13.52-13.71, 13.72-13.73, 13.74-13.75, 13.76-13.77, 13.78
1.3	Bottom Fishing	13.40-13.46, 13.42
1.4	Mitigation Measures	13.27
1.5	Scheme International Scientific Observation	11.1-11.10
2. IUU fishing in Convention Area		
2.1	Current Levels	10.1-10.50
2.2	Development IUU Estimation Methods	10.51
2.3	IUU Vessel Lists	10.52-10.75
3. General Compliance		
3.1	Compliance with Conservation Measures	8.3-8.70
3.2	New Compliance-Related Measures (Trade)	13.28-13.39
3.3	Development Compliance Evaluation Procedure	8.18-8.19
4. Ecosystem Approach to Fisheries Management		
4.1	Krill Ecosystem-Based Feedback Management	4.16-4.28, 4.29-4.31
4.2	Incidental Mortality Seabirds/Marine Mammals	6.5-6.17
4.3	Marine Debris Impact on Biota	6.1-6.4
4.4	Joint CCAMLR-IWC Workshop	4.92
4.5	IPY Activities	20.1-20.10
5. Marine Protected Areas		
5.1	CEMP Site Protection	7.1-7.2
5.2	Bioregionalisation	7.3-7.17, 7.18-7.19
6. Cooperation Antarctic Treaty System		
6.1	ATCM	15.1-15.15, 15.41-15.49
6.2	Climate Change & CCAMLR	15.16-15.36
6.3	CEP	15.7, 15.10, 15.12-15.14
6.4	SCAR	15.37-15.40
7. Cooperation Other International Organisations		
7.1	UN/FAO	16.17
7.2	ACAP	16.1
7.3	NGOs	16.5-16.9, 16.10
7.4	General	16.11-16.39
8. CCAMLR Performance Review		
7.1	General	17.2-17.20
7.2	Terms of Reference & Workplan	Annex 7

Appendix 2

CCAMLR Decision to Undertake a Performance Review of the Organisation

The Commission for the Conservation of the Antarctic Living Marine Resources (CCAMLR),

Recalling Article II of the CAMLR Convention which states that the objective of the Convention is the conservation of the Antarctic marine living resources and that, for the purpose of the Convention, the term 'conservation' includes rational use,

Also recalling Article V of the CAMLR Convention, which highlights the special obligations and responsibilities of Antarctic Treaty Consultative Parties for the protection and preservation of the environment of the Antarctic Treaty Area,

Further recalling that any harvesting and associated activities in the CAMLR Convention Area are to be conducted in accordance with the provisions of the Convention and with principles of conservation as set forth in the Convention,

Noting the discussions held at the CCAMLR Symposium in Valdivia, Chile, from 5 to 8 April 2005,

Considering the recent calls of the international community to organisations with management and conservation responsibilities with respect to fisheries and marine living resources to strengthen their efforts to attain their objectives and to implement adequate approaches to fisheries management,

Further considering the 2006 UN General Assembly Resolution 61/105 calling for Regional Fisheries Management Organisations and arrangements with management and conservation responsibilities on fisheries and marine living resources, to undertake urgently a Performance Review,

Deciding that it would be appropriate to undertake for itself such a Performance Review,

Decides, in accordance with Article IX, paragraph 1:

1. That a Performance Review of CCAMLR shall be conducted during the 2007/08 intersessional period and a final report shall be submitted to the Contracting Parties at the 2008 annual meeting.
2. The Review shall be carried out on the basis of the attached list of criteria.

   The Review Panel may consider adding criteria, if needed. The Panel may take into consideration the discussions held at the Valdivia Symposium referred to above.
3. The Review Panel will be composed of nine persons, as follows:

   (i) four internationally recognised persons who have experience in the CCAMLR context and a thorough understanding of the CAMLR Convention, and who shall reflect the composition of the Members of CCAMLR;

   (ii) the Chair of the Committee for Environmental Protection (CEP);

   (iii) an expert from a CCAMLR non-governmental organisation (NGO) observer;

   (iv) three external experts, among whom there is experience in relevant areas of science, fisheries management and legal matters (including compliance and enforcement issues).

   The Review Panel shall be appointed by the Commission.

The external experts shall be internationally recognised in their field, but shall have no involvement or direct experience with CCAMLR.

The Panel members shall be independent and participate in their personal capacity.

The Review Panel Chair shall be a Panel member selected by the Panel.

4. CCAMLR Members may provide in writing two names, each accompanied by a one-paragraph curriculum vitae (CV), for each category ((i) internal members, (ii) external expert in science, (iii) external expert in fisheries management, (iv) external expert in legal matters related to international law) to the Chair of the Commission, through the Secretariat, by 31 December 2007.

   The Chair of the Commission shall provide to Members, by 15 January 2008, four lists, containing the names proposed by the Members for the appointment of:

   (i) the four persons who have experience in the CCAMLR context; and

   (ii) the three external experts to the Review Panel.

   The Members shall immediately acknowledge receipt of the communication. Members may respond in writing to the Chair of the Commission within 30 days indicating preferences for two persons from each list.

   The Chair of the Commission, at the end of the 30-day period shall, through the Secretariat, inform Members of the names of the persons for whom preference has been expressed through the selection process described above.

   Once these persons have been identified, the Secretariat shall write to each person selected by the Members for appointment to the Review Panel, indicating CCAMLR's desire to appoint him or her and seeking their positive response.

5. The NGO expert will be recommended to the Commission by the NGOs accredited as official observers to CCAMLR by 31 December 2007. The name of the NGO expert selected will be communicated to the Chair of the Commission through the Secretariat.

   The Chair of the Commission will provide the name of the NGO expert to the Members of the Commission together with the four lists of candidates mentioned above.

6. The Review Panel will meet at the CCAMLR Headquarters during May/June 2008.

7. The CCAMLR Secretariat shall provide logistical support and information to the Review Panel and shall not form part of this Panel.

8. The Review Panel shall decide by consensus. In the event consensus cannot be reached, individual members of the Panel may include their views in the Panel's report.

9. Travel and accommodation costs for the participants in the Review Panel meeting shall be borne by the CCAMLR budget, except for the NGO representative.

10. The report and the conclusions (including recommendations) of the Performance Review shall be communicated by the Panel Chair to CCAMLR Members, the Chair of the Commission and the Executive Secretary 45 days in advance of the 2008 annual meeting at which they will be considered firstly by SCIC, SCAF and the Scientific Committee and then by the Commission for discussion and action, if needed.

    SCIC, SCAF and the Scientific Committee shall report to the Commission the results of their discussions on this issue.

    The Report and the conclusions shall also be distributed to Contracting Parties and observers at the 2008 annual meeting, and shall be placed on the CCAMLR website.

11. Following the first review, subsequent reviews may be conducted if deemed appropriate by the Commission.

Criteria for Reviewing the Performance of CCAMLR

Area	General Criteria	Detailed Criteria
1. *Role of CCAMLR within the Antarctic Treaty System*	Relationship with the Antarctic Treaty System	• Extent to which CCAMLR effectively implements its obligations under Articles III and V of the Convention.
	Environmental protection	• Extent to which CCAMLR has effectively observed measures, resolutions and decisions of the Antarctic Treaty Consultative meetings related to the protection of Antarctic marine living resources.
	Conservation	• Extent to which CCAMLR has taken into account the effects of harvesting, research, conservation and associated activities on the marine ecosystem, the known or potential effects of environmental changes in its management of Antarctic marine living resources, and the risks and effects of the introduction of alien species.
	Protected areas	• Effectiveness of CCAMLR's relationship with the ATCM in considering proposals for ASPAs and ASMAs with marine components and providing advice to the ATCM. • What management and administrative tools are available to build up a system of protected areas. • Extent to which CCAMLR has made progress to respond to the WSSD target to establish a representative network of marine protected areas by 2012.
	Marine pollution	• Effectiveness of CCAMLR to implement measures to provide for protection of the Southern Ocean and Antarctic environment from the impacts of vessels engaged in harvesting, research, conservation and associated activities, including measures relating to marine pollution and vessel safety.
2. *Conservation and management*	Status of living marine resources	• Status of Antarctic marine living resources under the purview of CCAMLR. • Trends in the status of those resources. • Status of species that belong to the same ecosystems as, or are associated with or dependent upon, targeted Antarctic marine living resources. • Trends in the status of those species.
	Ecosystem approach	• Extent to which CCAMLR decisions take account of and incorporate an ecosystem approach to management.
	Data collection and sharing	• Extent to which CCAMLR has agreed formats, specifications and timeframes for data submissions. • Extent to which CCAMLR Members and Contracting Parties, individually or through CCAMLR, collect and share complete and accurate data concerning Antarctic marine living resources and other relevant data in a timely manner. • Extent to which fishing and research data and fishing vessel and research vessel data are gathered by CCAMLR and shared among Members. • Extent to which CCAMLR is addressing any gaps in the collection and sharing of data as required.
	Quality and provision of scientific advice	• Extent to which CCAMLR receives and acts on the basis of the best scientific advice relevant to the Antarctic marine living resources under its purview, as well as to the effects of harvesting, research, conservation and associated activities, on the marine ecosystem.

Area	General Criteria	Detailed Criteria
2. *Conservation and management* (continued)	Adoption of conservation and management measures	• Extent to which CCAMLR has adopted conservation and management measures for Antarctic marine living resources that ensure the conservation, including rational use, of those resources and are based on the best scientific evidence available. • Extent to which CCAMLR has applied a precautionary approach as set forth in the Code of Conduct for Responsible Fisheries Article 7.5, including the application of precautionary reference points. • Extent to which CCAMLR is applying uniform principles and procedures to all species in the Antarctic ecosystem. • Extent to which CCAMLR has moved toward the adoption of conservation and management measures for previously unregulated fisheries, including new and exploratory fisheries. • Extent to which CCAMLR has taken due account of the need to conserve marine biological diversity and minimise harmful impacts of harvesting, research, conservation and associated activities on marine living resources and marine ecosystems. • Extent to which CCAMLR has adopted measures to minimise pollution, waste, discards, catch by lost or abandoned gear, catch of non-target Antarctic marine living resources, and impacts on associated or dependent species through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.
	Capacity management	• Extent to which CCAMLR has identified fishing capacity levels commensurate with the conservation, including rational use, of Antarctic marine living resources. • Extent to which CCAMLR has taken actions to prevent or eliminate excess fishing capacity and effort. • Extent to which CCAMLR monitors the levels of fishing effort, including taking into account annual notifications for participation by Contracting Parties.
3. *Compliance and enforcement*	Flag State duties	• Extent to which CCAMLR Members are fulfilling their duties as Flag States under the treaty establishing CCAMLR, pursuant to measures adopted by CCAMLR, and under other international instruments, including, *inter alia*, the 1982 Law of the Sea Convention and the 1993 FAO Compliance Agreement, as applicable.
	Port State measures	• Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Port States, as reflected in the Code of Conduct for Responsible Fisheries Article 8.3. • Extent to which these measures are effectively implemented.
	Monitoring, control and surveillance (MCS)	• Extent to which CCAMLR has adopted integrated MCS measures (e.g. required use of VMS, observers, catch documentation and trade tracking schemes, restrictions on transhipment, boarding and inspection schemes). • Extent to which these measures are effectively implemented.
	Follow-up on infringements	• Extent to which CCAMLR, its Members and Contracting Parties follow up on infringements to management measures.
	Cooperative mechanisms to detect and deter non-compliance	• Extent to which CCAMLR has established adequate cooperative mechanisms to both monitor compliance and detect and deter non-compliance (e.g. compliance committees, vessel lists, sharing of information about non-compliance). • Extent to which these mechanisms are being effectively utilised.
	Market-related measures	• Extent to which CCAMLR has adopted measures relating to the exercise of the rights and duties of its Members and Contracting Parties as Market States for Antarctic marine living resources.

Area	General Criteria	Detailed Criteria
4. *Decision-making and dispute settlement*	Decision-making	• Efficiency of Commission meetings and working groups in addressing critical issues in a timely and effective manner. • Extent to which CCAMLR has transparent and consistent decision-making procedures that facilitate the adoption of conservation measures in a timely and effective manner. • Existence of an informal mechanism of cooperation between Members based on reciprocities.
	Dispute settlement	• Extent to which CCAMLR has established adequate mechanisms for resolving disputes.
5. *International cooperation*	Transparency	• Extent to which CCAMLR is operating in a transparent manner, taking into account the Code of Conduct for Responsible Fisheries Article 7.1.9. • Extent to which CCAMLR decisions, meeting reports, scientific advice upon which decisions are made, and other relevant materials are made publicly available in a timely fashion.
	Relationship to non-Contracting Parties cooperating with various CCAMLR measures	• Extent to which CCAMLR facilitates cooperation between Members and non-Members, including through encouraging non-Contracting Parties to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures.
	Relationship to non-cooperating non-Contracting Parties	• Extent to which CCAMLR provides for action in accordance with international law against non-Contracting Parties undermining the objective of the Convention, as well as measures to deter such activities, as well as encouraging them to become Contracting Parties and Members of the Commission or to implement voluntarily CCAMLR conservation measures.
	Cooperation with other international organisations	• Extent to which CCAMLR cooperates with other international organisations.
	Special requirements of Developing States	• Extent to which CCAMLR recognises the special needs of Developing States and pursues forms of cooperation with Developing States, taking into account the Code of Conduct for Responsible Fisheries Article 5. • Extent to which CCAMLR Members, individually or through the Commission, provide relevant assistance to Developing States.
6. *Financial and administrative issues*	Availability of resources for activities	• Extent to which financial and other resources are made available to achieve the aims of CCAMLR and to implement CCAMLR's decisions.
	Efficiency and cost-effectiveness	• Extent to which CCAMLR is efficiently and effectively managing its human and financial resources, including those of the Secretariat. • Extent to which the schedule and organisation of the meetings could be improved.

COMNAP Report to ATCM XXXI

COMNAP activities relevant to current ATS work and concerns

Section	*Topic*	*Agenda Items*	
		ATCM XXXI	*CEP XI*
3.1	Towards better Search and Rescue coordination in the Antarctic	9	11
3.2	COMNAP Ship Position Reporting System	9, 16	11
3.3	Automatic Identification System (AIS)	9	11
3.4	Antarctic Flight Information Manual	9, 14, 16	11
3.5	COMNAP Fuel Manual	9, 14	11, 13
3.6	Training material – online library	14, 16	
3.7	International collaboration in Antarctica	13, 14	
3.8	Procedures concerning introduction of non-native species	14	8a
3.9	Environmental Monitoring Activities	14, 16	9
3.10	Information Exchange	9, 14, 16	
3.11	Mapping products	9, 14, 16	
3.12	Collaboration with the Antarctic Treaty Secretariat	16	
3.13	Operational publications	9, 14, 16	
3.14	General information publications	16	
3.15	Facilitating and promoting the distribution and use of publications	16	
3.16	Support of the International Polar Year (IPY) 2007-2008	10	5

1. Introduction

(1) It is traditional in the Antarctic to work together and help each other. In keeping with this tradition, the Council of Managers of National Antarctic Programs (COMNAP) brings together the Managers of National Antarctic Programs (MNAPs) and other designated members of their Programs.

(2) A National Antarctic Program is defined as the entity with national responsibility for managing, coordinating and supporting, and more generally making possible, scientific research in the Antarctic Treaty Area on behalf of its government, and in the spirit of the Antarctic Treaty.

(3) COMNAP provides a forum for development of practical and technical solutions for dissemination among National Antarctic Programs. Effective and efficient support and management of science, safety, increased international collaboration, environmental protection and effective Antarctic governance are among our main concerns.

(4) While supporting its members is its primary role, COMNAP also takes very seriously the privilege and responsibility of being a formally recognised member of the Antarctic Treaty System (ATS). It remains committed to contributing actively to the work of the ATS through provision of a range of practical, technical and non-political advice developed using members' pool of expertise.

(5) This COMNAP Annual Report to the ATCM and the CEP provides an overview of COMNAP's current activities, with an added focus on their relevance to the ATS. Particular topics may also be complemented by a formal, standalone paper.

2. Predominant focus

2.1 Objectives

(6) In support of its mission, and the missions of its members – supporting and managing science in the Antarctic - COMNAP's current predominant focus is on four often inter-related objectives:

- Safety
- Efficiency
- International collaboration
- Environmental management and protection

2.2 Support Systems

(7) A significant part of COMNAP's work includes the development and maintenance of resources and communication infrastructure to support and sustain progress towards these objectives. This includes in particular the following support systems:

- Manuals, guidelines and other reference documents
- Communication systems to support the various COMNAP work groups
- A web- and email-based "COMNAP Information Exchange" platform to collect, manipulate and record a range of practical, dynamic information and facilitate discovery and exchange of this information

3. COMNAP Activities relevant to current Antarctic Treaty System work and concerns

(8) This section provides brief status reports on a selection of COMNAP activities relevant to current ATS work and concerns. Whenever possible, references have been included to relevant documents, agenda items or Antarctic Treaty Resolutions, Decisions or Measures.

(9) Naturally, each of these activities often contributes to progress towards several of these objectives concurrently and uses a combination of support systems.

3.1 Towards better Search and Rescue (SAR) coordination in the Antarctic

(10) The representatives of the very first ATCM in 1961 in Recommendation I-X *reaffirm[ed] the traditional Antarctic Principle that expeditions render all assistance feasible in the event of an emergency request for help [...]*. Since then, safety has remained a very important focus and priority for the ATCM, National Antarctic Programs and other operators, and there has been a reasonably low occurrence of emergencies and major accidents.

(11) The current increase in activity and traffic in the Antarctic, in particular maritime traffic in the Antarctic peninsula region, is potentially pushing existing systems to the limit and is cause for concern.

(12) A total of 7 Rescue Coordination Centres (RCCs) have responsibilities for the coordination of maritime and aeronautical Search and Rescue in the Antarctic under a range of international agreements. These 7 RCCs are based in 5 countries that are all Antarctic Treaty Consultative Parties and all have a National Antarctic Program active in the relevant area - Argentina, Australia, Chile, New Zealand and South Africa.

(13) With the increase in activity and traffic, a need has emerged for more exchange of information and more organised, coordinated and uniform channels of communications between the RCCs and Antarctic operators.

(14) COMNAP and the RCCs are working together to review the situation and work towards better search and rescue coordination in the Antarctic region.

(15) COMNAP has prepared in collaboration with the RCCs Information Paper ATCM XXXI-IP 99 *Search and Rescue in the Antarctic Region*. The paper answers common questions about arrangements in place, provides practical examples illustrating how current systems work, outlines the work done to continually improve systems and procedures, and outlines a possible vision for the future.

(16) An operational workshop will be held in Valparaiso, Chile, 12-14 August 2008, hosted by the Chilean navy in collaboration with COMNAP and titled *towards better search and rescue coordination in the Antarctic region*. It will bring together RCC authorities and National Programs from Argentina, Australia, Chile, New Zealand and South Africa and other stakeholders, including representatives from the International Maritime Organisation (IMO) and the International Civil Aviation Organisation (ICAO). A draft agenda is provided in IP 99 at Appendix B.

(17) The intention is to continue working towards a uniform, coordinated approach to Search and Rescue coordination and response throughout the Antarctic region, founded on established international agreements and existing infrastructure.

(18) The workshop will focus on technical issues. While it will try to identify any regulatory or legal barriers to implementing desirable technical solutions, it will not take any position other than operational on possible solutions to their barriers.

(19) Many possible improvements may require, or be facilitated by, guidance and support from the ATCM. This may in particular include any dealings with the IMO regarding access to Long Range Identification and Tracking information from the Antarctic area.

(20) Conclusions and recommendations from the workshop will be forwarded to the ATCM and other relevant organisations for consideration.

For further information: ATCMXXXI-IP 99 *Search and Rescue in the Antarctic.*

3.2 COMNAP Ship Position Reporting System

(21) The COMNAP Ship Position Reporting System (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.

(22) 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.

(23) The SPRS has been the subject of a significant overhaul over 2007 and 2008. It now has the capability to collect a wider variety of ship and voyage information. Latest positions and other practical information of all participating vessels is returned to each vessel, and is pushed every 24h to the Antarctic RCCs. It is anticipated that the upcoming workshop *towards better search and rescue coordination in the Antarctic region*, will provide useful input in the future evolution of the SPRS with respect to its contribution to safety.

(24) In parallel, development will continue with respect to the primary purpose of the SPRS – facilitating collaboration between National Programs. It will be extended into a generalised Voyage Information System that will cover all kinds of voyages – sea but also air and land voyages - and include advance information on future schedules. It also will be dynamically linked to information on the capability of relevant vessels, aircraft or tractor trains, include a mapping interface and the capability to create reports. It will also be able to exchange data as appropriate with the Antarctic Treaty Secretariat's Electronic Information Exchange System (EIES).

3.3 Automatic Identification System (AIS)

(25) The Automatic Identification System (AIS) is a standard, international system developed for short range automatic identification of vessels. Information transmitted includes ship name, type, course, speed and other relevant safety information.

(26) AIS equipment is very portable, very reasonably priced, and does not have to be limited to ships. It can be easily fitted to various types of transport, from small rubber boats to tracked vehicles to quad bikes, and can also be fitted to mobile camps – tents or shelters. It has potential applications in Antarctica, in particular in areas where several nations operate, for increased safety.

(27) Uruguay reported at ATCM XXIX in Working Paper ATCMXXIX-WP 6 on initial trials by the Uruguayan Antarctic Program of the use of AIS to track crafts and vehicles around its station. COMNAP agreed to work with Uruguay to build upon this work.

(28) The COMNAP Safety Working Group has been working with Uruguay to analyse the potential, advantages and disadvantages of the system and discuss potential applications.

(29) A Canadian company is developing and testing systems to collect AIS information by satellite. This would free AIS from its current short range limitations and give AIS new potential applications for increased safety in the Antarctic.

(30) Further discussions on the potential of AIS are on the agenda of the upcoming workshop *towards better search and rescue coordination in the Antarctic region.*

3.4 Antarctic Flight Information Manual

(31) 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 ATCM XV (1989) in Recommendation XV-20 "Air safety in Antarctica".

(32) Recommendation XV-20 comprised a number of specific recommendations including:

> *For the purpose of improving air safety in Antarctica, national Antarctic programmes operating aircraft in Antarctica and their aircrews should be provided with a continuously updated compendium ('Handbook') describing ground facilities, aircraft and aircraft operating procedures (including helicopters) and associated communications facilities operated by each national Antarctic programme (out of the use of which questions of liability will not arise) and, therefore, they should:*
>
> *(a) prepare such a Handbook as a matter of urgency;*
>
> *(b) facilitate the preparation of such a Handbook by their national Antarctic programme operators by collective action through the medium of the Council of Managers of National Antarctic Programmes (COMNAP) federated to SCAR;*
>
> *(c) adopt a loose-leaf format in which information provided by each national operator is kept separate (unless facilities are jointly operated) so as to facilitate updating of information;*
>
> *(d) request their national Antarctic operators to provide information for the purpose of compiling the Handbook in accordance with Annex 2 to this Recommendation.*

(33) Annex 2 to ATCM Recommendation XV-20 includes one page that briefly outlines the content of this "Antarctic Aeronautical Information Handbook", noting that information should be provided using Appendix I to Annex 15 to the Convention on International Civil Aviation as a guideline.

(34) A review of the AFIM is under way. It includes a review of the structure of its information, of the management of its updating process and of its usage by managers and pilots. Implementation of an electronic version of the AFIM is under consideration. This would complement and support, but not replace, the current printed version.

(35) It can be noted that a range of information maintained in the AFIM has overlaps with some of the permanent information that Treaty Parties are required to maintain under Resolution 6 (2001). A management of the AFIM through its electronic version could allow exchange of this information (import/export) with the Antarctic Treaty's Electronic Information Exchange System (EIES) developed by the Antarctic Treaty Secretariat under instructions from the ATCM. This could significantly reduce duplication of efforts and mismatch of data between parallel systems.

3.5 COMNAP Fuel Manual

(36) COMNAP developed between 1990 and 1993 a number of guidelines and recommendations related to fuel handling and storage.

(37) These documents reflected best practice and were promptly circulated to, and used by, National Antarctic Programs and were endorsed by the ATCM. They underwent several routine reviews between 1998 and 2005 with no revision deemed necessary.

(38) A more in-depth review was conducted between the end of 2005 and 2007. The text of the guidelines and the practices it described were found to be essentially still adequate. It was agreed that here was a need to rejuvenate the guidelines with graphics, actual examples, associated brochures and posters and give them a higher profile. This would make the guidelines more accessible and hence more effective.

(39) It was decided to bring all guidelines and recommendations and associated documents together into a single "Fuel Manual" document. It provides a simple, clear access point to all fuel related material and additional sections can be inserted as required - in particular new sections containing supporting information or links to such information, checklists or pro-formas for internal auditing of installations and procedures.

(40) The new "COMNAP Fuel Manual" is presented in ATCMXXI-IP 91 *The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica*.

(41) The format and presentation of this Fuel Manual will also be progressively rejuvenated to facilitate its readability. This will include inserting diagrams, photos or cartoons wherever possible and inserting, linking to or attaching actual examples of good practice.

(42) COMNAP will continue to develop and update the Fuel Manual and to promote and facilitate its use by all operators. The original objectives remain as current and important as they were in 1990:

- preventing oil spills;
- responding to a spill should one occur; and
- sharing information about spills to help determine if, and where, there was a need to modify or improve fuel handling practices.

For further information: ATCMXXXI-IP 91 *The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica*.

3.6 Training material – online library

(43) The COMNAP Training Officers Network (TRAINET) is the COMNAP work group dealing with the training of National Program staff for deployment to Antarctica.

(44) TRAINET has developed an online library of training related material used by member Programs - this covers a range of material from course syllabus, standard operating procedures and training regulations and policies, in various languages.

(45) This online library will be commissioned at the upcoming COMNAP Annual General Meeting in St Petersburg, Russia.

(46) It is anticipated that the availability to all National Programs of this resource will considerably facilitate and increase the transfer of experience, expertise and best practice between Programs. It will support the harmonisation or compatibility of procedures and standards between Programs, and facilitate international collaboration and exchange of personnel.

(47) Development of a glossary of terms commonly used in the Antarctic – including, but not only, for the training of Antarctic personnel – is also under way. It will facilitate understanding, use and reuse of training material and facilitate participation of personnel in joint training initiatives.

3.7 International Collaboration in Antarctica

(48) International collaboration is widespread and a normal part of National Programs' activities. COMNAP remains committed to facilitating and promoting collaboration between National Programs and joint activities when possible. This is one of COMNAP's main missions.

(49) At ATCM XXIX (2006), *attention was drawn to the reiteration of CEP's concern about the potential environmental consequences of an excessive concentration of stations in Antarctica. It was noted that these concerns can be addressed, in part, by increased cooperation in Antarctica and that some parties are making efforts to share their facilities and encourage wider participation in their research programmes*. Refer ATCM XXIX final report, paragraph 73.

(50) To provide a broader perspective of such collaboration, COMNAP conducted a survey in 2007 to assess the extent of international scientific and logistic collaboration amongst National Antarctic Programs at a time when a number of nations are either building new research stations or replacing old ones.

(51) Results of the survey are presented to the ATCM in ATCMXXXI-IP 92 I *International Scientific and Logistic Collaboration in Antarctica*. It confirmed a high and increasing level of international collaboration. For example:

- 96% of National Antarctic Programs host scientists from other nations (always or sometimes);
- 60% expect the number of scientists hosted from other nations to increase
- 96% share ships or aircraft with other nations
- 78% provide logistic facilities for other nations
- 35% operate or manage logistic facilities in 'partnership' with other nations – this can for example include joint operation of a station or joint management of support facilities for their stations.

(52) The high and increasing level of scientific and logistic collaboration amongst National Antarctic Programs is in the finest spirit of the Antarctic Treaty. This excellent situation has been facilitated by COMNAP through the exchange of practical, operational information to help improve the way all National Antarctic Programs can fulfil their various missions, together or independently. That includes mutual support in the design, ongoing improvement and operation of Antarctic facilities and transport infrastructure.

For further information: ATCMXXXI-IP 92 *International Scientific and Logistic Collaboration in Antarctica*.

3.8 Procedures concerning introduction of non-native species

(53) The threat of introduction of non-native species into the Antarctic has emerged recently in the discussions of the CEP, in particular in response to new information on climate change, and has received a high priority in its 5-year work plan.

(54) Although many National Programs did have a range of relevant procedures in place, a more global view and analysis of what was in place around the continent was considered necessary. COMNAP undertook a survey of its members on existing procedures concerning the minimisation of risk of introduction of non native species. Information was sought in three main areas:

- awareness programs;
- operational procedures; and
- monitoring/surveillance programs.

(55) Responses were received from 15 Programs that together run almost 70% of all Antarctic stations, and are deemed to provide a realistic picture of the current efforts made by the Antarctic Parties as a whole to minimise introduction of alien species into the continent.

(56) Results of the survey are presented to the CEP in ATCMXXXI-IP 98 *Survey on existing procedures concerning introduction of non native species in Antarctica.*

(57) The survey showed that awareness programs are well covered and monitoring/surveillance programs are also reasonably well covered, while more could be done on operational procedures.

(58) Lessons learned from this survey will be useful to National Antarctic Programs to continue improve their procedures. It is hoped this work can also be useful to future CEP discussions on this issue.

For further information: ATCMXXXI-IP 98 *Survey on existing procedures concerning introduction of non native species in Antarctica.*

3.9 Environmental Monitoring Activities

(59) The need to conduct environmental monitoring was clearly expressed in Article 3, 2.e) of the Protocol on Environmental Protection to the Antarctic Treaty: *regular and effective monitoring shall take place to facilitate early detection of the possible unforeseen effects of activities carried on both within and outside the Antarctic Treaty area on the Antarctic environment and dependent and associated ecosystems.*

(60) At CEP X (New Delhi, 2007), the Meeting noted that the issue of environmental monitoring had been the subject of much attention by the CEP over several meetings and Intersessional Contact Groups, though with limited progress.

(61) At the same Meeting, some Members emphasised the importance of synthesising the significant amount of information that currently existed on the issue in an Antarctic context, including CEP deliberations and work undertaken by COMNAP, including for example COMNAPs' own survey of monitoring activity and its *Practical Guidelines for Developing and Designing Environmental Monitoring Programmes in Antarctica* - the use of which was recommended by ATCM XXVIII through Resolution 2 (2005).

(62) Although endorsed only on a provisional basis, the CEP five-year work plan has identified Monitoring and State of the Environment Reporting as an issue with Medium to High priority. The CEP is therefore expected to work in the following years on the identification of key indicators of human impacts.

(63) In parallel, ATCM Resolution 3 (2007) *Long Term Monitoring* also underlines the importance of monitoring activities. One of its recommendations is that Antarctic Treaty Parties *urge national Antarctic programmes 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.*

(64) COMNAP has maintained for several years outline information on Monitoring Activities undertaken by its members. Snapshots of this information have been compiled and published a number of times as *Summary of Environmental Monitoring in Antarctica.*

(65) COMNAP agreed at its 2007 annual meeting (Washington, July 2007) to task the COMNAP Antarctic Environmental Officers Network (AEON) to:

- provide information on basic operational monitoring parameters currently measured in Antarctic stations, as part of environmental monitoring programs in place – recognising that COMNAP had already invested a lot in this domain; and
- reshape COMNAP' *Summary of Environmental Monitoring in Antarctica*, in order to make it more easily accessible for likely users.

(66) A reshaped system of exchange of information on monitoring activities has been designed and will be submitted to COMNAP at its upcoming annual meeting.

(67) It would collect additional information on monitoring activities in a simple and structured way that takes into account the latest categorising and priorities agreed by the CEP. It would allow easy aggregation and categorisation of information, for example by region, by type of monitoring (Operational or State of the Environment), by indicator monitored or by parameter measured.

(68) The new system should be implemented by the end of 2008 and reports on information collected and maintained in the system should be available for presentation at CEP XII in 2009.

3.10 Information Exchange

(69) The re-development of COMNAP's electronic information exchange system continues and will be reviewed by COMNAP at its upcoming annual meeting.

(70) It includes 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. It will also later include voyage schedule and tracking, incident reports and lessons learned, etc.

(71) Importantly, it provides a framework to collect, manage, manipulate and explore this information. The primary objective 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.

(72) An important requirement and characteristics of the COMNAP Information Exchange system is its capability to exchange information with other systems as appropriate. In particular it will allow export to the Antarctic Treaty's Electronic Information Exchange System (EIES) of those portions of information included in Treaty information exchange requirements. Part of this functionality is already working in demonstration mode for review by COMNAP members and Treaty parties.

(73) The objective is that any information entered by a National Program into the COMNAP Information Exchange system will never need to be manually re-entered in the Antarctic Treaty systems or in any other system used by that National Program.

3.11 Mapping Products

(74) COMNAP produced in 2006 a large format map of Antarctica showing the main facilities operated by National Antarctic Programs. Work is under way on a simplified, semi-automated process to update the map at regular intervals (for example annually) by loading information maintained by each program on the new COMNAP Information Exchange System. The information is being exported out of the Information Exchange System in a well defined and extensible format that is also compatible with Google Earth.

(75) The information exported in this standard format will not be limited to basic information about facilities. It will also cover a range of information that has a geographic dimension – such as environmental monitoring activities.

(76) Individual National Programs will be able to use this export functionality by themselves, as and when needed, to use for their own maps or applications.

(77) An updated COMNAP map showing the main facilities operated by National Antarctic Programs, as well as a range of important information such as information about Rescue Coordination Centres and Search and Rescue Region boundaries, will be published during 2008. A working draft will be displayed at ATCM XXXI.

3.12 Collaboration with the Antarctic Treaty Secretariat

(78) COMNAP has established through its secretariat a good working relationship with the Antarctic Treaty Secretariat and a number of ad-hoc meetings and informal workshops have been held between members of the two secretariats in the last four years.

(79) COMNAP looks forward to its secretariat maintaining a long-standing, productive relationship with the Treaty Secretariat, when and as appropriate, to better support their respective memberships and the Antarctic Treaty System.

(80) In particular, collaboration on the design of the two organisations' Information Exchange Systems and their capability to exchange information has the potential to significantly reduce duplication and mismatch between the systems, and make a useful contribution to an efficient and productive exchange of information within the Antarctic Treaty System.

3.13 Operational publications

(81) COMNAP publishes a number of operational publications in support of Antarctic operations, in particular in support of safety and best environmental practice. This includes a number of operational guidelines and workshop reports.

(82) COMNAP publishes and regularly updates the *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. A review of the AFIM is under way (see Section 3.4 for more details).

(83) A COMNAP fuel manual has just been published, bringing together a range of existing documents, and will be extended (see Section 3.5 for more details). The creation of other such manuals is under consideration.

3.14 General information publications

(84) COMNAP is also publishing some general interest information about COMNAP's activities and National Programs' installations and logistics. It includes a number of mapping products, in both printed and on-line form, and 'layers' of information for overlaying on maps and satellite imagery (see Section 3.11 for more details). The commissioning of the new COMNAP Information Exchange platform will allow provision of richer and more dynamic information products.

3.15 Facilitating and promoting the distribution and use of publications

(85) COMNAP continues, as reported in previous years, to research and test ways of facilitating and promoting the distribution and use of its publications and information. In particular, it includes considerations of alternative licences such as Creative Commons licences.

(86) With a Creative Commons license, 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. See *http://creativecommons.org/license/* for more details.

3.16 Support of the International Polar Year (IPY) 2007-2008

(87) COMNAP member National Antarctic Programs provide 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 deal with their respective National Program, and National Programs work with each other as appropriate, continue to work well, including for multinational IPY projects.

(88) COMNAP is clearly contributing to that success through the provision of a forum in which National Program managers can coordinate their support of international projects as required.

(89) COMNAP however continues to stand ready to help facilitate support solutions between national operators, when that cannot be achieved through the normal collaboration processes in place.

4. COMNAP general activities and organisation

4.1 COMNAP Chairmanship

(90) Gérard Jugie of the French Antarctic Program ended his three-year term as COMNAP Chair in July 2007, and was succeeded by José Retamales of the Chilean Program.

4.2 COMNAP meetings and events

(91) 'COMNAP XIX', the 2007 Annual General Meeting (AGM), was held from Monday 09 to Friday 13 July 2007 in Washington DC, USA. It was hosted by the COMNAP member for USA, the National Science Foundation's Office of Polar Programs and included:

- one and a half days of plenary sessions;
- two days of parallel meetings of COMNAP's various work groups - committees, working groups, coordinating groups and networks and open sessions focused on specific topics.

(92) Five group officers ended their term at the meeting after several years of valuable service to COMNAP:

- Yeadong Kim of the Korean National Program and Henry Valentine of the South African Program as members of the COMNAP Executive Committee;
- Valery Klokov of the Russian Program as Chair of the COMNAP Air Operations Working Group (AIROPS);
- Claude Bachelard of the French Program as coordinator of the COMNAP Medical Officers Network (MEDINET); and
- Patricio Eberhard of the Chilean Program as coordinator of the COMNAP Training Officers Network (TRAINET).

and were succeeded by:

- Rasik Ravindra of the Indian Program and Lou Sanson of the New Zealand Program, elected on the COMNAP Executive Committee;
- Giuseppe de Rossi of the Italian Program, new Chair of the the COMNAP Air Operations Working Group (AIROPS);

- Iain Grant of the UK Program, new coordinator of the COMNAP Medical Officers Network (MEDINET); and
- Albert Lluberas of the Uruguayan Program, new coordinator of the COMNAP Training Officers Network (TRAINET).

(93) In addition, Kazuyuki Shiraishi of the Japanese Program was elected next Chair of the COMNAP Standing Committee on Antarctic Logistics and Operations (SCALOP) and will succeed to current Chair John Pye of the UK Program this July 2008.

(94) A number of intersessional meetings were held, including:

- a meeting of those COMNAP members attending the 2007 ATCM in Delhi, India, in May 2007; and
- a two-day meeting of the COMNAP Executive Committee in Cambridge, UK, in October 2007 to finalise the conclusions and results of the 2007 Annual General Meeting and the work plan for 2007/2008.

(95) The 2008 AGM, COMNAP XX, will be held from Sunday 29 June to Friday 04 July 2008 in St Petersburg, Russia. The meeting will be hosted by the COMNAP member for Russia, the Arctic and Antarctic Research Institute (AARI). It will include:

- one and a half days of plenary sessions;
- two days of parallel meetings of the various COMNAP work groups;
- a number of special sessions on topical issues;
- a one-day workshop of the COMNAP Energy Management Network (ENMANET); and
- a one-day workshop of the COMNAP Information Officers Network (INFONET).

4.3 COMNAP IT support infrastructure

(96) COMNAP has continued to progress the re-development of its IT support infrastructure, following the principles and directions outlined in COMNAP's reports to the last ATCMs.

(97) These have a strong focus on supporting the internal work of COMNAP, supporting safety and facilitating collaboration between National Antarctic Programs. It also aims at reducing duplication by interfacing as appropriate with the Antarctic Treaty's Electronic Information Exchange System (EIES).

4.4 COMNAP Secretariat operation

(98) 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.

(99) COMNAP is very thankful to the Tasmanian State Government for its continued and increased support which allow its secretariat to operate very efficiently and in a quality, supportive environment.

4.5 Member participation, capacity building and secondments

(100) Starting in Sofia, Bulgaria in July 2005 at COMNAP XVII, COMNAP has rolled out a number of procedures to facilitate member participation in meetings and intersessional group work, especially for members that do not routinely use, as one of their working languages, the language used in COMNAP meetings and proceedings (English). COMNAP cannot properly achieve its goals if a number of members cannot adequately participate to the debates and contribute their valuable skills, experience and views. Significant progress has been made and the successful procedures are being fine-tuned and incorporated in updated COMNAP work processes.

(101) Capacity building between National Programs is already implicit within COMNAP objectives and terms of reference and is embedded in the structure and procedures of the organisation. Increased member participation as described above will also contribute to improve capacity building, as will the new IT support infrastructure.

(102) Another new initiative is the secondment of member Program staff to the COMNAP Secretariat to work on projects beneficial to COMNAP and the National Program community. The focus is on allowing significant progress on specific COMNAP projects while providing beneficial training and capacity building opportunities to member staff. A successful secondment in late 2007 resulted in the development of an online library of training material (see Section 3.6 for more details) - it is anticipated that the availability to all National Programs of this resource will considerably facilitate and increase the transfer of experience, expertise and best practice between Programs.

5. Conclusion

(103) COMNAP remains committed to supporting the Antarctic Treaty System.

(104) 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.

For more information, please visit COMNAP's web site at *www.comnap.aq* or email us at *info@comnap.aq*.

Appendix 1

Main Antarctic facilities operated by the National Antarctic Programs in 2008 in the Antarctic Treaty Area (south of 60 degrees latitude South)

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. These facilities 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 published by COMNAP.
  For more information, contact the COMNAP Secretariat (*www.comnap.aq*)

- **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, contact the Antarctic Treaty Secretariat (*www.ats.aq*)

Details of main Antarctic facilities operated by National Antarctic Programs in 2008 in the Antarctic Treaty Area

Name of Facility	UN Locode	Operated by National Program(s) from	Latitude	Longitude	Altitude above sea level	Airfield (5) Length Longest Runway	Airfield (5) Landing Gear Suitability	First Opened	Facility Type (7)	Current Status (8)	Winter Average Population	Peak Population (9)
Aboa	AQ-ABA	Finland	73°03'S	013°25'W	400 m			1989	Station	Seasonal	n/a	20
Amundsen-Scott	AQ-AMS	USA	89°59.85'S	139°16.37'E	2 830 m	3660 m	ski	1956	Station	Year-round	75	250
Arctowski	AQ-ARC	Poland	62°09.57'S	058°28.25'W	2 m			1977	Station	Year-round	12	40
Artigas	AQ-ART	Uruguay	62°11.07'S	058°54.15'W	17 m			1984	Station	Year-round	9	60
Arturo Parodi		Chile	80°19.10'S	081°18.48'W	880 m	2500 m	wheel & ski		Station	Seasonal	n/a	
Arturo Prat	AQ-APT	Chile	62°30'S	059°41'W	~ 10 m			1947	Station	Year-round	8	15
Asuka		Japan	71°31.30'S	024°08.20'E				1984	Station	Seasonal	n/a	
Belgrano II (1)	AQ-BEL	Argentina	77°52.48'S	034°37.62'W	50 m			1955	Station	Year-round	12	12
Bellingshausen	AQ-BHN	Russia	62°11.78'S	058°57.65'W	16 m			1968	Station	Year-round	25	38
Brown		Argentina	64°53'S	62°53'W	10m			1951	Station	Seasonal	n/a	18
Browning Pass		Italy	74°37.37'S	163°54.82'E	170 m	915 m	ski		Airfield Camp	Seasonal	n/a	
Cámara		Argentina	62°36'S	59°56'W	22m			1953	Station	Seasonal	n/a	36
Carvajal		Chile	67°46'S	68°55'W				1985	Station	Seasonal	n/a	
Casey	AQ-CAS	Australia	66°17.00'S	110°31.18'E	30m	variable	ski	1969	Station	Year-round	20	70
Comandante Ferraz	AQ-CFZ	Brazil	62°05.00'S	058°23.47'W	8m			1984	Station	Year-round	12	40
Concordia (2)	AQ-CON	France & Italy	75°06.12'S	123°23.72'E	3220m	1500m	ski	1997	Station	Year-round	13	45
D10 skiway		France	66°40.08'S	139°49.18'E	~ 100 m	variable	ski		Airfield Camp	Seasonal	n/a	
D85 skiway		France	70°25.50'S	134°08.75'E	2850 m	variable	ski		Airfield Camp	Seasonal	n/a	
Dakshin Gangotri		India	70°05'S	12°00'E				1983	Station	Seasonal	n/a	
Dallman		Germany	62°08.40'S	58°24'W				1994	Station	Seasonal	n/a	12
Davis	AQ-DAV	Australia	68°34.63'S	077°58.35'E	15 m	variable	ski	1957	Station	Year-round	22	70
Decepcíon		Argentina	62°59'S	60°42'W	7m			1948	Station	Seasonal	n/a	65
Dome Fuji	AQ-DMF	Japan	77°19.02'S	039°42.20'E	3810m	variable	ski	1995	Station	Seasonal	n/a	15
Druzhnaya 4	AQ-DRZ	Russia	69°44'S	073°42'E	20m			1987	Station	Seasonal	n/a	50
Dumont d'Urville	AQ-DDU	France	66°39.77'S	140°00.08'E	42m			1956	Station	Year-round	26	100
Edgeworth-David		Australia	66°15'S	100°36'E	15m				Camp	Seasonal	n/a	
Enigma Lake		Italy	74°42.81'S	164°02.49'E	170m	730m	ski		Airfield Camp	Seasonal	n/a	
Escudero	AQ-ESC	Chile	62°12.07'S	058°57.75'W	10m			1994	Station	Year-round	2	33
Esperanza	AQ-ESP	Argentina	63°23.70'S	056°59.77'W	25m			1952	Station	Year-round	55	90

Name of Facility	UN Locode	Operated by National Program(s) from	Latitude	Longitude	Altitude above sea level	Airfield (5) Length Longest Runway	Airfield (5) Landing Gear Suitability	First Opened	Facility Type (7)	Current Status (8)	Winter Average Population	Peak Population (9)
Fossil Bluff		United Kingdom	71°19.76'S	068°16.02'W	92m	1200m	ski		Airfield Camp	Seasonal	n/a	
Frei		Chile	62°12.00'S	058°57.85'W	10m			1969	Station	Year-round	70	120
Gabriel de Castilla	AQ-GDC	Spain	62°59'S	060°41'W	15m			1990	Station	Seasonal	n/a	14
Gondwana		Germany	74°22.80'S	164°07.80'E				1983	Station	Seasonal	n/a	
Great Wall	AQ-GWL	China	62°12.98'S	058°57.73'W	10 m			1985	Station	Year-round	14	40
Gregor Mendel		Czech Republic	63°48.04'S	057°52.95'W	~ 10 m			2006	Station	Seasonal	n/a	20
Halley	AQ-HLY	United Kingdom	75°34.90'S	026°32.47'W	37 m	1200 m	ski	1956	Station	Year-round	15	65
Juan Carlos Primero	AQ-JCP	Spain	62°39'S	060°23'W	12 m			1989	Station	Seasonal	n/a	14
Jubany	AQ-JUB	Argentina	62°14.27'S	058°39.87'W	10 m			1982	Station	Year-round	20	100
King Sejong	AQ-KSG	Korea	62°13.40'S	058°47.35'W	10 m			1988	Station	Year-round	18	70
Kohnen	AQ-KHN	Germany	75°00'S	000°04'E	2900 m	900 m	ski	2001	Station	Seasonal	n/a	28
Law – Racovita	AQ-LAW	Australia & România	69°23'S	076°23'E	65 m			1987	Station	Seasonal	n/a	13
Lenindgradskaya		Russia	69°30'S	159°23'E				1971	Station	Temporarily Closed	n/a	
Macchu Picchu		Peru	62°05.49'S	058°28.27'W	10 m			1989	Station	Seasonal	n/a	28
Maitri	AQ-MTR	India	70°45.95'S	011°44.15'E	130 m			1989	Station	Year-round	25	65
Maldonado		Ecuador	62°26.96'S	059°44.54'W	~ 10 m			1990	Station	Seasonal	n/a	22
Marambio	AQ-MRB	Argentina	64°14.70'S	056°39.42'W	200 m	1200 m	wheel	1969	Station	Year-round	55	150
Marble Point Heliport		USA	77°24.82'S	163°40.75'E					Airfield Camp	Seasonal	n/a	
Mario Zucchelli	AQ-MZU	Italy	74°41'S	164°07'E	15 m	3000 m	wheel & ski	1986	Station	Seasonal	n/a	90
Marsh	AQ-TNM	Chile	62°11.45'S	058°59.20'W	45 m	1300 m	wheel		Airfield Camp	Year-round	n/a	
Matienzo		Argentina	64°58'S	60°03'W	32m			1961	Station	Seasonal	n/a	15
Mawson	AQ-MAW	Australia	67°36.28'S	062°52.25'E	5m	variable	ski	1954	Station	Year-round	20	60
McMurdo	AQ-MCM	USA	77°50.88'S	166°40.10'E	~ 10m	3000m	wheel & ski	1955	Station	Year-round	250	1000
Melchior		Argentina	64°20'S	62°59'W				1947	Station	Seasonal	n/a	36
Mid Point		Italy	75°32.44'S	145°49.12'E	2520m	1200m	ski		Airfield Camp	Seasonal	n/a	
Mirny	AQ-MIR	Russia	66°33.12'S	093°00.88'E	40m			1956	Station	Year-round	60	169
Mizuho		Japan	70°41.70'S	44°19.50'E				1970	Station	Seasonal	n/a	
Molodezhnaya		Russia	67°40.97'S	046°08.08'E	225m			1962	Station	Temporarily Closed	n/a	
Molodezhnaya Airfield		Russia	67°40.97'S	46°08.08'E	225m	2560m	wheel & ski		Airfield Camp	Seasonal	n/a	

Name of Facility	UN Locode	Operated by National Program(s) from	Latitude	Longitude	Altitude above sea level	Airfield (5) Length Longest Runway	Airfield (5) Landing Gear Suitability	First Opened	Facility Type (7)	Current Status (8)	Winter Average Population	Peak Population (9)
Neumayer	AQ-NEU	Germany	70°38.00'S	008°15.80'W	40m	1000m	ski	1981	Station	Year-round	9	50
Novolazarevskaya	AQ-NOV	Russia	70°46.43'S	011°51.90'E	102m			1961	Station	Year-round	30	70
Novolazarevskaya Airfield		Russia	70°49.52'S	11°37.68'E	550m	3000m	wheel & ski		Airfield Camp	Seasonal	n/a	
O'Higgins	AQ-OHG	Chile	63°19.25'S	057°54.02'W	12m	800m	ski	1948	Station	Year-round	16	44
Odell Glacier		USA	76°39'S	159°58'E	1600m	1800m	wheel		Airfield Camp	Seasonal	n/a	
Ohridiski		Bulgaria	62°38.48'S	060°21.88'W	~ 10m			1988	Station	Seasonal	n/a	15
Orcadas	AQ-ORC	Argentina	60°44.33'S	044°44.28'W	4m			1904	Station	Year-round	14	45
Palmer	AQ-PLM	USA	64°46.50'S	064°03.07'W	~ 10m			1965	Station	Year-round	12	43
Petrel		Argentina	63°28'S	56°13'W	18m			1967	Station	Seasonal	n/a	55
Primavera		Argentina	64°09'S	60°57'W	50m			1977	Station	Seasonal	n/a	18
Princess Elizabeth		Belgium	71°57'S	23°21'E					Station	Under Construction	n/a	
Progress 2	AQ-PRO	Russia	69°23'S	076°23'E	15m			1989	Station	Year-round	20	77
Prud'homme		France	66°41.22'S	139°54.42'E	~ 10m				Camp	Seasonal	n/a	
Refugio Ecuador (6)		Ecuador	62°08'S	058°22'W	~ 10m			1990	Refuge	Seasonal	n/a	4
Ripamonti		Chile	62°12.07'S	58°53.13'W	50m			1982	Station	Seasonal	n/a	4
Risopatron		Chile	62°22'S	59°40'W	40m			1954	Station	Seasonal	n/a	12
Rothera	AQ-ROT	United Kingdom	67°34.17'S	068°07.20'W	16m	900 m	wheel	1976	Station	Year-round	22	130
Rothera Skiway		United Kingdom	67°34.23'S	68°07.76'W	250m	2500 m	ski		Airfield Camp	Seasonal	n/a	
Russkaya		Russia	74°45'S	136°40'W				1980	Station	Temporarily Closed	n/a	
S17		Japan	69°01.50'S	040°06.50'E	620m	1200 m	ski		Airfield Camp	Seasonal	n/a	
San Martín	AQ-SMT	Argentina	68°07.78'S	067°06.20'W	5m			1951	Station	Year-round	20	20
SANAE IV (3)	AQ-SNA	South Africa	71°40.42'S	002°49.73'W	850m	1000 m	ski	1962	Station	Year-round	10	80
Scott Base	AQ-SBA	New Zealand	77°51.00'S	166°45.77'E	10m			1957	Station	Year-round	10	85
Signy	AQ-SGN	United Kingdom	60°43'S	045°36'W	5m			1947	Station	Seasonal	n/a	10
Siple Dome		USA	81°39'S	149°04'W		variable	ski		Airfield Camp	Seasonal	n/a	
Sitry		Italy	71°39.32'S	148°39.15'E	1600 m	1000 m	ski		Airfield Camp	Seasonal		
Sky Blu		United Kingdom	74°51.38'S	071°34.16'W	1370-1500 m	variable	wheel		Airfield Camp	Seasonal		
Sobral		Argentina	81°05'S	40°39'W	1000m			1965	Station	Seasonal	n/a	7
Soyuz		Russia	70°35'S	68°47'E	336m			1982	Station	Temporarily Closed	n/a	

Name of Facility	UN Locode	Operated by National Program(s) from	Latitude	Longitude	Altitude above sea level	Airfield (5) Length Longest Runway	Airfield (5) Landing Gear Suitability	First Opened	Facility Type (7)	Current Status (8)	Winter Average Population	Peak Population (9)
Syowa	AQ-SYW	Japan	69°00.37'S	039°35.40'E	29m	1000 m	ski	1957	Station	Year-round	40	110
Tor	AQ-TOR	Norway	71°53'S	005°09'E	1625m			1985	Station	Seasonal	n/a	4
Troll (4)	AQ-TRL	Norway	72°00.12'S	002°32.03'E	1300m	3000 m	wheel	1990	Station	Year-round	7	40
Vernadsky	AQ-VKY	Ukraine	65°14.72'S	064°15.40'W	7m			1996	Station	Year-round	12	24
Videla		Chile	64°49'S	62°51'W				1957	Station	Seasonal	n/a	
Vostok	AQ-VOS	Russia	78°28.00'S	106°48.00'E	3500m	3000 m	ski	1957	Station	Year-round	13	25
Wasa	AQ-WSA	Sweden	73°03'S	013°25'W	~ 400m			1989	Station	Seasonal	n/a	20
Wilkins Runway		Australia	66°41.45'S	111°31.73'E	740m	4000 m	ski & wheel		Airfield Camp	Seasonal	n/a	
Yelcho		Chile	64°50'S	63°35'W	10m			1962	Station	Seasonal	n/a	9
Zhongshan	AQ-ZGN	China	69°22.27'S	076°23.22'E	~ 10m			1989	Station	Year-round	15	30
										Station Population Totals:	1088	4229

Notes:

(1) Original Belgrano Station opened 1955. Replaced by Belgrano II 1979.

(2) Concordia Station opened Dec 1997 for summer-only operation. Opened for year-round operation Feb 2005.

(3) Original SANAE Station opened 1962. SANAE IV opened 1997 at a new location, 200km south of SANAE I to III.

(4) Troll Station opened Feb 1990 for summer-only operation. Opened for year-round operation Feb 2005.

(5) Skiways are generally not maintained all year-round. In many cases they are prepared only when and as required by National Programs. Airfield information is extracted from the Antarctic Flight Information Manual (AFIM) published and maintained by COMNAP. See *http://www.comnap.aq/publications/afim.*

(6) Refugio Ecuador (full name "Refugio República del Ecuador") was previously known as "Vicente".

(7) Facility Types are: (*NOTE that these are indicative definitions only at this stage – these definitions are being reviewed and clarified to ensure they can be interpreted in a similar manner by all National Programs*).

- **Station**: an established installation with fixed buildings and mechanical services – reticulated power, water and sewage, etc.;
- **Camp**: a more basic and less permanent installation, such as a group of tents/ shelters, often used only for a small number of seasons;
- **Refuge**: usually a small and very basic installation, sometimes only one small hut, but usually of a permanent nature;
- **Airfield Camp**: an installation, whatever its size and type, attached to an airfield – if the airfield is not attached to a station, camp or refuge that is already listed separately;
- **Depot**: a depot of food, fuel or other supply.

(8) Current Status options are:

- **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**: construction work has commenced, but not completed;
- **Under Consideration**: construction planned but no construction has commenced.

(9) Peak population - the maximum number of persons present at the facility at any one time. This will typically be the number of persons accommodated/based at the facility at the busiest time of the summer. This can be higher or lower than the nominal accommodation capacity of the facility.

Appendix 2

COMNAP work groups 2007-2008

COMNAP works primarily through a number of work groups focused on various areas of expertise such as ship and air operations, environmental management or training. Each group has two main functions in its domain of expertise:

- Continually exchange practical, operational information to help identify practical solutions in the support of Antarctic Programs and facilitate relevant cooperation and collaboration;
- Respond to requests from COMNAP for specialist advice on specific issues and for developing common solutions or guidelines as the need arises.

1. Overview – Group names, acronyms and brief descriptions

Governance and Support

- COUNCIL – COMNAP Council
- EXCOM – COMNAP Executive committee
- SECRETARIAT – COMNAP Secretariat

Safety

- SAFETY – COMNAP Safety Working Group

Antarctic Logistics and Operations - general

- SCALOP – COMNAP Standing Committee on Antarctic Logistics and Operations
- SYMP – COMNAP Symposium Working Group (organises biennial Logistics and Operations Symposium)

Shipping and Air Operations

- AIROPS – COMNAP Air Operations Working Group
- SHIPOPS – COMNAP Ship Operations Working Group

Environmental Management and protection

- AEON – COMNAP Antarctic Environmental Officers Network

(overseen by ECG – COMNAP Environmental Coordinating Group)

Energy Management

- ENMANET – COMNAP Energy Management Officers Network

(overseen by CENMAN – COMNAP Energy Management Coordinating Group)

Medical Support

- MEDINET – COMNAP Medical Officers Network

(overseen by COMED – COMNAP Medical Coordinating Group)

Training and Information

- TRAINET – COMNAP Training Officers Network; and
- INFONET – COMNAP Information [and Outreach] Officers Network

(both overseen by CODAT – COMNAP Coordinating Group on Outreach and Training)

Interaction with Other Operators

- TANGO – COMNAP Working Group on Tourism and Non-Government Operations in Antarctica

International Polar Year 2007-2009

- IPYCG – COMNAP International Polar Year Coordinating Group

2. Group Officers, Terms of Reference, Tasks and Actions for 2007-2008

Notes:

Tasks indicated are tasks for the period July-2007 to June-2008, that is between the 2007 annual meeting COMNAP XIX (Washington) and the 2008 annual meeting COMNAP XX (St Petersburg).

The origin shown is the 2-letter ISO 3166-1-alpha-2 country code of the National Antarctic Program that person is affiliated with.

GOVERNANCE AND SUPPORT

COUNCIL – COMNAP Council
Chair
José Retamales (CL) 08-2007 to 07-2010
Membership
One representative for each member National Program, the Manager of National Program (MNAP), assisted by his/her designated members of his/her National Program.

EXCOM – COMNAP Executive Committee

Membership

- *Chair:* ***José Retamales (CL) 08-2007 to 07-2010***
- *Past Chair:* ***Gérard Jugie (FR) 08-2007 to 07-2008***
- *COMNAP Representatives:* ***Christo Pimpirev (BG) 08-2006 to 07-2009; Rasik Ravindra (IN) 08-2007 to 07-2010; Lou Sanson (NZ) 08-2007 to 07-2010***

plus 2 ex-officio members:

- *SCALOP Chair:* ***John Pye (UK) 08-2005 to 07-2008***
- *COMNAP Executive Secretary:* ***Antoine Guichard – 10-2003 to 09-2009 (non-voting member)***

Terms of Reference

- Develop policy and directions submitted to the COMNAP Council for discussion, adjustment and approval
- Maintain an appropriate, mutually beneficial relationship with the Executive of SCAR
- Implement decisions taken by the COMNAP Council, in particular through developing annual work programs and guiding the work of COMNAP groups between Annual General Meetings
- Take responsibility for COMNAP matters between full meetings of the COMNAP Council
- Guide and review the operation of the COMNAP Secretariat

SECRETARIAT – COMNAP Secretariat

Executive Secretary ***Antoine Guichard – 10-2003 to 09-2009***

Terms of Reference

- Support the work of COMNAP and its various groups and maintain communication and understanding between members
- Maintain communication with other members of the Antarctic Treaty System and relevant international, regional or specialist organisations
- Represent COMNAP at meetings of the Antarctic Treaty System in conjunction with and under the guidance of the COMNAP Chair
- Identify and monitor current and upcoming issues of relevance to COMNAP and its members
- Represent and promote COMNAP as needed, in particular in the secretariat host country
- Develop and maintain COMNAP business and support systems and administer COMNAP finances
- Develop and maintain COMNAP publications and archives

SAFETY

SAFETY – COMNAP Safety Working Group

Chair: ***Kim Pitt (AU) 08-2006 to 07-2009***

Terms of Reference

- Share and review safety, contingency planning and emergency policies and practices used in Antarctica
- Improve, maintain and monitor the COMNAP Accident, Incident and Near Miss Reporting (AINMR) system
- Work with SCALOP, TANGO, SHIPOPS, AIROPS, TRAINET, MEDINET (on occupational health matters) and other work groups on common safety issues
- Consider safety initiatives that would benefit National Programs

Tasks

- Consider and develop an AINMR system for COMNAP and promote its use
- Develop the agenda and assist SCALOP to conduct a joint meeting during the next COMNAP in St Petersburg of (as a minimum) SHIPOPS, AIROPS and Safety to reach consensus on the most practical way for the Safety WG to assist COMNAP
- Support COMNAP's participation in the informal open-ended Intersessional Contact Group (ICG) set-up by ATCM XXX "to examine the issue of further steps to address passenger vessels in the Antarctic Treaty Area"

ANTARCTIC LOGISTICS AND OPERATIONS - GENERAL

SCALOP – COMNAP Standing Committee on Antarctic Logistics and Operations

Chair: ***John Pye (UK) 08-2005 to 07-2008***

Chair-elect: Kazuyuki Shiraishi ***(JP) to be Chair 08-2008 to 07-2011***

Terms of Reference

The Committee consists of the national SCALOP representatives, designated by their Manager of National Antarctic Program, working with and for COMNAP. The purpose of SCALOP is to contribute to the objectives of COMNAP by:

- Investigating and, where necessary, arranging for the provision of technical advice on operational topics identified by COMNAP and its groups
- Providing support to COMNAP groups dealing with technical advice on Antarctic logistics and operations, particularly for ship, air and safety activity
- Sharing knowledge, lessons learned and best practice about logistic and operational matters of mutual interest to national operators
- Guiding the activities of the Symposium Working Group

Tasks

- Complete the survey on collaboration at research stations and in the field, and draft an ATCM Information Paper for EXCOM on the extent of international collaboration.

SYMP - COMNAP Symposium Working Group

Chair: ***Valery Klokov (RU) 08-2006 to 07-2008***

Terms of Reference

- Review the previous Symposium on Antarctic Logistics and Operations and develop plans for the next event

Tasks

- Organise 2008 SCALOP Symposium in conjunction with COMNAP XX in St Petersburg

SHIPPING AND AIR OPERATIONS

AIROPS - COMNAP Working Group on Air Operations

Chair: ***Giuseppe de Rossi (IT) 08-2007 to 07-2010***

Terms of Reference

- Continue implementation of ATCM Recommendation XV-20 of 1989 on *Air Safety in Antarctica*
- Maintain the Antarctic Flight Information Manual (AFIM) with timely distribution of amendments
- Share and discuss operational experience and information on new technology related to Antarctic air operations and associated communication, navigation, the avoidance of mutual interference, and contingency response
- Review the air transport aspects of international cooperation in Antarctic science and support
- Continue to review developments in the use of existing or additional air links, and the use of blue ice or compacted snow landing sites

Tasks

- Update information on member policies on airfield access as part of AFIM electronic version
- Identify operators' practices and AFIM usage by managers and pilots and consider implementing AFIM in electronic format on COMNAP web site
- Start implementing a parallel version of the AFIM in electronic format on the COMNAP web site, which may complement but not replace the current printed version
- Work together with SCALOP and the Safety Working Group on development of principles for SAR cooperation between operators.

SHIPOPS - COMNAP Working Group on Ship Operations

Chair: ***Manuel Catalán (ES) 08-2004 to 07-2007***

Terms of Reference

- Give consideration to, and make recommendations on, further developments as well as promote the introduction of appropriate information on shipping in Antarctic waters
- Assess and evaluate relevant recommendations and measures of maritime and other organisations as well as provide input and, if necessary, take part at relevant meetings, for example the meetings of the Hydrographic Commission on Antarctica (HCA)
- Share and discuss, with other related COMNAP groups, operational experiences and information related to Antarctic ship operations and associated communication, navigation, energy use, contingency response and safety

Tasks

- Maintain a productive relationship with HCA, contribute to its work and identify the ways by which National Programs could further support the work of the HCA
- Maintain a productive relationship with other COMNAP groups, such as the Safety Working Group, on matters of common interest
- Continue the development of the COMNAP Ship Position Reporting System (SPRS)
- Contribute to COMNAP's participation in the informal open-ended Intersessional Contact Group (ICG) set-up by ATCM XXX “to examine the issue of further steps to address passenger vessels in the Antarctic Treaty Area”
- Review and follow the development of the International Maritime Organization's (IMO) recommendations, including those related to safety and marine environmental protection, and identify components that could be incorporated into National Program operations
- SHIPOPS Chair and Executive Secretary, in liaison with Safety and TANGO Chairs, to monitor and participate in the ICG set up to examine the issue of further steps to address passenger ('tourist') vessels in the Antarctic Treaty Area, and ensure that all communications are posted on the COMNAP web site, accessible to all members.
- Participate as an observer in the 7th meeting of the Hydrographic Commission on Antarctica (HCA) and report back to EXCOM and COMNAP

ENVIRONMENTAL MANAGEMENT AND PROTECTION

ECG - COMNAP Environmental Coordinating Group

Membership: ***Yves Frenot (FR - Chair 08-2006 to 07-2009), Maaike Vancauwenberghe (BE), Lou Sanson (NZ), Henry Valentine (ZA)***

Terms of Reference

- Provide liaison between the COMNAP Council and the Antarctic Environmental Officers Network (AEON)
- Direct the development and preparation of responses to COMNAP requests with copies of all charges to AEON to be sent electronically to the COMNAP Council
- Report to COMNAP on the activities of the network at the COMNAP annual general meeting, and inter-sessionally, as issues arise
- Develop methods for coordination of monitoring activities to avoid wasteful duplication and ensure effective use of resources

AEON - COMNAP Antarctic Environment Officers Network

Coordinator : ***Rodolfo Sánchez (AR) 01-2006 to 07-2009***

Terms of Reference

- Exchange information and ideas about practical and technical environmental issues on Antarctica
- Promote mutual understanding among Network members on the practical application of the Environmental Protocol to national programs
- Respond to requests from COMNAP for advice on environmental issues

Tasks

- Encourage uptake of best practices for monitoring
- Provide information on basic operational monitoring parameters currently measured in Antarctic stations, as part of environmental monitoring programs in place (All AEON Members) – recognising that COMNAP had already invested a lot in this domain
- Finalise and publish COMNAP fuel handling and storage guidelines
- Continue to ascertain, in close cooperation with AIROPS, current coverage of aircraft wildlife awareness guidelines by National Programs
- Reshape the COMNAP's "Summary of Environmental Monitoring in Antarctica" (2005), in order to make it more easily accessible for likely users.
- Provide input on the "Code of Conduct for Fieldwork in Antarctica" and keep close liaison with SCAR on this issue.
- Prepare an Information paper on the survey on procedures to minimize introductions of alien species for presentation at CEP XI (Kiev, 2008).
- Make all necessary arrangements for the organization of a Workshop on procedures to minimize introductions of alien species during or before COMNAP XX (St Petersburg, 2008).

ENERGY MANAGEMENT

CENMAN - COMNAP Coordinating Group on Energy Management

Membership: ***Jan-Gunnar Winther (NO - Chair 08-2006 to 07-2009), Patrice Godon (FR), Erick Chiang (US)***

Terms of Reference

- Develop goals and provide guidance on the development of energy management practices with a view to reducing environmental impacts and reliance on fossil fuels
- Monitor and identify emerging technologies that may have an impact on activity in Antarctica and report to COMNAP at the annual meeting
- Monitor the progress of the Energy Management Network (ENMANET) and report to COMNAP on the activities of the network at its annual meeting, and inter-sessionally should the need arise
- Review the terms of reference and tasks each year

ENMANET - COMNAP Antarctic Energy Management Officers Network

Coordinator : ***David Blake (UK) 08-2006 to 07-2009***

Terms of Reference

- Determine the extent to which national Antarctic programs effectively utilise energy management and conservation processes. This includes the employment of both conventional and alternative energy technologies. Specifically the working group shall examine:
    - the type of systems employed
    - the maximum and average power output of the systems
    - the capital and operating costs
    - problems encountered in operation, if any
- Facilitate the exchange of operating experience and encourage cooperative projects in alternative energy and emerging technologies

Tasks

- Update energy database and transfer to new web site
- Exchange information on best practice and technologies
- Enable collaborative projects where this can lead to effective delivery
- Hold a workshop in June 2008 in conjunction with COMNAP XX in St Petersburg

MEDICAL SUPPORT

COMED - COMNAP Medical Coordinating Group

Membership: ***Mariano Memolli (AR - Chair 08-2005 to 07-2008), Virginia Mudie (AU), Robert Culshaw (UK), Maaike Vancauwenberghe (BE)***

Terms of Reference

- Task and oversee the work of the COMNAP Medical Officers Network (MEDINET), in particular to:
  1. exchange information on medical capabilities between COMNAP members
  2. guide about basic process for personnel selection
  3. develop standards for medical responses in emergencies and evacuations in liaison with other groups and networks
  4. exchange information about medical problems in Antarctica
- Report to COMNAP at its annual meeting on the activities of MEDINET
- Review terms of reference and tasks each year

MEDINET - COMNAP Antarctic Medical Officers Network

Coordinator : Iain Grant (UK) ***08-2007 to 07-2010***

Terms of Reference

- Exchange information and experience on medical support in National Antarctic Programs
- Promote initiatives between national Antarctic programs in order to develop and facilitate closer cooperation
- Respond to requests from COMNAP for advice on medical issues
- Support and advise COMNAP on occupational health and medical issues

Tasks

1. Make available, through the medical facilities database on the COMNAP web site, National Programs' documents on summer medical standards and medical information
2. Establish common standards for medical screening for the interchange of personnel between national programs
3. Establish a database of current national program medical capabilities, including facilities, equipment and staffing
4. Encourage the use by all National Programs and other Antarctic operators of the agreed format for medical information for use in medical evacuation within and from the Antarctic continent
5. Consider how National Programs should respond to the threat of a human infectious disease outbreak in the Antarctic (i.e. pandemic influenza)
6. Establish an anonymised database of medical events
7. Share medical aspects of “Major Incident Plans”
8. Develop information for prevention, management and treatment of common medical problems in Antarctica – the first information will consider altitude sickness
9. Prepare guidelines to assist with medical plans in case of mass unusual animal mortality

Actions

- Provide a full business plan about the Anonymised Database of Medical Events project to EXCOM by end of September 2007

TRAINING AND OUTREACH

CODAT - COMNAP Coordinating Group on Outreach and Training

Membership: ***Lou Sanson (NZ - Chair 08-2005 to 07-2008), Karl Erb (US), Hosung Chung (KR), Jan Stel (NL)***

Terms of Reference

- Guide and coordinate the progress of the Outreach and Training networks and report to COMNAP on the activities of the networks at its annual meeting, and inter-sessionally should the need arise
- Guide and support, as needed, the development of the networks and review the terms of reference each year

TRAINET - COMNAP Antarctic Training Officers Network

Coordinator : ***Albert Lluberas (UY) 08-2007 to 07-2010***

Terms of Reference

- Exchange information and experience on training programs including manuals, techniques, procedures and training aids
- Promote initiatives between national programs in order to develop and facilitate closer cooperation
- Facilitate the exchange of personnel between NAPs to participate in training programs and encourage the development of joint training initiatives between NAPs where practical

Tasks

- Collate information from NAPs on training courses syllabus and list Standard Operating Procedures (SOPs) and policy documentation relevant to training and post to the COMNAP web site
- Collate information on oil spill prevention and clean-up training syllabus and list equipment used by NAPs for responding to clean-up operations and post to the COMNAP website
- Develop a "Users Guide" in English of commonly used Antarctic terminology and post to COMNAP website
- Maintain the TRAINET network (promote the benefits of TRAINET and increase member participation in the network)
- Promote the exchange between NAPs of personnel to participate in training programs
- Maintain a record of training exchanges for National Programs
- Review the voluntary Training Checklist

INFONET - COMNAP Antarctic Information and Outreach Officers Network

Coordinators : ***Eva Grönlund (SE) and Linda Capper (UK) 01-2007 to 07-2009***

Terms of Reference

- Exchange information, views and ideas about education, outreach and communication (EOC) within comnap and on behalf of COMNAP
- Promote mutual understanding on EOC activities and facilitate partnerships
- Respond to requests from comnap on EOC issues
- Work with relevant organisations in developing activities of mutual interest

Tasks

- Write INFONET strategic plan with action plan for approval by CODAT/COMNAP
- Enhance the content of the Members area of the COMNAP web site by sharing publications, policies, procedures and best practice
- Identify like-minded regions or project based groups to develop specific technical and/or regional projects
- Identify National Program opportunities to leverage from high profile Antarctic outreach activities
- Hold a workshop in conjunction with COMNAP XX (St Petersburg, 2008)

INTERACTION WITH OTHER OPERATORS

TANGO - COMNAP Working Group on Tourism and Non-Government Operators

Chair: ***José Retamales (CL) 08-2005 to 07-2008***

Terms of Reference

- Review non-NAP activities of common concern to National Antarctic Programs (NAPs), including non-IAATO operations and adventure tourism activities
- Share advance information where available on "small/adventure" tourism activities to try to anticipate problems.

Tasks

- Survey members to gather statistics and other information on the interaction between National Antarctic Program (NAP) operations and other (non-NAP) operations, looking at both negative and positive impacts of such interactions
- Continue to consult with National Programs from countries having a major point of departure to Antarctica to check if appropriate port-airport authorities can provide the advance information needed on "small/adventure" tourism activities to try to anticipate problems
- Conduct a survey on the question "What is the impact of tourism on science" - this should not be limited to ship voyages but also include flights, including possible flights to newly opened areas such as Dronning Maud Land and the Australian sector

INTERNATIONAL POLAR YEAR 2007-2009

IPYCG - COMNAP IPY Coordinating Group

Membership: ***Anders Karlqvist (SE) Chair 08-2004 to 07-2007, Patricio Eberhard (CL), Yaedong Kim (KR), Valery Lukin (RU), Henry Valentine (ZA)***

Terms of Reference

- Encourage multi-national logistical partnerships and the integration of technological developments to advance the scientific goals established for IPY
- Track progress of IPY activities by all members
- Review the IPYCG terms of reference at each annual meeting

Tasks

- Respond to specific requests from the science community for assistance, as agreed at ATCM XXIX
- Update the IPY ship survey
- Consider maintaining information on logistics support provided to IPY projects as a contribution to the IPY legacy record

SCAR Annual Report 2007-2008

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. SCAR adds value to research conducted by individual nations by facilitating and encouraging researchers to extend beyond their programmes and to partner with other colleagues worldwide that have similar or complimentary research interests. 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 SCAR provides a forum for the community of polar scientists, researchers, and students to gather to report on the latest science, exchange ideas and explore new opportunities. SCAR also supports research Fellows and provides a broad range of data management and information products and services.

SCAR provides objective and independent scientific advice on the underlying scientific knowledge and principles necessary for the 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 Convention 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).

SCAR has led the development of a network of the four main bodies of the International Council for Science (ICSU) that are concerned with research in the polar regions and/or the cryosphere; these include SCAR, the World Climate Research Programme (WCRP), the International Arctic Science Committee (IASC), and the newly formed International Association for Cryospheric Sciences (IACS) of the International Union for Geodesy and Geophysics (IUGG). Creation of this 4-component network will help to ensure that polar scientific research is effectively coordinated.

We are now in the International Polar Year (IPY) 2007-2009, to which SCAR is making a significant contribution through its scientific research programmes. In recognition of the importance of the IPY the SCAR Open Science Conference for July 8-11 2008 (St Petersburg, Russia) has been broadened to be the SCAR/IASC Open Science Conference, and has the theme "Polar Research – Arctic and Antarctic Perspectives in the IPY". The IPY Steering Committee has formally adopted it as the first of three thematic IPY conferences (the second will be in Oslo in June 2010 and the third in Canada in 2012). Planning for the conference, which has attracted almost 1400 registrants, has occupied much of the year.

SCAR leverages its limited resources by partnering with selected global science programmes, providing them with an Antarctic perspective. These include the World Climate Research Programme (WCRP), elements 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).

During 2007, SCAR's research focused on five themes in Antarctic science: (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 scientific discoveries include:

1. A new medium depth (136 m) ice core has been drilled in a high accumulation site on the south-western Antarctic Peninsula. It records a doubling of accumulation since the 1850s, with acceleration in recent decades. This rapid increase is strongly associated with changes in the regional meteorology – especially in the southern hemisphere Annular Mode (SAM).

2. Excess deuterium data from Dome A shallow ice cores show an increasing trend during the past ~4000 years, implying that the average moisture sources of Dome A in the southern hemisphere are moving equatorwards.

3. New marine geological data suggest the possibility of rapid and synchronous ice retreat from much of Antarctica's continental margin following the last glaciation, beginning about 11,500 years ago and lasting less than 1,000 years, which may be related to globally-relevant meltwater pulses.

4. The latest inventory of Antarctic subglacial lakes and aquatic environments has identified more than 160 features. The spectrum of subglacial environments provides a framework for comparing and contrasting lake environments enhancing our ability to test hypotheses about the origin, evolution, and significance of subglacial aquatic environments.

5. Tests of the extent to which auroral events in both hemispheres are joined together (inter-hemispheric conjugacy) have long showed 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.

6. A continent-wide analysis of biological distribution patterns provides many independent examples of long-term persistence and evolution within Antarctica, over timescales from the Pleistocene to Gondwana breakup, providing a new challenge and constraint to reconstructions of the history of ice on the continent.

1. What Is SCAR (for further details see *www.scar.org*)?

The Scientific Committee on Antarctic Research (SCAR) is the principal 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 coordination of 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 continues unabated in the International Polar Year (IPY) 2007-2008, in which SCAR is playing a leading role. SCAR's Members currently include 34 nations and 8 of ICSU's Scientific Unions linking 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. Its main objective is to initiate, develop, and co-ordinate high quality international scientific research in the Antarctic region including studying the role of the Antarctic in the Earth system. To meet this objective 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 scientific questions**.**

In addition SCAR provides objective and independent scientific advice, as an official Observer, on issues of science and conservation affecting the management of Antarctica and the Southern Ocean, to four intergovernmental bodies having responsibilities in the Antarctic region:

(i) the Antarctic Treaty System through the Antarctic Treaty Consultative Meeting (ATCM) and the Committee for Environmental Protection (CEP);

(ii) the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), and its Scientific Committee;

(iii) the Advisory Committee of the Agreement on Conservation of Albatrosses and Petrels (ACAP); and

(iv) The Council of Managers of National Antarctic Programmes (COMNAP).

2. SCAR Science

2.1 Major Scientific Research Programmes

Currently SCAR research is focused 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*).

Earth System Science tells us that all components of the earth are interconnected. To ensure the sort of cross disciplinary interactions that are essential to effectively addressing the most pressing and societal relevant scientific questions in Earth System Science, strong links are fostered between SCAR's Scientific Research Projects; SCAR's Standing Scientific Groups; and other global programmes.

2.1.1 Antarctica In The Global Climate System (AGCS)

Antarctica in the Global Climate System (AGCS) is a cross-disciplinary science programme that focuses on three key aspects of climate change: (i) how does the modern climate system work in the Antarctic; (ii) how has it developed over roughly the last 10,000 years (i.e. outside the longer geological time frame addressed by the ACE programme); and (iii) producing improved estimates of how the climate of the Antarctic may evolve over the next century under different greenhouse gas emission scenarios. The results will be of value to a number of groups within SCAR, as well as to the Intergovernmental Panel on Climate Change (IPCC). For background to the programme see the web site: *http://www.antarctica.ac.uk/met/SCAR_ssg_ps/AGCS.htm*. AGCS and its sub-project are co-sponsored by the World Climate Research Programme (WCRP). Several IPY projects contribute to AGCS goals.

2.1.1.1 Progress

A number of advances were made during 2007. A paper was accepted for publication in the Journal of Geophysical Research that gave improved projections for how the climate of the Antarctic and Southern Ocean would evolve over the 21st Century. The work was based on the output of the models used in the Fourth Assessment Report of the IPCC and was reported as a SCAR highlight last year (Bulletin 163).

Another paper accepted by the same journal, is the first assessment of the circumpolar distribution of sea ice and snow thickness on the sea ice around Antarctica. The paper is derived from the SCAR Antarctic Sea Ice Processes and Climate (ASPeCt) climatology, which is based on ship observations from 1980 to 2005.

Regional changes in bottom water production have been discovered that have the potential to affect the ventilation of the global ocean abyss. The densest layers of the oceanic overturning circulation form in the Southern Ocean. An oceanographic section across the eastern Scotia Sea revealed significant variability in the deep and bottom waters. Warming (~0.1ºC) of the warm mid-layer waters in the Scotia Sea between 1995 and 1999 reversed through to 2005, reflecting changes seen earlier upstream in the Weddell Sea. The volume of deep waters with potential temperature less than 0ºC decreased during 1995-2005. Entry of the abyssal waters to the eastern Scotia Sea changed from the south to the north-east between 1995 and 1999, then back to the south by 2005. These changes reflect inter-annual variations in the deep waters exiting the Weddell Sea, that are due to changes in the strength of the Weddell Gyre, and large-scale atmospheric variability that may include the El Niño/Southern Oscillation. These signals promulgate into the world ocean.

Exciting new data on snow accumulation, temperature and ice thickness have been obtained from Dome A. Excess deuterium data from Dome A shallow ice cores show an increasing trend during the past ~4000 years, implying that the average moisture sources of Dome A in the southern hemisphere are moving equatorwards. A deep ice core collected here could provide a climate record extending back more than a million years.

A new medium depth (136m) ice core has been drilled in a high accumulation site on the south-western Antarctic Peninsula. Its record reveals a doubling of accumulation since the 1850s, from a decadal average of 0.49m (water equivalent) per year in 1855–1864 to 1.10m per year in 1997–2006, with acceleration in recent decades. This rapid increase is the largest observed across the region. It is strongly associated with changes in the regional meteorology – especially the southern hemisphere Annular Mode (SAM).

AGCS has been involved in a number of successful field campaigns, many of which contribute to IPY:

- Traverse to Dome-A as part of the Chinese IPY programme, PANDA, measuring ice layers, bedrock, snow accumulation rates and ice flow;
- Ice cores collected near Maîtri station as part of the Indian ITASE (2006-2007) collaborative programme;
- Joint Brazilian-Chilean-US ice core drilling on the Detroit Plateau, Antarctic Peninsula, as part of the Climate of the Antarctic and South America (CASA) programme;
- The US ITASE team completed their second traverse to the Pole on 24 December 2007;
- The Norwegian – US Scientific Traverse of East Antarctica involved scientific investigations along two overland traverses in East Antarctica;
- The Australian Sea Ice Physics and Ecosystem eXperiment (SIPEX) and the US Sea Ice Mass Balance of Antarctica (SIMBA) campaigns aimed to improve understanding of the

physics, biology and biogeochemistry of the sea ice. The Geoscience Laser Altimeter System (GLAS) aboard NASA's ICESat satellite was turned on for 33 days to coincide with the field campaigns to calibrate and validate satellite data.

Good progress has been made in preparing the SCAR Antarctic Climate Change and the Environment (ACCE) review document. A draft of the review will be presented to the SCAR Delegates in Moscow. As part of this exercise a major paper on the State of the Antarctic and Southern Ocean Climate System (SASOCS) has been prepared and is under revision for Reviews of Geophysics.

The Australian Antarctic Data Centre has made good progress in establishing a sea ice data portal for *in situ* sea ice data, as recommended by the International Workshop on Antarctic Sea Ice Thickness, co-sponsored by SCAR in Hobart in July 2006. SCAR funded a student to source and enter data from almost 150 files from various national programmes. This stimulated funding from Australia to develop the data portal.

AGCS led organisation of the Second Workshop on Recent High Latitude Climate Change (Seattle, USA; 22-24 October 2007), a joint effort with IASC and the WCRP/SCAR/IASC Climate and the Cryosphere (CliC) project that considered atmospheric, oceanic and cryospheric changes that had taken place during the last 50 years in the Arctic and Antarctic. A report on the meeting will appear in the scientific literature. A workshop, jointly organised with CliC, on Global Prediction of the Cryosphere, was held at the British Antarctic Survey in October 2007. The meeting reviewed our ability to predict the evolution of various aspects of the cryosphere over the coming century. A symposium on Antarctica and the Global Climate System was held at the European Geosciences Union General Assembly in Vienna, Austria in April 2007. The second issue of the AGCS Newsletter 'Notus', edited by Dr Mike Meredith, was issued in July 2007.

2.1.1.2 Plans

1) Complete drafting the ACCE review for the SCAR Delegates meeting in July 2008.
2) Support continuous ice-core drilling at Dome-A during IPY and beyond.
3) Support long-term monitoring of meteorology and ice/air interactions along the Zhongshan-Dome A traverse route.
4) Hold a workshop on driving cryospheric models with high-resolution atmospheric data.
5) Hold an ITASE Synthesis Workshop in September 2008.

2.1.2 Antarctic Climate Evolution (ACE)

The Antarctic ice sheet began forming near the Eocene-Oligocene boundary 34 Ma ago. Its considerable fluctuations have been one of the major driving forces for changes in global sea level and climate to the present time. ACE is collecting and analysing geological data from selected time periods and integrating them with the results of advanced numerical models to establish the origin of the present configuration of the ice sheet and to assess the rates at which it grows and decays over time, as the basis for improving forecasts of the behaviour of the ice sheet, and hence sea-level, through time.

2.1.2.1 Progress

ACE has now formed an official link to IGBP's PAGES programme, and is also an IPY project.

Aside from many papers in journals, ACE produced a new Special Issue of *Palaeogeography, Palaeoclimatology, Palaeoecology* on Antarctic Climate Evolution, which is now online at the Elsevier website and will appear as hardcopy early in 2008. This is the fourth such ACE contribution. It contains sixteen research papers based on presentations at the ACE sponsored EGU meeting in

Vienna (April 2006), and at the XXIX SCAR open Science meeting, Hobart, Tasmania (July 2006). ACE also published an overview of its work in the journal *Antarctic Science*, and Florindo and Siegert are editing a book on Antarctic Climate Evolution for publication in 2008.

ACE has been much involved in scientific meetings. It supported many activities in the 10th ISAES Conference (Santa Barbara, California, August 2007), including a short course on Geoscience Modelling for Novices, and ten individual sessions and meetings. ACE also held a Special Session on Antarctic Climate Evolution at the 2007 INQUA meeting. In addition to the many ACE-themed sessions at the 2007 Fall meeting of the American Geophysical Union, ACE organized a Town Hall Meeting attended by 65 people. Interest was high, and several people volunteered for leadership roles on ACE groups.

ACE continues to stimulate or be involved in geological drilling. ACE supported a workshop to organise a 2008 proposal to the International Ocean Drilling Programme (IODP) for drilling in the Ross Sea, where focus is on the Cenozoic evolution of the West Antarctic Ice Sheet from Eocene to present. Plans for the IODP Wilkes Land drilling are moving ahead. Co-chief scientists have been nominated (Carlota Escutia from ACE and Henk Brinkhuis), the pre-cruise meeting between the Operators and the co-chief scientists was held at College Station, Texas between 17 and 19 December 2007.

During the year, the ANDRILL (Antarctic Drilling) Project (IPY Project #256), which ACE supports, has made a major contribution to increasing the geological data set of Antarctic climate and ice sheet history for the past 20 million years. The project completed its first drill hole beneath the McMurdo Ice Shelf in January 2007. A record depth of 1284.87 metres below sea floor was reached. The recovered strata provide a record of ice shelf and climate history for the past 14 million years. The initial report is now in press as Volume 14, No. 3 of Terra Antarctica. ANDRILL's second season of drilling was completed in November 2007 with another record depth of 1138.54m drilled beneath the sea ice of southern McMurdo Sound. The recovered strata overlap with those from the first drill hole, and extend the record back to 20 million years.

Plans to undertake deep-field airborne radar surveying of the structure of the East Antarctic ice sheet have progressed, with a new ACE-focused programme emerging between the US, UK, Australia and New Zealand. The project will survey the ice sheet base across Dome C to the surrounding coastal regions in 2008. In addition plans were consolidated for the airborne surveying component (joint US-UK-Germany) of the IPY Project AGAP, which will be concentrated around Dome A in the 2008/09 field season.

An ACE Blog was established in August 2007 (*www.antarcticclimate.blogspot.com*), to complement the current ACE website (*www.ace.scar.org*), with posts on news, research updates, and events.

2.1.2.2 Plans

1) complete the ACE book to be published by Elsevier;
2) undertake deep-field airborne geophysics surveys;
3) contribute to the several major science meetings, including the SCAR Open Science Conference in St Petersburg, the International Geological Congress in Oslo, and the European Geosciences Union in Vienna;
4) reconfigure and update the ACE website;
5) publish the IODP Wilkes Land drilling Scientific Prospectus;
6) sponsor a graduate student to attend the Urbino School of Palaeoclimate;
7) plan the first ACE Open Sciences Conference (Granada, Spain, June 2009).

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 make predictions on how organisms and communities will respond to current and future environmental change. EBA integrates work on marine, terrestrial and limnetic 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 level and ultimately the biome level. Most national programmes individually cannot attempt a study on such a bold scale. EBA's role, as a non-science-funding umbrella or facilitator, is primarily one of connection, and encouragement of various research initiatives being undertaken towards the goals of EBA by a large number of projects, programmes and individuals covering very diverse areas of biology. To facilitate its work, EBA has established five Work Packages to cover its main areas of research (see below).

2.1.3.1 Progress

EBA is both a SCAR and an IPY programme. Several other projects that contribute to EBA are themselves IPY endorsed projects such as CAML (Census of Antarctic Marine Life), MarBIN (Marine Biodiversity Information Network), Aliens, TARANTELLA, MERGE, the Latitudinal Gradient Project, and ICED (Integrating Climate and Ecosystem Dynamics in the Southern Ocean). Of these, CAML, MarBIN and ICED are either SCAR activities or sponsored by SCAR. They are part of the list of some 40 national and international programmes contributing to EBA.

EBA's success is reflected in part in publications emerging from its scientific community, and totaled at least 159 peer-reviewed papers in 2007, including:

- IX SCAR International Biology Symposium - Evolution and Biodiversity in Antarctica. *Antarctic Science* Special Edition Volume 19(2) 2007. Eds E. Fanta, W. Arntz, W. Detrich, H. Kawall.
- Antarctic Ecology: From Genes to Ecosystems. Part 1. Rogers, A.D, Murphy, E., Clarke, A., Johnston, N. (eds). *Philosophical Transactions of the Royal Society B.* Vol. 363(1477), 2007.
- Antarctic Ecology: From Genes to Ecosystems. Part 2. Rogers, A.D, Murphy, E., Clarke, A., Johnston, N. (eds). *Philosophical Transactions of the Royal Society B.* 2007.
- Convey, P., Gibson, J. A. E., Hillenbrand, C.-D., Hodgson, D. A., Pugh, P. J. A., Smellie, J. L., and Stevens, M. I. (In press). Antarctic terrestrial life - challenging the history of the frozen continent? Biological Reviews, (2008), 83, pp. 103–117.
- Convey, P. 2007. Non-native species in the Antarctic terrestrial environment: presence, sources, impacts and predictions. "Non-native species in the Antarctic" Workshop Proceedings, Gateway Antarctica, Christchurch, New Zealand. de Poorter, M., Gilbert, N., Storey, B., and Rogan-Finnemore, M. (Eds.).
- Frenot, Y., Convey, P., Lebouvier, M., Chown, S.L., Whinam, J., Selkirk, P.M., Skotnicki, M. & Bergstrom, D.M. 2007. Biological invasions in the Antarctic: extent, impacts and implications. "Non-native species in the Antarctic" Workshop Proceedings, Gateway Antarctica, Christchurch, New Zealand. de Poorter, M., Gilbert, N., Storey, B., and Rogan-Finnemore, M. (Eds.).
- Convey P, Stevens M.I. 2007. Antarctic Biodiversity. *Science* 317(5846): 1877-1878.

EBA facilitates collaboration through workshops and conferences that maximize international and multidisciplinary involvement; in 2007 these included:

A MERGE workshop (Microbiological and Ecological Responses to Global Environmental Changes in Polar Regions), which was held during the International Conference on Cryogenic Resources of Polar Regions (18-21 June 2007, Salekhard, Russia) (*www.ikz.ru/permafrost*). A publication from NIPR Japan is being planned as an outcome of the meeting.

The Latitudinal Gradient Project (LGP; *www.lgp.aq*) workshop (Wellington, New Zealand, 2 July 2007), which was held in conjunction with a conference celebrating 50 Years of New Zealand's involvement in Antarctica. The workshop explored the possibilities of comparing ecosystem studies along the Victoria Land coast with those along the Antarctic Peninsula.

A SCAR-MarBIN workshop (Bialowieza, Poland, June 2007), which examined the Admiralty Bay Benthos Diversity Database; the Arctic Ocean Diversity data system; a Data Management Protocol for CAML cruises; technology for georeferenced Barcoding of biological data; an Interactive Antarctic Field Guide; development of the Register of Antarctic Marine Species; and improvements to the web site.

EBA also contributed to (i) the International Workshop on Antarctic Biology: Critical Issues and Research Priorities for IPY (2007-2009) (Follonica, Italy, 7-9 June 2007), and (ii) the 10th International Symposium on Antarctic Earth Sciences (ISAES) (Santa Barbara, USA 26 August - 1 September 2007), where there was a joint EBA-ACE session.

Highlights from the different Work Packages include the following:

WP 1: Evolutionary history of Antarctic organisms: Synthesizing this data is a challenge that has been met in a recent paper by EBA participants (Convey et al. Biological Reviews, 2008), which describes the evolutionary history of Antarctic organisms in the terrestrial realm from Gondwana to the present. Key results from this paper were highlighted in the 2006 annual report. Members of this EBA work package are contributing to the SCAR 'Antarctic Climate Change and the Environment' (ACCE) report.

WP 2: 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. Several MERGE expeditions and projects are underway, including ones run by Poland, UK, Japan, Spain, Malaysia, Belgium and Brazil. Organisms studied include fungi, methanogens, cyanobacteria, bacteria and microalgal protests (particularly diatoms and green algae). MERGE is bipolar and includes Arctic projects.

WP 3: Patterns of gene flow and consequences for population dynamics: isolation as a driving force: There has been work on this topic in the Ross Sea Sector. Among terrestrial organisms the work targets rotifers, tardigraves, nematodes, terrestrial arthropods (springtails and mites), lichens and mosses. In the marine realm, New Zealand's RV *Tangaroa* has been collecting fish and invertebrate samples at several sites in the Southern Ocean. 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 of the faunal work under this heading is being undertaken under the Census of Antarctic Marine Life (CAML) programme, which contributes to EBA (see CAML details, below). Various studies have shown that Antarctic benthic systems are not as stable as once thought, but that they are exposed to dynamic conditions and respond to environmental changes. We are trying to find out how, and what parameters limit the resilience of such systems. In shallow water, along the western Antarctic Peninsula, studies are focusing on the response of assemblages or key species to disturbance by sea-ice and geographical shift. Deeper offshore communities are locally and regionally shaped by iceberg scouring, which can alter biodiversity. Other studies try to correlate biological and physical processes in the water column and sea-ice with higher trophic levels such as fish and

benthos. Some assemblages show significant pelago-benthic coupling. Recent studies show that algae, krill and salps, which play a key ecological role as food for predators, respond sensitively 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 ultimate objective is to predict the evolution of marine Antarctic ecosystems.

WP 5: Impact of past, current and predicted future environmental change on biodiversity and ecosystem function. This topic addresses ecological questions and theories related to the consequences of climate change and biological invasions in the subantarctic islands. 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.

Census of Antarctic Marine Life (CAML)

CAML is in the midst of an extensive fieldwork phase, with coordination of research on 18 Antarctic voyages during IPY. Each addresses the central CAML and EBA themes of biodiversity and evolution in Antarctica (for detail see *www.caml.aq*). *Polarstern* is conducting the "SYSTCO" project to examine benthic pelagic coupling of the ecosystem to 5,000m depth in the Weddell Sea. *Aurora Australis*, *L'Astrolabe* and *Umitaku Maru* will synchronise investigations for the East Antarctic survey "CEAMARC". *Humboldt* and *Ary Rongel* from South America are active around Admiralty Bay. *Tangaroa* has worked in the Ross Sea. Other vessels will be sailing soon. All biodiversity data will be submitted to SCAR MarBIN. An Education and Outreach scientist on each ship sends daily material to websites.

Seabird and mammal observations from tourist ships are now coming to CAML, following agreement with IAATO. The World Conference on Barcoding in Taipei in September 2007 provided directions and contacts for CAML's special DNA barcoding project, based at the British Antarctic Survey and Scott Polar Research Institute. Barcoding of Antarctic species is connected to the new POLARBOLI group based in Trondheim.

CAML is part of the global Census of Marine Life (CoML). CAML representatives attended the CoML All Programmes meeting in Auckland in November 2007 to strengthen collaboration with related projects on Arctic biodiversity, zooplankton, seamounts, and nearshore and abyssal environments. CAML is preparing an Encyclopedia of Antarctic Marine Life as a contribution to CoML. CAML also participated in the Scientific Steering Committee meeting of CoML in Antarctica in mid February 2008.

GLOBEC and ICED

SCAR is a co-sponsor of IGBP's Southern Ocean GLOBEC (Global Ecosystems Dynamics) and ICED (Integrating Climate and Ecosystem Dynamics in the Southern Ocean) programmes, which also contribute to CAML, and thence to EBA. For ICED the challenge is to predict i) how the diverse Southern Ocean ecosystems will respond to climate change and ii) the impacts of marine ecosystem change on the Earth System. Climate related changes are already having a profound effect on the marine ecosystems (especially krill), parts of which are also commercially exploited. ICED brings together oceanographers, biogeochemists, climatologists, and ecosystem and fisheries scientists to generate unique circumpolar datasets, undertake coordinated field activities and develop models to address three key questions:

1) How do climate processes affect the dynamics of circumpolar ecosystems?
2) How does ecosystem structure affect circumpolar ocean biogeochemical cycles?

3) How should ecosystem structure and dynamics be included in sustainable approaches to fisheries management?

ICED will approach its challenges through three main areas of i) historical data synthesis, ii) fieldwork, and iii) model development. A project has begun with EUR-OCEANS to retrieve biological information from past Southern Ocean cruises, especially on the abundance and distribution of pelagic species - to build a more complete picture of the changing circumpolar ecosystem. ICED will integrate international fieldwork, to address gaps in coverage and knowledge. As a first step, a picture of Southern Ocean fieldwork is provided through the interactive ICED IPY fieldwork map on the ICED website (*www.iced.ac.uk*). This is designed to encourage communication and cooperation, and will help to develop coordinated field activities in future. ICED convened its first modeling workshop (Old Dominion University, Virginia, USA 16 - 18 April 2008) to begin to characterise the Southern Ocean food web across a range of species (microbes to cetaceans), trophic levels and geographical areas, so as to identify major gaps in knowledge and data availability, and to explore the issues in modeling the Southern Ocean ecosystem.

In part the success of EBA rests on the extent to which biological data can be maintained, archived and exchanged. For the most part this is achieved through the Australian Antarctic Data Centre, which hosts and maintains a Biodiversity Database (*http://data.aad.gov.au/aadc/biodiversity/*) that contains data on Antarctic and sub-Antarctic flora and fauna. The database started through EBA's predecessor, RiSCC, and is now EBA's main database, containing all of the collections of data that we are aware of in the public domain (see *http://data.aad.gov.au/aadc/biodiversity/collections.cfm*). EBA also relies on other databases that are coordinated by several of the individual projects and programmes that contribute to EBA, such as SCAR-MarBIN, MERGE, and the Southern Ocean Continuous Plankton Recorder Programme (SO-CPR). EBA has set up a portal within the Antarctic Master Directory, which allows access to metadata that contribute to EBA's aims. For more detail see the new EBA website at *www.eba.aq*.

2.1.3.2 Plans

1. EBA contribution to the Polar and Alpine Microbiology, Banff, Alberta, Canada, 11-15 May 2008;

2. An Antarctic Gradients workshop will be held at BAS, 19-20 May 2008;

3. EBA contribution to international workshop "The polar and alpine environments: molecular and evolutionary adaptations in prokaryotic and eukaryotic organisms", Naples, Italy, May 29th—30th, 2008;

4. Presentations at the SCAR Open Science Conference, St Petersburg (July 2008);

5. Antarctic Gradients Open Workshop St Petersburg, Russia, 5 July 2008;

6. Extremophiles 2008; Cape Town, South Africa, 7-11 September 2008;

7. MARBEF, Valencia, November 2008;

8. X SCAR International Biology Symposium; Sapporo, Japan, 26 - 31 July 2009;

9. CAML papers for special volume of Deep Sea Research and a synthesis document entitled "The Status of Antarctic Marine Biodiversity".

2.1.4 Subglacial Antarctic Lake Environments (SALE)

SCAR's SALE programme continues to promote, facilitate, and champion international cooperation and collaboration to explore and study subglacial lakes and streams in Antarctica following appropriate standards of environmental protection. SALE is a recognized IPY programme under the auspices of the SALE-UNified International Team for Exploration and Discovery (SALE-

UNITED) programme. For more details on SALE go the newly revised programme website at *http://scarsale.tamu.edu/*.

2.1.4.1 Progress

SALE facilitates partnerships and cooperation. Members of SALE are funded through their national programmes to conduct the science of SALE. As such, the achievements of SALE are a collaborative set of advances produced by a cohort of national efforts. Major new understanding and recognition of phenomena related to subglacial aquatic environments have advanced our understanding of Antarctica on a number of fronts during the past year. Since these environments have yet to be penetrated and sampled in a rigorous manner, SALE science and discovery is at the beginning of what will be many years of research and discovery. The following highlights three recent, major scientific advances in understanding subglacial aquatic environments. A complete bibliography of SALE related publications is provided at: *http://scarsale.tamu.edu/selected-publications*.

Subglacial accumulations of water are common features beneath thick ice sheets. In 2005, the second inventory of Antarctic subglacial lakes and aquatic environments was published, containing details (location, size, ice thickness) of 145 lakes, 68 more lakes than the previous inventory of 1996 (Siegert et al. 2005). Since this publication, several new lakes have been identified, bringing the total identified features to over 160. A third inventory is planned for 2010. It is expected that as aerial coverage by various types of survey techniques planned during the IPY improves, the number of recognized subglacial features would dramatically increase.

Outburst discharges of subglacial water have repeatedly occurred over geologic time and are an on-going process that influences the dynamics of the overlying ice**.** Satellite altimetry of the ice sheet surface has shown that a portion of the central East Antarctic ice sheet lowered by 2-3m between 1996 and 1997, at the same time the ice sheet was elevated 1-2m some 250km away. The only feasible explanation for this observation is the rapid loss of 1.8km^3 of water from a subglacial lake, which flowed along the base of the ice sheet and into a series of other lakes. Similar observations have been made near the margins of West Antarctica. Significant fluxes of water are flowing beneath the Antarctic ice sheet producing an interconnected system of subglacial lakes. The consequences for subglacial lakes as habitable environments and for modifications to large-scale ice flow conditions are considerable. The expected pathways of subglacial water drainage have been calculated, revealing a coherent network of channel systems, feeding water from large upstream catchments into several large outlets. Through these hydrological systems it is plausible that subglacial water can flow from the interior of ice-sheets to the ocean. The landforms created by paleo-outbursts have been documented suggesting that these processes have been an important agent of morphologic change over geologic history.

A spectrum of subglacial aquatic environments exists. Subglacial aquatic environments occur in a range of geological settings suggesting that individual lakes may have differing origins and evolutions. Subglacial aquatic environments are not randomly distributed across the Antarctic continent, but occur in preferred locations. This suggests that the limnological conditions, the age, the source of founder microbes, the time of isolation and the extant microbiological inhabitants will vary from location-to-location. More than one classification system has been proposed. The recognition of a spectrum of subglacial lake types provides a framework for comparing and contrasting lake environments across the Antarctic continent, greatly enhancing our ability to test fundamental hypotheses about the origins, evolution, and significance of subglacial aquatic environments to the evolution of the Antarctic continent, its ice sheets and microbiota.

During the last year, SALE has:

- built a community through workshops, meetings, and sessions at scientific meetings;

- identified major scientific and technological goals for SALE research and exploration through active engagement of the community;
- provided a framework for the US National Academies report on environmental stewardship of subglacial aquatic environments;
- held regular meetings that serve as forums for the discussion of science and technology amongst national programmes; and
- educated the public through extensive and sustained coverage of SALE science in the lay and scientific press.

The SALE IPY Programme is SALE – the Unified International Team for Exploration and Discovery (SALE-UNITED) *http://www.ipy.org/index.php?ipy/detail/sale_united/*. Antarctica's Gamburtzsev Province Exploration programme includes subglacial lake characterization. Subglacial aquatic environments are a target for exploration by the US-Norway Traverse 08-09**.** The number of SALE related publications in peer-reviewed journals is increasing each year. Lists of publications by year are maintained at the SCAR SALE web site *http://scarsale.tamu.edu/selected-publications*. The SALE Workshop organizers (Kennicutt and Petit) published an EOS front-page article in 2007 (EOS Transactions Vol. 88, No. 11, 13 March 2007, Pages 129, 131). Many important articles have been published in Science and Nature on various aspects of SALE science authored by SALE participants and collaborators during the last few years.

2.1.4.2 Plans

1. Future SALE meetings will focus on a major aspect of SALE science and a programme of invited speakers will be developed for each topic.

2. The outcome from each meeting will be given in a white paper and submitted for publication in a journal.

3. SALE will propose and organize sessions at all major earth and polar science meetings and venues.

4. There will be a subglacial aquatic environments session at the SCAR/IASC IPY Conference in St Petersburg in July 2008.

5. An informal SALE dinner meeting will be scheduled in St.Petersburg in July 2008.

6. SALE sessions will be proposed for the AGU and EGU meetings in 2008/2009.

7. A SALE annual meeting will be held in 2009 (location to be determined).

8. Application has been made for an AGU Chapman Conference entitled "Exploration And Study Of Antarctic Sub-glacial Aquatic Environments", for 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. ICESTAR operates with 4 Thematic Action Groups (TAGs):

- TAG-A: Quantification of the coupling between the polar ionosphere and neutral atmosphere from the bottom-to-top and the global electric circuit;
- TAG-B: Quantification of the inner magnetospheric dynamics using remote sensing techniques;

- TAG-C: Quantification of the state of the upper atmosphere, ionosphere, and magnetosphere over the Antarctic continent and how it differs from the northern hemisphere during a wide range of geophysical conditions;
- TAG-D: Creation and management of the data portal.

For details of ICESTAR plans and progress see *http://www.scar-icestar.org*.

2.1.5.1 Progress

Like other SRPs, ICESTAR achieves much of its impact through workshops and conferences. Among these:

- ICESTAR had a dedicated session on "Solar Influence on Geospace as Determined by Hemispherically Conjugate Observations", in the Greenland Space Science Symposium (May 2007). Proceedings will be published, in 2008, in a special issue of Journal of Atmospheric and Solar-Terrestrial Physics, with the title "Transport in the Coupled Solar Wind - Geospace System seen from a High-Latitude Vantage Point".
- ICESTAR participated in the EISCAT workshop in Åland (Finnish Archipelago) to discuss results from the system of EISCAT incoherent scatter radars; the workshop was accompanied by a two-week summer school to teach students to use the radar facilities. Papers from the workshop will appear in a special issue of Annales Geophysicae in 2008.
- ICESTAR co-sponsored the polar Gateways Arctic Circle Sunrise 2008 meeting in Barrow, Alaska, 23-29 January 2008.

ICESTAR's IPY programme is "Heliosphere Impact on Geospace", involving 29 international research groups from ICESTAR and the International Heliophysical Year communities. The project has three main themes: (i) Coupling processes between the different atmospheric layers and their connection with solar activity, (ii) Energy and mass exchange between the ionosphere, the magnetosphere, and the heliosphere, and (iii) Inter-hemispheric similarities and asymmetries in geospace phenomena.

ICESTAR is also developing a strong collaboration with the multidisciplinary IPY project POLENET (meteorology, glaciology, volcanology, seismology), which will build and maintain an extensive Antarctic network of dual-frequency GPS receivers. Data from the network will be invaluable for the ICESTAR-IPY community, which also maintains GPS receiver stations in the Antarctic for ionospheric research.

Selected scientific highlights that emerged during the year are as follows (for lists of papers and other highlights see *http://www.scar-icestar.org*):

Geospace-atmosphere coupling: Lightning during strong thunderstorms launches electromagnetic waves that propagate both in the wave-guide between the earth surface and ionosphere (spherics) and along geomagnetic field lines (whistlers). Whistlers can interact with radiation belt electrons and cause their precipitation into the atmosphere. Combined observations from VLF-antennas, lightning detection systems, and the DEMETER satellite show a causal relationship between lightning and electron precipitation events. Both data and models confirm the connection between the intensity of the electromagnetic waves and the fluxes of electrons in precipitation events [Inan, U.S., Piddyachiy, D., Peter, W.B., Sauvaud, J.A., and M. Parrot: DEMETER satellite observations of lightning-induced electron precipitation, Geophys. Res. Lett., doi:10.1029/2006GL029238, 2007].

Interhemispheric comparison studies: Tests of the extent to which auroral events in both hemispheres are joined together (inter-hemispheric conjugacy) have long showed 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. [Watanabe, M., Kadokura, A., Sato, N., and T. Saemundsson, Absence of geomagnetic conjugacy in pulsating auroras, Geophys. Res. Lett., doi:10.1029/2006GL030469, 2007].

Arctic and Antarctic polar winter NOx: GOMOS satellite night-time observations of middle atmosphere NO_2 and O_3 profiles during recent polar winters in the Arctic and Antarctic have been used to study the relation between energetic particle precipitation and downward transport of polar NO*x*. NO*x* is commonly enhanced when there are high levels of high-energy particle precipitation and/or geomagnetic activity. In the Arctic winter of 2005–2006 the NO*x* enhancement was higher than expected from the geomagnetic conditions, indicating the importance of changing meteorological conditions. [Geophys. Res. Lett., 34, L12810, doi:10.1029/2007GL029733, 2007].

2.1.5.2 Plans

ICESTAR will be involved in organising or participating in several workshops or conferences, including:

1. The Third International Workshop on Riometry (June 22, 2008, Zermatt Resort in Midway, Utah); [Riometers are an important tool for space science and space weather];

2. SCAR/IASC Open Science Conference (St Petersburg July 2008);

3. Winter 2008 ICESTAR-IHY-IPY meeting.

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) Seabirds: Members of this Group continue to provide advice regarding the nomination of Specially Protected Species status for the southern giant petrels. Trends in the population of this species will be examined at a workshop in Cambridge, UK, in May 2008, under the aegis of SCAR's Standing Committee on the Antarctic Treaty, to determine what advice to provide to Treaty Parties. The Group continued to work with BirdLife International to define Important Bird Areas in the Southern Ocean region, and continued its assessment of the potential impact of flipper banding on penguins. The Chief Officer of the Group, Dr Eric Woehler, resigned in 2007. Appointment of a successor was postponed pending the outcome of discussions on the possibility of merging with the Expert Group on Seals (see iii below). With the resignation of the Chief Officer, SCAR's representation on the Advisory Committee on Albatrosses and Petrels (ACAP) became temporarily vacant.

(ii) Seals: This Expert Group produced an update on the progress and products of the Antarctic Pack Ice Seals (APIS) programme, which was presented at the 2007 ATCM Meeting, and posted on the SCAR website (*http://www.seals.scar.org/*). In addition, a White Paper on the status of knowledge of the biology, distribution and abundance of the Ross seal, which militates against the removing of the species from the list of Specially Protected Species in Appendix A to Annex II of the Environmental Protocol, was tabled. A new research programme is being designed to understand the role(s) of top predators in the Southern Ocean. It will integrate long-term studies with new animal-borne instrument technologies for the study of water masses, behaviour and movement patterns.

(iii) Higher Predators: Following the advice of the July 2007 meeting of the Executive Committee, the Life Sciences SSG continued preparing a plan for merging the Expert Groups on Birds and

Seals to form a new Expert Group on Higher Predators. The plan will be discussed during meetings of the two Expert Groups in St Petersburg, Russia (July 2008), and by the Delegates to XXX SCAR in Moscow in July 2008.

(iv) Human Biology and Medicine: This Expert Group now has annual meetings with the Medical Network (MEDINET) group of COMNAP (Council of Managers of National Antarctic Programmes). A full merger of the two groups has still not been effected, but combined meeting is an essential first step on this route.

(v) The Action Group on Continuous Plankton Recorder Research (CPRAG) was formed during the SCAR XXIX meeting in Hobart 2006 and started its activities in 2007. It supports and develops the SCAR Southern Ocean CPR Survey based at the Australian Antarctic Division. The CPR Survey maps the biodiversity and distribution of plankton, including euphausiid (krill) life stages, and then uses the sensitivity of plankton to environmental change as early warning indicators of the health of the Southern Ocean. CPRAG's members include representatives of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR), and the Sir Alister Hardy Foundation for Ocean Science, which leads the northern hemisphere CPR surveys. The data set holds more than 100,000 records for about 200 zooplankton species from the Scotia Arc east to the Ross Sea. The SO-CPR Survey contributes to the Census of Antarctic Marine Life, with a circum-Antarctic CPR survey conducted from at least 10 vessels.

(vi) SCAR continued its co-sponsorship of both the Southern Ocean programme of the Global Ocean Ecosystems Dynamics (GLOBEC) project of the International Geosphere-Biosphere Programme (IGBP), and of a new programme by the name of Integrated Climate and Ecosystems Dynamics (ICED), which is also part of IGBP. ICED set up a web site (*http://www.antarctica.ac.uk/Resources/BSD/ICED/index.htm*) and circulated a draft science plan for comment.

(vii) In 2008 SCAR obtained Associate Participant status in the Global Biodiversity Information Facility (GBIF). SCAR will be involved in the governing of GBIF and in implementing GBIF's goals and work plan. Bruno Danis (Belgium), manager of the SCAR-MarBIN data network, will represent SCAR in the GBIF Governing Board, and Dave Watts, (Australia), in charge of the management of the EBA Antarctic Biodiversity Database, will represent SCAR in the GBIF Participant Node Managers' Committee.

(viii) In the wake of the sinking of the *M/S Explorer* on 23 November 2007, SCAR decided to create an Action Group on Antarctic Fuel Spills (AGAFS). AGAFS stands ready to address issues that might arise related to the fate and effects of fuel releases in Antarctica. The group is tasked with responding when specific advice is requested. In this context the group will operate as an executive committee directing, facilitating and coordinating responses. Its activities will be largely quiescent until a specific need arises. Responses might include a white paper on selected topics, compilations of biological resource data for an affected geographic location, convening of a workshop of experts, and/or provision of contact information for experts as examples.

(ix) Planning for the 10th SCAR Biology Symposium (26 – 31 July 2009), which will be held at Hokkaido University, Sapporo, Japan, began in 2007. Japanese colleagues established a Local Organising Committee chaired by Dr Mitsuo Fukuchi of the National Institute for Polar Research.

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 10th SCAR International Symposium on Antarctic Earth Science (ISAES-X) was held on August 26-31, 2007, at the University of California, Santa Barbara, USA. This is the tenth in a

series that is repeated at a different location every 4 years. It is a highlight of the activities of the SSG-GS and a key recurring event for Antarctic Geoscientists. The Proceedings "Antarctica: A Keystone in a Changing World" can be ordered from the National Academies Press (USA). Detailed description and summary of the event is available on the SCAR SSG-GS web page *http://www.scar.org/researchgroups/geoscience/*.

(ii) 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. GIANT is a leader in the bipolar IPY POLENET (Polar Earth Observing Network) project, to which GIANT will contribute the Antarctic GPS component. A POLENET workshop was organized in the frame of the 10th ISAES in Santa Barbara in August 2007. It is planned to propose POLENET as a Scientific Programme Planning Group (SPPG) for 2008-10 at the XXX SCAR meeting, with the intention of it becoming a Scientific Research Programmeme in 2010. During the XXX SCAR meeting a proposal will also be made to create a joint working group between ICESTAR/IHY and POLENET, on "GPS for Weather and Space Weather Forecast". For more information on GIANT see: *http://www.geoscience.scar.org/geodesy/giant.htm*. For information on POLENET see: *http://www.polenet.org/*.

(iii) High quality bathymetric maps are needed for safe navigation, as input for ocean modellers, to provide information on ecosystems, and as a clue to geological processes. The SCAR Expert Group on the International Bathymetric Chart of the Southern Ocean (IBCSO) aims to produce a high quality bathymetric map of the Southern Ocean together with topographic, geophysical, and other data. The IBCSO is a contribution to the General Bathymetric Chart of the Oceans (GEBCO). The Intergovernmental Oceanographic Commission (IOC) and the International Hydrographic Organization (IHO) accept IBCSO as a regional ocean-mapping programme and provide assistance through the Hydrographic Commission on Antarctica. IBCSO has expanded international collaboration in data collection and exchange during 2007. New multi-beam data were collected and processed by the Alfred Wegener Institute during two *Polarstern* cruises in Antarctic waters. IBCSO collaborates and exchanges data with the RADARSAT Antarctic Mapping Programme (RAMP), Antarctic Bedrock Topography (BEDMAP2), Antarctic Digital Magnetic Anomaly Project (ADMAP), Earth Topography (ETOPO2), and GEBCO. The first IBCSO meeting took place during the 10th ISAES in Santa Barbara in August 2007. The IBCSO Editorial Board now comprises 15 experts from the fields of hydrography, oceanography, and ocean mapping. Presentations on IBCSO and its relevance to other projects was given to the GEBCO Sub-Committee on Digital Bathymetry (New York, September 2007), the Southern Ocean Observing System (SOOS) planning meeting (Bremen, October 2007), the Standing Committee on Antarctic Geographic Information (SC-AGI) (Buenos Aires, October 2007), and the GEBCO Guiding Committee (Paris, November 2007). During the year, SCAR and SCOR distributed Circulars to their Members and Principal Investigators regarding the importance of bathymetric data acquisition in polar regions and their transfer to project databases. The SCAR/SCOR Expert Group on Oceanography made an explicit request to national members for bathymetric data for completing Bathymetric Charts in Antarctica. For more detail see *www.ibcso.org*.

(iv) 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 2007, ADMAP: updated a DVD of the data compiled up to 1999 for release to the World Data Centers; developed and promoted regional and continental scale interpretation of ADMAP data;

updated near-surface anomaly predictions; continued the compilation of a rock magnetic properties database in support of geological applications of the Antarctic magnetic anomalies; developed an Antarctic Reference Model for improved magnetic anomaly determination in the Antarctic; and worked on establishing a spherical harmonic cap model for the database to facilitate analytical manipulations of the Antarctic magnetic anomaly grid for geological applications. The ADMAP team met at the 10th ISAES meeting in Santa Barbara. In 2008, ADMAP will continue compiling all available terrestrial, marine, and satellite magnetic survey data collected since the IGY 1957-58 for the region south of 60°S into the ADMAP digital database. As magnetic surveys since 2001 have nearly doubled the amount of data for inclusion into the database, a database manager will be needed to carry out the work. SCAR will co-sponsor a workshop to release the updated database to the World Data Centers. ADMAP will continue developing and promoting regional and continental scale interpretation efforts, and identifying areas for new collaborative magnetic surveys.

(v) 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 2007 the Group:

- Hosted a workshop at the 10th ISAES meeting (Santa Barbara, USA, August 2007);
- Published in December 2007 a special issue of *Geoderma* titled "Antarctic Soils and Soil-Forming Processes in a Changing Environment";
- Continued developing legends for soil and permafrost map units;
- Prepared provisional soil and permafrost maps of (i) Transantarctic Mountains, and (ii) Antarctic Peninsula and islands, and a permafrost map of the Andes (Trombotto, Argentina);
- Published more than 50 papers in refereed journals pertaining to soils and permafrost in Antarctica, in the period 2005-2008.
- Developed the LATITUDE60 project in Portugal that includes (i) a 18' film about Antarctic Permafrost research distributed to over 200 schools in Portugal; (ii) 30 talks about Antarctic Permafrost research in high schools all over Portugal, including the Azores; (iii) wrote daily reports and answered questions from students, directly from the Antarctic;
- Held the 1st Iberian Workshop on Antarctic Peninsula Permafrost and Climate Change (17 December 2007, Lisbon, Portugal).
- Maintained the EGGAPE database at Waikato University (*http://erth.waikato.ac.nz/antpas*).
- 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 2008, EGGAPE will run one workshop at the Ninth International Conference on Permafrost (Fairbanks, Alaska, June 2008), and another at the SCAR Open Science Conference in St Petersburg, Russia (July 2008), and develop a Cryosol session with an Antarctic focus for the International Union of Soil Scientists meeting (Brisbane, Australia, 2010). They will also prepare electronic versions of soil and permafrost maps and databases of the Transantarctic Mountains and Antarctic Peninsula region.

(vi) The Sub-Ice Geological Exploration (SIGE) Action Group aims to look into ways of developing a collective SCAR-wide pan-Antarctic approach to drilling into the rocks beneath the ice to improve our understanding of Antarctica's geological history. Informal discussions were held in the margins of the ISAES meeting in Santa Barbara in 2007. The first meeting to develop a five-year work plan will be held in St Petersburg at the SCAR Open Science Conference in July 2008.

(vii) The Antarctic Neotectonics Group (ANTEC) ceased to exist, and its activities were absorbed into the IPY POLENET Programme. For more on POLENET see (ii) above.

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) Publication of the Bipolar Cryosphere Observing System (CryOS) Plan concluded SCAR's work on this topic with WCRP and the Integrated Global Observing System Partnership (IGOS-P) (the plan can be downloaded from *http://cryos.ssec.wisc.edu/*). Space agencies and others will implement the requirements as part of the Global Earth Observing System of Systems (GEOSS). SCAR will take responsibility for monitoring progress in implementing the system in Antarctica.

(ii) The joint SCAR/SCOR Oceanography Expert Group continued with its objective of planning a Southern Ocean Observing System (SOOS). A workshop was held in Bremen, in October 2007, to more fully develop the SOOS plan. It is hoped that a draft plan will be available for discussion at the next meeting of the Expert Group that takes place as part of the XXX SCAR meeting in St Petersburg (July 2008) and that it will be ready for publication in late 2008. 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) has also provided significant funding. For details see *http://www.clivar.org/organization/southern/expertgroup/SOOS_interim_report.pdf*.

(iii) In ocean sciences SCAR also co-sponsors with CLIVAR and CliC the Southern Ocean Implementation Panel (SOIP), which is involved in the development and assessment of the Southern Ocean Observing Systems, and the 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 Expert Group. The SOIP did not meet in the current period but will meet in February 2009, in Melbourne. IPAB had some extensive buoy deployments during UK, Australian, and US research cruises. More than 15 buoys were deployed in February, March, September and October 2007 in the Bellingshausen Sea, Ross Sea, and East Antarctic by various IPAB partners to study small scale ice deformation and large scale ice drift. IPAB will hold its biennial meeting in Bern in early July 2008 to discuss first results of this intensive buoy deployment campaign.

(iv) Both CryOS and SOOS (i and ii, above) are key components of the SCAR Pan Antarctic Observations Network (PAntOS)(see: *http://www.scar.org/researchgroups/physicalscience/PAntOS_Plan_Rev1.pdf*), which is currently being developed and will be further discussed in St Petersburg in July 2008.

(v) The SCAR Expert Group on Ice Sheet Mass Balance and Sea Level (ISMASS) is assessing methods and uncertainties in estimating Antarctic Ice Sheet mass balance and its relation to sea level. Current models of ice sheet decay used by the IPCC are inadequate, making forecasts of sea level change unreliable. During 2007 ISMASS developed a strategy to improve existing prognostic ice-sheet models. Following an informal meeting during the 2006 Fall Meeting of the American Geophysical Union, ISMASS developed the case for "A need for more realistic ice-sheet models", published in 2007 as SCAR Report 30. The report documents key gaps in our knowledge that prevent development of more realistic models for the polar ice sheets and form the starting point for focussed discussion during a three-day workshop as part of XXX SCAR in St Petersburg (July 2008). The meeting will formulate a 5-year plan for devising and implementing more realistic ice-sheet models.

(vi) SCAR is co-sponsoring IPICS, the International Partnerships in Ice Core Sciences, which is planning major international endeavours to improve science from ice coring (*http://www.pages-igbp.org/ipics/index.html*). Other sponsors include the IGBP's PAGES programme on past global change, and the International Association of Cryosphere Sciences (IACS). During 2007 IPICS drafted science and implementation or coordination plans for its priority projects. The drafts for "The oldest ice core: A 1.5 million year record of climate and greenhouse gases from Antarctica" and "The IPICS 40,000 year network: a bipolar record of climate forcing and response" are complete, and were edited and approved by the IPICS steering committee (Vienna, April 2008). The plan for the IPICS 2K project – "A network of ice core climate and climate forcing records for the last two millennia" - is being drafted. 20 nations are members of IPICS, with a 21st applying to join. The IPICS agenda has been endorsed in Europe with the formation of EuroPICS under the European Polar Board.

(vii) A new Action Group, for Environmental Contamination in Antarctica (ECA), was formed by XXIX SCAR in July 2006. It aims:

1. To understand the mechanisms and processes controlling distribution and transport of microcomponents in polar environments, and their environmental effects.
2. To assess the effects of global climatic changes on processes controlling the dispersion and transport of micro-components and to estimate the contribution of micro-components on climate and environmental changes in polar regions.
3. To monitor the environmental characteristics in Antarctica and set up a database of environmental parameters to follow the environmental evolution in polar regions.

ECA held its first workshop in Venice (14-16 June 2007). Preliminary groups were formed for initial data collection on the following themes: Atmosphere and aerosols, Biological contamination, Hg, Inland waters and soils, Minor and trace elements in biota, POPs in general, Seawater, and Trace elements in snow and ice. ECA will hold its second meeting at XXX SCAR in St Petersburg in July 2008. A web site is under construction.

3. Data And Information Management

(i) 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 is the task of the Joint SCAR-COMNAP Committee on Antarctic Data Management (JCADM) (*http://www.jcadm.scar.org*). During the reporting period JCADM has involved yet more National Antarctic Data Centres (NADCs) or designated national focal points, and its now has members from 31 nations. In 2007 JCADM held its annual meeting in Rome (3-7 September), where a capacity building workshop was organized to train NADC operators. The meeting was attended by representatives from 20 countries and from the Global Change Master Directory (GCMD). One of JCADM's primary tasks is to encourage national operators and principal investigators to populate the Antarctic Master Directory (AMD) with metadata. The AMD currently contains over 4500 data set descriptions, many of these directly linked to online data. 25 nations plus SCAR-MarBIN now contribute to the AMD. The AMD proves to be a very useful tool, which is being accessed increasingly by the wider community. The number of retrievals (= information downloads) has grown from a steady 500/month in the period January 2005-March 2007 to a very impressive 2500 to 4000/month since the start of the International Polar Year (IPY) in March 2007. JCADM is now much more engaged with the scientific community, through participation in the meetings of the Chief Officers of the SSGs and of the SCAR Executive Committee and also through the JCADM liaison persons, who are members of the Steering Committees of the Scientific Research Projects (SRP). JCADM

took part in the planning meeting for the Southern Ocean Observing System (Bremen, October 2007), presenting the outline for a SOOS Virtual Observatory. Ideas for this were further discussed at an ad-hoc meeting of JCADM and SCAR officials at the British Antarctic Survey in November. JCADM's progress and plans will be reviewed in 2008, prior to the SCAR and COMNAP meetings in Russia. JCADM is in the process of developing a SCAR Data Strategy, a draft of which will be presented at XXX SCAR for discussion. JCADM continues to be closely engaged in developing the IPY scheme for data management.

(ii) Antarctic Geographic Information: At XXIX SCAR in July 2006, the former Expert Group on Geographic Information (EGGI) became the Standing Committee on Antarctic Geographic Information (SC-AGI). SC-AGI provides geographic information products and policies to support Antarctic science and operations. Its work is relevant to a wide range of users including provision of geographic limits to Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs), and geospatial web services that might be needed for scientific, logistic, or tourism-related applications. A report of the deliberations of the SC-AGI workshop in Buenos Aires (September 2007) is available as SCAR Bulletin 165 (see *http://www.scar.org/publications/bulletins/*). A range of SC-AGI geographic information products is available as follows:

(i) Place Names: The SCAR composite gazetteer *http://www3.pnra.it/SCAR_GAZE*.

(ii) SCAR Map Catalogue: *http://aadc-maps.aad.gov.au/index.cfm.*

(iii) Topographic Database: The Antarctic Digital Database (ADD) at: *http://www.add.scar.org*.

(iv) The SCAR King George Island Geographical Information System (KGIS): *http://www.kgis.scar.org/*.

(v) The Cybercartographic Atlas of Antarctica: *http://www.carleton.ca/gerc/caap.*

(vi) The SCAR Feature catalogue: *http://aadc-maps.aad.gov.au/aadc/ftc/index.cfm*.

4. International Polar Year

SCAR is making a significant contribution to the International Polar Year (IPY) (2007 – 2009) launched on 1 March 2007. The SCAR President and Executive Director are members of the Joint ICSU/WMO Committee for the IPY, which also contains several eminent scientists from SCAR science programmes. They contributed to writing 'The Scope of IPY Science', published early in 2007. 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 will include three major scientific conferences, the first of which is 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"*. Almost 1400 people had registered for the conference by end April. The IPY-JC will meet in St Petersburg immediately before the conference. Recognising that the IPY is about education and outreach as well as about science, SCAR is hosting 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 has a paper in press in Polar Record on this topic.

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 30th ATCM in New Delhi (May 2007). The SCAR Lecture, on "Climate Change and the Antarctic – What Next?" was delivered by the SCAR President, Prof. Chris Rapley CBE (available from *http://www.scar.org/communications/*). SCAR presented 2 Working Papers and 9 Information Papers. An additional Working Paper, on the status of the southern giant petrel was withdrawn when conflicting data emerged shortly before the meeting. SCAR's advice is provided through the Standing Committee on the Antarctic Treaty System (SC-ATS). In 2008 SCAR is conducting 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) will address these matters at a meeting in May 2008. Also in May 2008 a SC-ATS workshop will be held in Cambridge to study all available data on the southern giant petrel and provide the 31st ATCM in Kiev (June2008) with the latest information on this species.

SCAR is also an Observer to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Graham Hosie (Australia) represented SCAR at the 26th annual CCAMLR meeting in Hobart (October 2007). 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 the SCAR/SCOR Ocean Expert Group is also relevant to CCAMLR, as is that of our Expert Groups on birds and seals. 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 at meetings of the Advisory Committee on Albatrosses and Petrels (ACAP). ACAP is contributing to the SC-ATS Southern Giant Petrels workshop in May 2008.

6. Other Developments

The SCAR History Group held its third workshop, on 'National and Trans-national Agendas in Antarctic Research Since the 1950s', at the Byrd Polar Research Center, Columbus, Ohio (25–26 October 2007). The results of the first workshop (Bremen, 2005) were published in 2007 in the Alfred Wegener Institute's Reports on Polar and Marine Research; the report of the second workshop (Santiago, 2006) will be published by the Chilean Antarctic Institute in 2008; the report of the third workshop (Columbus, 2007) will be published by the Byrd Polar Research Center. A fourth workshop will be held as part of the SCAR/IASC Open Science Conference in July 2008, and published in the Polar Record. These collections of papers provide insight into the evolution of Antarctic research since the 1950s, and into the emergence and development of institutions to co-ordinate that research in a pan-Antarctic way through SCAR.

As indicated in SCAR Report 28, SCAR plans to increase its contribution to Capacity Building, Education and Training (CBET). The main contribution continues to be the SCAR Fellowship Programme (4 Fellows funded in 2007-2008). SCAR and its partner the International Polar Foundation are working to attract fellows from non-traditional Antarctic countries into the fellowship programme for 2008-9, through their shared IPY programme 'The 6th Continent Initiative'. 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. Along with IASC, SCAR is now co-sponsoring the APECS meeting of young polar scientists as part of the XXX SCAR Meeting in St Petersburg (July 2008).

7. Administrative Achievements

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 the International Arctic Science Committee (IASC) on bipolar issues of common interest, and SCAR and IASC are jointly sponsoring the Open Science Conference in 2008, which will be a bipolar science meeting and the first of three major IPY science conferences. SCAR is also in the process of signing an agreement with the newly formed International Association for Cryospheric Sciences (IACS) of the International Union for Geodesy and Geophysics (IUGG). Creation of 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, especially the SCAR quarterly Newsletter. There were on average 100,000 hits per month on the SCAR web site for the first 4 months of 2008, approaching the levels typical before the 2006 Open Science Conference.

Personnel changes in the SCAR Secretariat included the departure of Dr Marzena Kaczmarska in March 2007 to join the Norwegian Polar Institute programme in Svalbard. She was replaced as Executive Officer in July 2007 by Dr Mike Sparrow, a physical oceanographer with Southern Ocean experience from the National Oceanography Centre in Southampton, UK, where he provided administrative assistance to the CLIVAR Office. Mrs Rosemary Nash was appointed as the new Administrative Assistant, operating part-time from early October 2007, replacing Mrs Karen Smith.

The Secretariat was responsible for organising the SCAR Executive Committee (Washington DC, July 9-11, 2007), and planning for XXX SCAR in Russia in July 2008 (Science Business Meetings, July 5-7; SCAR/IASC Open Science Conference, July 8-11, and SCAR Delegates Meeting, July 14-16).

In March 2008 SCAR obtained independent legal status as a Company Limited by Guarantee, and applied to become a Charity under UK Law, a process that should be complete by July 2008.

8. Organizational Details

SCAR MEMBERS and Secretariat can be seen at: *http://www.scar.org/about/officers/*

OFFICERS of SCAR and its Main Subsidiary Bodies can be seen at: *http://www.scar.org/publications/bulletins/SCAR_officers2006.pdf*

MEMBERS of the Steering Committees of SCAR's Scientific Research programmes can be seen at: *http://www.scar.org/publications/bulletins/SRPs_officers2006.pdf*

THE SCAR ORGANIZATIONAL CHART can be seen at: *http://www.scar.org/about/introduction/organization/*

Appendix

List of Acronyms

ACCE	Antarctic Climate Change and the Environment
ACE	Antarctic Climate Evolution
ADD	Antarctic Digital Database
ADMAP	Antarctic Digital Magnetic Anomaly Project
AGAFS	Action Group on Antarctic Fuel Spills
AGCS	Antarctica in the Global Climate System
AGU	American Geophysical Union
AMD	Antarctic Master Directory
ANDRILL	Antarctic Geological Drilling Project
ANTEC	Antarctic Neotectonics
ANTPAS	Antarctic Permafrost and Soils
APECS	Association of Polar Early Career Scientists
APIS	Antarctic Pack-Ice Seals
ASPeCt	Antarctic Sea Ice Processes and Climate
BAS	British Antarctic Survey
CASA	Climate of the Antarctic and South America
CBET	Capacity Building, Education and Training
CliC	Climate and Cryosphere Programme
CLIVAR	Climate Variability programme of WCRP
COML	Census of Marine Life
CPR	Continuous Plankton Recorder
CPR-AG	Continuous Plankton Recorder Action Group
EBA	Evolution and Biodiversity in the Antarctic
ECA	Environmental Contamination in Antarctica
EGAPPE	Expert Group on Antarctic Permafrost and Periglacial Environments
EGGI	Expert Group on Geographical Information
EGU	European Geophysical Union
ETOPO	Earth Topography Digital Dataset
GBIF	Global Biodiversity Information Facility
GEBCO	General Bathymetric Chart of the Oceans
GEOSS	Global Earth Observing System of Systems
GIANT	Geodetic Infrastructure for Antarctica
GLAS	Geoscience Laser Altimeter System
GLOBEC	Global Ocean Ecosystems Dynamics
GOMOS	Global Ozone Monitoring by Occultation of Stars (instrument on Envisat)
GOOS	Global Ocean Observing System
GPS	Global Positioning System
IACS	International Association of Cryospheric Sciences
IAI	International Antarctic Institute
IASC	International Arctic Science Committee
IBCSO	International Bathymetric Chart of the Southern Ocean
ICED	Integrated Climate and Ecosystem Dynamics in the Southern Ocean
ICESat	Ice, Cloud and land Elevation Satellite
ICESTAR	Inter-hemispheric Conjugacy Effects in Solar-Terrestrial and Aeronomy Research
IGBP	International Geosphere-Biosphere Programme
IGOS	Integrated Global Observing Strategy

IGOS-P	Integrated Global Observing Strategy Partnership
IGY	International Geophysical Year
IHY	International Heliophysical Year
INQUA	International Union for Quaternary Research
IODP	Integrated Ocean Drilling Programme
IPA	International Permafrost Association
IPAB	International Programme of Antarctic Buoys
IPICS	International Partnership in Ice Core Science
ISAES	International Symposium on Antarctic Earth Science
ISMASS	Ice Sheet Mass Balance and Sea Level
ITASE	International Trans-Antarctic Scientific Expedition
IUGG	International Union of Geodesy and Geophysics
JCADM	Joint Committee on Antarctic Data Management
KGIS	King George Island Geographical Information System
LGP	Latitudinal Gradient Project
MarBIN	Marine Biodiversity Information Network
MEDINET	Medical Network
MERGE	Microbiological and Ecological Responses to Global Environmental Changes in Polar Regions
NADC	National Antarctic Data Centre
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
PAGES	Past Global Change Programme
PANDA	The Prydz Bay, Amery Ice Shelf and Dome A Observatories
PAntOS	Pan Antarctic Observations Network
POGO	Partnership for Observations of the Global Ocean
POLENET	Polar Earth Observing Network
POP	Persistent Organic Pollutants
RiSCC	Regional Sensitivity to Climate Change in Antarctic Terrestrial and Limnetic Ecosystems
SALE	Subglacial Antarctic Lake Environments
SAM	Southern hemisphere Annular Mode
SASOCS	State of the Antarctic and Southern Ocean Climate System
SC-AGI	Standing Committee on Antarctic Geographic Information
SC-ATS	Standing Committee on the Antarctic Treaty System
SCOR	Scientific Committee on Oceanic Research
SCOSTEP	Scientific Committee on Solar Terrestrial Physics
SIGE	Sub-Ice Geological Exploration
SIMBA	Sea Ice Mass Balance of Antarctica
SIPEX	Sea Ice Physics and Ecosystem eXperiment
SOIP	Southern Ocean Implementation Panel
SOOS	Southern Ocean Observing System
SPPG	Scientific Programme Planning Group
SRP	Scientific Research Programme
SSG	Standing Scientific Group
SSG-GS	SSG on Geosciences
SSG-LS	SSG on Life Sciences
SSG-PS	SSG on Physical Sciences
SYSTCO	SYstem-Coupling (IPY Programme)
TAG	Thematic Action Group
VO	Virtual Observatory
WCRP	World Climate Research Programme

ANNEX G

Reports pursuant to Article III-2 of the Antarctic Treaty

Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels

Report to ATCM XXXI & CEP XI

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 Agreement entered into force on 1 February 2004. It has been developed under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

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, eleven Parties – all Antarctic Treaty Consultative Parties – have ratified ACAP: Argentina, Australia, Chile, Ecuador, France, New Zealand, Norway, Peru, South Africa, Spain and the United Kingdom. In addition Brazil has signed, but not yet ratified.

Because of the relatively small number of Parties to the Agreement, the resources available to ACAP are currently modest. A goal of existing Parties and the Interim Secretariat 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.

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.

These comprehensive and contemporary species' assessments will identify and prioritize areas where management action is required. It is expected that the species assessments will 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, which will be published on the ACAP website (*www.acap.aq*) to ensure their wide availability, will be updated regularly to ensure that the information they contain remains current. A relational database has been developed and will be used to update the species assessments as new information becomes available. A sample draft species assessment is attached for information.

Future meetings

The 4th Meeting of the ACAP Advisory Committee will take place between 22 and 25 August 2008 in Cape Town, South Africa. This meeting will 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.

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, in accordance with Article 12.2 of the Environmental Protocol to the Antarctic Treaty; 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. The recent workshop conducted by SCAR to review the population status and trends of this species in the Antarctic Treaty area concluded that "the present data and analysis do not support the designation of the southern giant petrel as a Specially Protected Species under Annex II to the Protocol on Environmental Protection". ACAP expresses its appreciation to the members of the workshop for undertaking this review. The ACAP Secretariat will refer the SCAR workshop report to the next meeting of the ACAP Advisory Committee in August 2008 for its consideration, including of the proposed standardised methodology for future counts. In the interim, the ACAP Secretariat supports the workshop's recommendations that:

- additional surveys or censuses of breeding sites and of fledging success be undertaken using a consistent methodology and on a regular basis to enable better estimates to be made of current trends in the southern giant petrel population (north and south of 60°S). The ACAP Secretariat also notes that this could assist in discerning trends between west and east Antarctic populations;
- further quantitative modelling work, and the collection of information needed for such modelling, be undertaken; and that
- sites that have not been censused more than 10 years should be revisited and an updated assessment made.

The ACAP Secretariat also supports the call in the SCAR workshop report for data owners who submitted population data to the workshop to also make those data available to the ACAP Advisory Committee. The Secretariat notes that, in most cases, these data owners are from countries which are Parties to the Antarctic Treaty and that their data would greatly facilitate the ACAP Advisory Committee's global population assessment of southern giant petrels. In doing so, the ACAP Secretariat gratefully acknowledges the support provided by SCAR in the provision of data on breeding sites to the ACAP Advisory Committee's Breeding Sites Working Group.

Finally, notwithstanding the workshop's advice and any subsequent decision about declaring Specially Protected Special status for southern giant petrels, the ACAP Secretariat notes with concern advice in the workshop report that:

> "Although the southern giant petrel varies regionally in its sensitivity to human disturbance, at several breeding sites disturbance by National Operators and by umanaged (*sic*) tourism/visitation has caused either emigration or breeding failure, and may continue doing so in the absence of any change in current procedures or in the absence of adherence to guidelines for particular areas (e.g. management plans for

ASMAs, or extant guidelines for the operation of aircraft near concentrations of birds) human disturbance."

The ACAP Secretariat encourages the CEP and the ATCM to consider whether additional protective measures are needed, including to improve protection of breeding habitat and reduce human disturbance by government and non-government activities.

Shy albatross
Thalassarche cauta

Albatros timide
Albatros de corona blanca

CRITICALLY ENDANGERED | ENDANGERED | VULNERABLE | **NEAR THREATENED** | LEAST CONCERN | NOT LISTED

Sometimes referred to as
White-capped albatross
Shy mollymawk
Tasmanian shy albatross

TAXONOMY

Order Procellariiformes
Family Diomedeidae
Genus *Thalassarche*
Species *T. cauta*

Originally a member of the polytypic species *Diomedea cauta* (Gould 1841), *T. cauta* was elevated to specific status when *Diomedea cauta* was placed in the genus *Thalassarche* [8] and split into four species: *T. cauta* (Shy albatross), *T. steadi* (White-capped albatross), *T. eremita* (Chatham albatross) and *T. salvini* (Salvin's albatross) [9]. The recognition of *T. cauta* and *T. steadi* remains controversial [2, 10] although following scrutiny of morphological, genetic and behavioural data the ACAP Taxonomy Working Group endorsed recognition of *T. cauta* and *T. steadi* as separate species in 2006 [11], and this recommendation was accepted at the Second Session of the Meeting of Parties.

CONSERVATION LISTINGS AND PLANS

International

- Agreement on the Conservation of Albatrosses and Petrels – Annex 1 [1]
- 2007 IUCN Red List of Threatened Species – Near Threatened [2]
- Convention on Migratory Species - Listed Species (Appendix II; as *Diomedea cauta*) [3]

National - Australia

- *Environmental Protection and Biodiversity Conservation Act 1999* (*EPBC ACT*) [4]
  - Listed Threatened Species – Vulnerable
  - Listed Migratory Species
  - Listed Marine Species
- Recovery Plan for Albatrosses and Petrels (2001) [5]
- Threat abatement plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (2006) [6]

Regional - Tasmania

- *Threatened Species Protection Act 1995*, Tasmania [7]
  - Listed Species - Vulnerable

BREEDING BIOLOGY

Thalassarche cauta is a colonial, annual breeding species; each breeding cycle lasts about 8 months. Most eggs are laid in September, hatch in December and the chicks fledge in April at about 4.5 months old (Table 1) [12].

Immature birds begin to return to their breeding colony at least 3 years after fledgling. Most *Thalassarche cauta* begin breeding annually, almost always in their natal colony, when at least 5 to 6 years old [13].

Table 1. *Breeding cycle of* T. cauta.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
At colonies	*											*
Egg laying												
Incubating												
Chick provisioning												

* birds are present year round at colonies but individuals are away for c. 6 weeks

BREEDING STATES

Table 2. *Distribution of the global* T. cauta *population among Parties to the Agreement which have jurisdiction over the breeding sites of ACAP listed species.*

	Argentina	Australia	Chile	Ecuador	France	New Zealand	South Africa	United Kingdom
Breeding pairs	-	100%	-	-	-	-	-	-

BREEDING SITES

Thalassarche cauta is an Australian breeding endemic (Table 2) with colonies on only three islands off Tasmania: Albatross Island, Pedra Branca and the Mewstone (Figure 1; Table 3). Unpublished data submitted to ACAP in 2007 estimated the total breeding population to be approximately 12,750 pairs (Table 3). The total population was estimated to be between 55,000 and 60,000 individuals in 1998 [14].

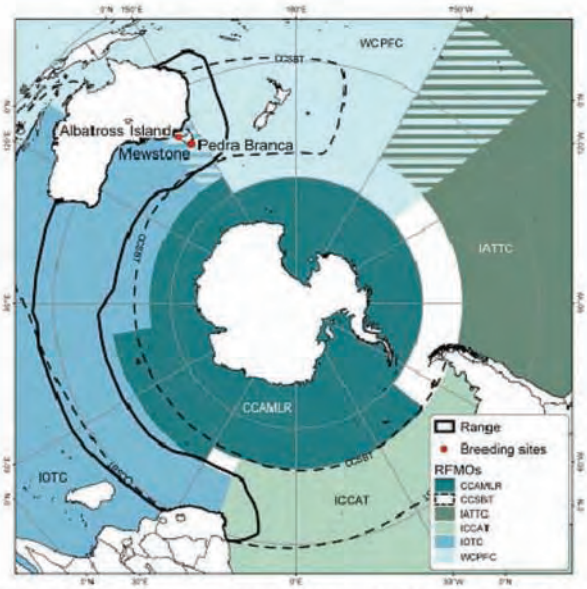


Figure 1. The approximate range of T. cauta *inferred from satellite tracking, band recoveries and genetic identification of fisheries bycatch (based on unpublished DPIW data and Abbott et al 2006 [30]). The boundaries of selected Regional Fisheries Management Organisations (RFMOs) are also shown.*

CCAMLR – Commission for the Conservation of Antarctic Marine Living Resources
CCSBT - Commission for the Conservation of Southern Bluefin Tuna
IATTC - Inter-American Tropical Tuna Commission
ICCAT - International Commission for the Conservation of Atlantic Tunas
IOTC - Indian Ocean Tuna Commission
WCPFC - Western and Central Pacific Fisheries Commission

Table 3. Monitoring methods and estimates of the population size (annual breeding pairs) for each breeding site. Table based on unpublished Tasmanian Department of Primary Industries and Water (DPIW) data submitted to ACAP in 2007.

Breeding site location	Jurisdiction	Years monitored	Monitoring method	Monitoring accuracy	Breeding pairs (last census)
Albatross Island 40° 23'S, 144° 39'E	Australia	1999-2007	A (100%)	High	5,017 (2007)
Mewstone 43° 44'S, 146° 22' E	Australia	1996	C (100%)	Unknown	c. 7,300 (1996)
Pedra Branca 43° 52' S, 146° 58' E	Australia	1984, 1991-2005	D (100%)	Medium	268 (1996)

CONSERVATION LISTINGS AND PLANS FOR THE BREEDING SITES

International

Mewstone and Pedra Branca

- Tasmanian Wilderness World Heritage Area [15]

Albatross Island

- None

National - Australia

Albatross Island, Mewstone and Pedra Branca

- Listed - Register of Critical Habitat (*EPBC Act*) [4]

Regional - Tasmania

Albatross Island

- Nature Reserve - *Nature Conservation Act 2002* (Tasmania) [16]
- Management Plan - Summary of Bass Strait Island Nature Reserves – (Draft October 2000) [17]

Mewstone and Pedra Branca

- Southwest National Park - *Nature Conservation Act 2002* (Tasmania) [16]
- Tasmanian Wilderness World Heritage Areas Management Plan 1999 [18]

POPULATION TRENDS

Albatross Island

When Europeans first sighted Albatross Island in the late 1700s, there were thought to be as many as 20,000 pairs of *T. cauta* breeding at that colony. By 1909 feather and egg collectors had reduced the colony to between 250 and 300 nests [19]. Censuses of pre-fledge chicks now suggest the population is increasing, with close to 3000 chicks fledging in 2004 (Figure 2). Trend analyses show that although the number of pre-fledging chicks on Albatross Island has been decreasing since 2004, pre-fledging chick production has actually increased by 2% [20, 21] to 3% [22] per year between 1981 and 2007 (Table 4). The number of breeding pairs on Albatross Island has also increased at a rate of approximately 3% [22] to 4% [20, 21] per year between 1999 and 2007 (Figure 3, Table 4). These data suggest the population on Albatross Island is increasing at a moderate rate ($p<0.01$) [22]. However, this colony is currently only 25% of its estimated original size.

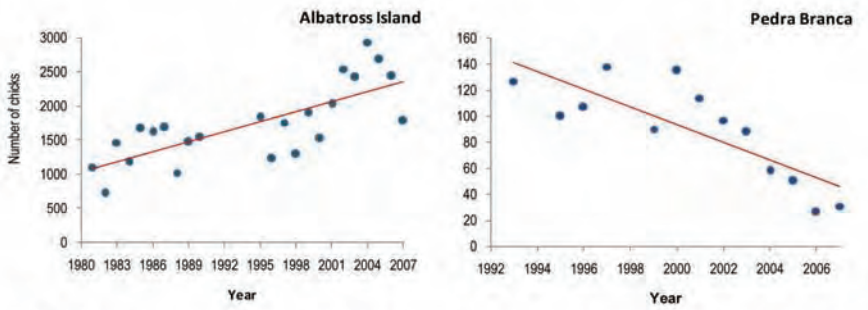


Figure 2. *Population counts of pre-fledge chicks with a simple linear regression fitted. Figures based on unpublished DPIW data submitted to ACAP in 2007, not to be used without data holder's permission. See text for assessment of population trends.*

Mewstone and Pedra Branca

The historical size of the populations on the Mewstone and Pedra Branca has not been reported so the population trend on these islands is less clear. The population on Pedra Branca may have always been small [5] but it appears competition for nesting space from Australasian gannets (*Morus serrator*) may steadily be reducing the number of fledglings produced on the island each year (Figure 2). Chick production on Pedra Branca dropped from over 100 to 31 between 1993 and 2007 (Figure 2), representing a decrease of approximately 9% [22] to 10% [20, 21] per year. This degree of change indicates that the Pedra Branca population is in steep decline ($p<0.01$) [22].

No trend data are available for the Mewstone population. In 1996 the total number of breeding pairs on the Mewstone was estimated to be approximately 7,300 (Table 3) but this estimate is of uncertain accuracy [23]. An aerial census method is being investigated to accurately determine the population size and trend.

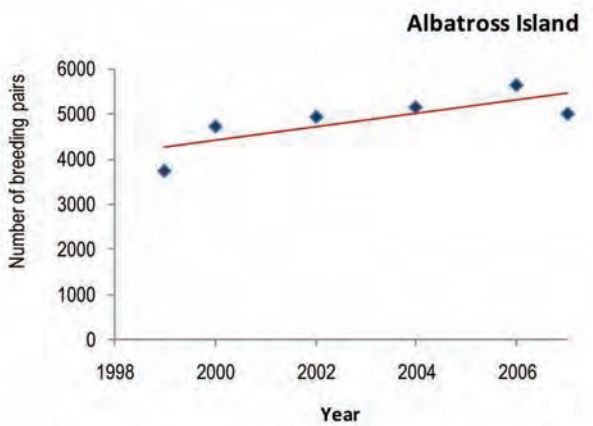


Figure 3. *Population counts of nesting adults with a simple linear regression fitted. Figure based on unpublished DPIW data, not to be used without data holder's permission. See text for assessment of population trends.*

Table 4. *Summary of population trend data for* T. cauta. *Table based on unpublished DPIW data submitted to ACAP in 2007.*

Breeding site	Current Monitoring	Trend Years	% average change per year (95% Confidence Interval) TRIM [22]	Wilcox 2006 [20, 21]	Trend
Albatross Island	Yes	1981 - 2007*	3.3 (2.9,3.7)#	1.8 (-11.1,14.8)#	Increasing
		1999 – 2007*	2.9 (2.8,3.0)^	3.7 (-8.8,16.2)^	
The Mewstone	Yes	n/a	n/a		Unknown
Pedra Branca	Yes	1993-2007*	-9.1 (-9.0,-9.2)#	-10.1 (-27.2,7.0)#	Declining

* Missing data: Albatross Island (chicks 1991 - 1994; breeding pairs 2001, 2003, 2005); Pedra Branca (1994, 1998)
# pre-fledge chicks
^ breeding pairs

Due to access and disturbance issues on the Mewstone and Pedra Branca, the breeding success and survival of juveniles and adults have only been studied in detail at Albatross Island. There, breeding success varies from 20% to 50% with an average of 37% of nests fledging a chick (Table 5). Analyses of juvenile and adult survival are in progress but adult survival is thought to be high [24].

Table 5. *Demographic data for the three* T. cauta *breeding sites. Table based on unpublished DPIW data submitted to ACAP in 2007.*

Breeding site	Mean breeding success (±SD; Years)	Mean juvenile survival	Mean adult survival
Albatross Island	37% (±7%; 1989-2007*)	In progress	In progress
The Mewstone	No data	No data	No data
Pedra Branca	No data	No data	No data

*Missing data: 1992-1993

BREEDING SITES: THREATS

Few threats exist at any of the breeding sites of *T. cauta* (Table 6) and all sites are legally protected.

Table 6. *Summary of known threats at the breeding sites of* T. cauta. *Table based on unpublished DPIW data submitted to the ACAP Breeding Sites Working Group in 2005.*

Breeding site	Human disturbance	Human take	Natural disaster	Parasite or Pathogen	Habitat loss or degradation	Predation by alien species	Contamination
Albatross Island	Low [a]	No	No	Low [c]	No [d]	No [d]	No [f]
The Mewstone	Low [a]	No	No	No	No [d]	No [d]	No [f]
Pedra Branca	Low [a]	No	Low [b]	No	High [e]	No [d]	No [f]

[a] Anthropogenic disturbance is essentially limited to activities associated with the conservation management of the islands.

[b] Pedra Branca is occasionally exposed to extreme wave action which is known to affect the breeding Australasian gannets (*Morus serrator*) on the island and may also impact the albatross population.

[c] In some years, symptoms of a pox virus infection are common on Albatross Island and this disease has been associated with chick mortality and hence depressed breeding success [25].

[d] There are no introduced species on Pedra Branca, while the European wasp is the only introduced species found on Mewstone. The two non-native vascular plant species on Albatross Island (*Catapodium marinum* currently in the process of being eradicated, and *Coprosma repens*, planned for eradication) have no impact on the albatross population.

[e] On Pedra Branca, Australasian gannets have been increasing by 4% a year since 1985 [26] and the increased competition for limited nesting space could be contributing to the sharp decline in *T. cauta* chick numbers over the last 15 years.

[f] *Thalassarche cauta* show relatively low levels of heavy metal contamination [27].

FORAGING ECOLOGY AND DIET

Thalassarche cauta usually forage singly and have been observed taking prey from the surface or occasionally making surface plunges or shallow dives. However, a study using time-depth recorders revealed *T. cauta* commonly plunge-dive within 3 m of the surface and can swim down to over 7 metres [28]. The diet of *T. cauta* has only been examined through food delivered to chicks at Albatross Island. There, fish (mostly Jack mackerel, *Trachurus declivis* and redbait, *Emmelichthys nitidus*) dominated the diet (89% wet mass), followed by cephalopods (mostly Gould's squid, *Nototodarus gouldi*) and small amounts of tunicates and crustaceans [28]. Evidence suggests *T. cauta* capture most prey during the day [29].

MARINE DISTRIBUTION

Understanding of the marine distribution of *T. cauta* is confounded by its similar appearance to other albatross species, particularly *T. steadi*. However, band recoveries, satellite-tracking data, and genetic identification of birds caught in fishing operations show that *T. cauta* are most frequently found around Tasmania and southern Australia [23; 30] but its range also extends to southern Africa (Figure 1). Satellite tracking data show *T. cauta* are less pelagic than many other albatross species, are usually found over the continental shelf, and regularly venture close to shore along the coasts of Tasmania and southern Australia [13, 31, 32] (Figure 4 & 5). Adult *T. cauta* remain close to their breeding colonies year-round [13, 31] whereas juvenile birds (predominantly from the Mewstone colony) have been recorded off southern Africa [23]. During breeding, adults forage close to their colonies, usually within 300kms, in waters less than 200m deep [13]. The only evidence that shy albatrosses occur in New Zealand is from a single band recovery from a bird that was banded at the Mewstone colony [23; 30].

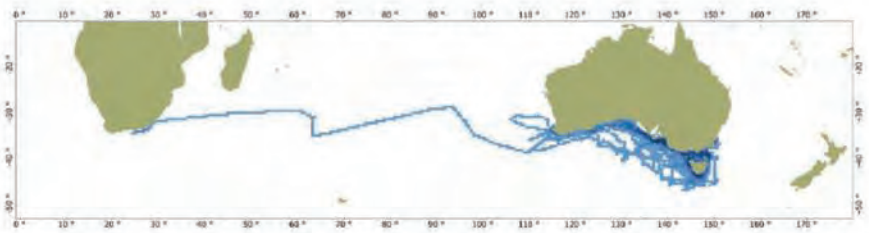


Figure 4. *Satellite-tracking data of juvenile and non-breeding adult* T. cauta *(Non-breeding adults N = 9; Juveniles N = 25; Total hours = 42,000. Unpublished DPIW data).*

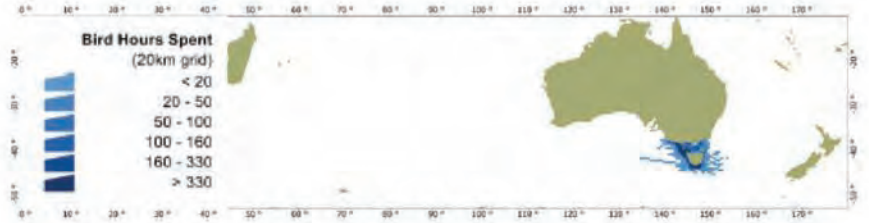


Figure 5. *Satellite-tracking data from breeding adult* T. cauta *(Number of individuals not known; Total hours = 37,600. Unpublished DPIW data).*

Satellite tracking data indicate that *T. cauta* overlap with four Regional Fisheries Management Organisations, but principally the CCSBT, IOTC and WCPFC. These RFMOs overlap in the region encompassing the breeding sites (Figure 1; Table 7). Australia and South Africa are the principal Range States for *T. cauta* (Figure 1; Table 7). It is also possible that birds transiting between the two countries forage in waters off the French Southern Territories (Figure 1) but this is unconfirmed.

Table 7. *Summary of the known ACAP Range States, non-ACAP Exclusive Economic Zones and Regional Fisheries Management Organisations that overlap with the marine distribution of* T. cauta.

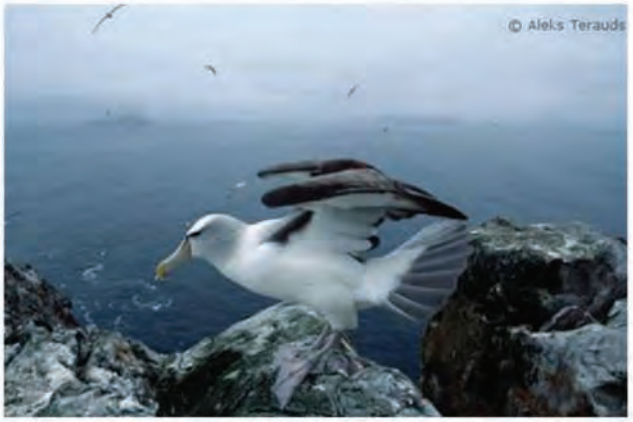
	Resident/ Breeding and feeding range	**Foraging range only**	**Few records - outside core foraging range**
Known ACAP Range States	Australia	South Africa	New Zealand
Exclusive Economic Zones of non-ACAP countries Regional		Namibia	
Fisheries Management Organisations*	WCPFC IOTC CCSBT		ICCAT

*See Figure 1 for list of acronyms

Shy albatross *Thalassarche cauta*

MARINE THREATS

Like most marine organisms, *T. cauta* are exposed to the threats of marine debris, plastic ingestion and pollution, but it is the incidental mortality of T. cauta in fishing operations that is thought to pose the greatest threat. *Thalassarche cauta* are known to be killed in longline fishing operations in Australian and South African waters [23; 30; 33; 34]. *Thalassarche cauta* juveniles that leave Australian waters and traverse the Indian Ocean to southern Africa (Figure 5) are particularly vulnerable to interactions with fishing operations. Both high seas longline fleets and South African longline and trawl fisheries are known to kill large numbers of albatrosses [34; 35]. Adult shy albatrosses largely remain within the Australian waters but, based on 2005 fishing effort profiles, their exposure to domestic longline fisheries is limited [13]. *Thalassarche cauta* are killed in Australian trawl fisheries but the magnitude of the impact is poorly understood.



KEY GAPS IN SPECIES ASSESSMENT

Thalassarche cauta is one of the more comprehensively studied albatross species. This is particularly the case for the Albatross Island population (comprising 40% of the total population) where the population trends, diet and behavioural ecology have all been the subject of investigation. The marine distribution is reasonably well known, with tracking studies being undertaken on both adults and juveniles from all three colonies [32]. However, the population size and trend for the Mewstone, the largest of the three breeding sites (c. 60% of the total population) remains a significant gap in the species' assessment, as do accurate estimates of adult and juvenile survival for all populations. Urgent assessment of management options in relation to the precarious status of the small and genetically distinct Pedra Branca population is required. The most significant threat to this species is mortality associated with fisheries operations. The impact of trawl fisheries in Australia and fishing operations in the Indian Ocean and off southern Africa is currently unknown.

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RECOMMENDED CITATION

Agreement on the Conservation of Albatrosses and Petrels. 2008. *Species assessments: Shy albatross.* Downloaded from http://www.acap.aq on 5 May 2008.

GLOSSARY AND NOTES

(i) **Years**.
The "split-year" system is used. Any count (whether breeding pairs or fledglings) made in the austral summer (e.g. of 1993/94) is reported as the second half of this split year (i.e. 1994).

The only species which present potential problems in this respect are *Diomedea* albatrosses, which lay in December-January, but whose fledglings do not depart until the following October-December. In order to keep records of each breeding season together, breeding counts from e.g. December 1993-January 1994 and productivity counts (of chicks/fledglings) of October-December 1994 are reported as 1994.

If a range of years is presented, it should be assumed that the monitoring was continuous during that time. If the years of monitoring are discontinuous, the actual years in which monitoring occurred are indicated.

(ii) Methods Rating Matrix (based on NZ rating system)

METHOD
A Counts of nesting adults (Errors here are detection errors (the probability of not detecting a bird despite its being present during a survey), the "nest-failure error" (the probability of not counting a nesting bird because the nest had failed prior to the survey, or had not laid at the time of the survey) and sampling error).
B Counts of chicks (Errors here are detection error, sampling and nest-failure error. The latter is probably harder to estimate later in the breeding season than during the incubation period, due to the tendency for egg- and chick-failures to show high interannual variability compared with breeding frequency within a species).
C Counts of nest sites (Errors here are detection error, sampling error and "occupancy error" (probability of counting a site or burrow as active despite it's not being used for nesting by birds during the season).
D Aerial-photo (Errors here are detection errors, nest-failure error, occupancy error and sampling error (error associated with counting sites from photographs), and "visual obstruction bias" - the obstruction of nest sites from view, always underestimating numbers).
E Ship- or ground- based photo (Errors here are detection error, nest-failure error, occupancy error, sampling error and "visual obstruction bias" (the obstruction of nest sites from view from low-angle photos, always underestimating numbers)
F Unknown
G Count of eggs in subsample population
H Count of chicks in subsample population and extrapolation (chicks x breeding success - no count of eggs)

RELIABILITY
1 Census with errors estimated
2 Distance-sampling of representative portions of colonies/sites with errors estimated
3 Survey of quadrats or transects of representative portions of colonies/sites with errors estimated
4 Survey of quadrats or transects without representative sampling but with errors estimated
5 Survey of quadrats or transects without representative sampling nor errors estimated
6 Unknown

(iii) Population Survey Accuracy
High Within 10% of stated figure;
Medium Within 50% of stated figure;
Low Within 100% of stated figure (eg coarsely assessed via area of occupancy and assumed density)
Unknown

(iv) Population Trend
Trend analyses were run in TRIM software using the linear trend model with stepwise selection of change points (missing values removed) with serial correlation taken into account but not overdispersion.

(v) Productivity (Breeding Success)
Defined as proportion of eggs that survive to chicks at/near time of fledging unless indicated otherwise

(vi) Juvenile Survival
defined as:
1 Survival to first return/resight;
2 Survival to x age (x specified), or
3 Survival to recruitment into breeding population
4 Other
5 Unknown

(vii) Threats
level of threat:
High a threat that is likely to be the main cause of a rapid or catastrophic decline, or reversal of recovery of a population, and lead to the local extinction of a species from the breeding area.
Medium a threat that is causing a gradual decline, or slowing of recovery of a population, at a known breeding area.
Low an existing threat that may cause decline or slow recovery of a population, or localised extinction in a breeding area.
Yes, No or Unknown available information is insufficient to assign threat level

(viii) Maps
"The distribution maps shown were created from platform terminal transmitter (PTT) and global-positioning system (GPS) loggers. The tracks were sampled at hourly intervals and then used to produce kernel density distributions, which have been simplified in the maps to show the 50%, 75% and 95% utilisation distributions (i.e. where the birds spend x% of their time). The full range (i.e. 100% utilisation distribution) is also shown. Note that the smoothing parameter used to create the kernel grids was 1 degree, so the full range will show the area within 1 degree of a track. In some cases the PTTs were duty-cycled: if the off cycle was more than 24 hours it was not assumed that the bird flew in a straight line between successive on cycles, resulting in isolated 'blobs' on the distribution maps. It is important to realise that these maps can only show where tracked birds were, and blank areas on the maps do not necessarily indicate an absence of the particular species".

Report of the Antarctic and Southern Ocean Coalition (ASOC)

1. Introduction

ASOC extends its appreciation to the Government and people of the Ukraine for hosting this ATCM in Kiev. We appreciate the invitation by ATCPs for ASOC to attend the meeting as an Expert, and look forward to contributing to substantive discussions across a wide range of matters that are critical in both the Antarctic Treaty Area, and for our planet as a whole. We hope for substantive outcomes as the Antarctic Treaty approaches its 50th anniversary.

With the Protocol of Environmental Protection to the Antarctic Treaty (the Protocol), Antarctic Treaty Parties committed themselves to the protection of the Antarctic environment, its dependent and associated ecosystems, and the intrinsic value of Antarctica as a fundamental consideration in the planning and conduct of Antarctic activities. The current status of the implementation of the Protocol is characterized by widely differing environmental standards in different Antarctic Treaty Parties. This gap is apparent in recent official inspection reports. Parties have been working on the implementation of the Protocol since 1991, so it is about time that a common understanding of what constitutes appropriate Protocol implementation standards emerges and is put into action by all Parties, both individually and collectively. ASOC contends that Parties should aim for the highest possible environmental standards rather than settling for the lowest common denominator.

An effective implementation of the letter and spirit of Protocol is critical to many of the issues that are important to the Antarctic region, notwithstanding, in many cases, the urgent need for additional actions and new instruments. This report outlines the key issues identified by ASOC that should be discussed at this ATCM, some of which are discussed in detail in ASOC's Information Papers.

2. ASOC Worldwide

ASOC has member groups located in most Antarctic Treaty Consultative Parties. ASOC campaigns are coordinated by a team of specialised representatives located in Argentina, Australia, Brazil, Chile, France, Japan, The Netherlands, New Zealand, Norway, Poland, South Korea, South Africa, 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.

3. Information Papers for ATCM XXXI

In addition to this report, ASOC has introduced 5 Information Papers:

- IP 41: A decade of Antarctic tourism: Status, change, and actions needed

Tourism in Antarctica over the past decade has been characterised by steep annual increases, diversification, and geographic expansion. ASOC fears that tourism is becoming entrenched as the main Antarctic activity in terms of scale and influence, resulting inevitably in the erosion of the intrinsic values of Antarctica and the primary roles of science and environmental protection in the Antarctic Treaty System. The particularly negative forms of tourism currently emerging, such as land based tourism, state sponsored tourism, and the use of massive general purpose ships, should

be constrained before their scale is beyond the capacity of the Antarctic Treaty System to control them. Given the growing complexity of tourism, there is not a single specific action that Antarctic Treaty Parties should take to address the problems raised by tourism. Rather, there is a range of measures needed, some of them urgently. Antarctic Treaty Parties need to develop a vision for tourism in the Antarctic and to agree on a tourism strategy, which can deliver the required instruments – both legally binding and hortatory.

ASOC urges Parties to adopt a Resolution stating that it does not see unending growth of Antarctic tourism as desirable or necessary, and to ensure that Measure 4 (2004) comes into force expeditiously, perhaps through "provisional application" analogous to Decision 2 (2003). Shipping standards in the Southern Ocean should be improved, in cooperation with IMO, and vessels above a certain size and/or carrying more than a specified number of persons prevented from operating within the Antarctic Treaty Area. The development of land based tourism infrastructure should be prevented, and infrastructure already used for tourism purposes should be subject of a critical review. The management of the most commonplace aspects of tourism should be improved by building on the main existing environmental management tools – EIA, monitoring, and management plans – with major improvements required in all three areas.

- IP 56: Impacts of Climate Change on Antarctic Ecosystems

IP 56 summarizes impacts on Antarctic ecosystems based on recent scientific research. Over the past 50 years, the Western Antarctic Peninsula has warmed more than four times faster than the global average, thus making it one of the most rapidly warming regions on the planet. Although some Antarctic areas are cooling, with organisms responding in accord with their adaptations to cold, dramatic changes to terrestrial and marine ecosystems are occurring in areas of warming. The southward retreat of the high Antarctic zone, and successful invasions of non-indigenous species to sub-Antarctic islands are among a continuing trend in biotic change brought by increasing human activity and increasing temperatures.

Climate change is no longer an issue limited to the developed and more populated parts of the world. The Consultative Parties to the Antarctic Treaty have committed themselves to provide comprehensive protection to the Antarctic environment and its dependent ecosystems under the Protocol. Therefore, and based on the precautionary principle, Consultative Parties should recognize the adverse impacts of climate change on Antarctica and the Southern Ocean and take proactive action within the framework of the Treaty System to contribute towards climate change mitigation and adaptation efforts.

- IP 57: Area Protection: Time for Action

IP 57 reviews the progress made in delivering the objectives of Annex V (Area protection and management) and proposes that the Antarctic Treaty Consultative Meeting (ATCM) move from discussion to concrete action. It suggests that the current rolling annex review process offers an opportunity both to consider the effectiveness of Annex V to deliver best practice area protection for the Antarctic Treaty Area, and to review the barriers to effective implementation of current requirements.

More than 40 years ago, SCAR proposed a number of conservation-oriented recommendations, including the '*designation of selected areas as sanctuaries within which no form of disturbance should be permitted'* to protect especially important or vulnerable species or habitats in the Antarctic. While 67 Antarctic Specially Protected Areas and 6 Antarctic Specially Managed Areas have since been designated, less than 0.1 % of the Antarctic Area has been afforded special protection, and many of the values identified in Annex V of the Environment Protocol remain under-represented. In particular Treaty Parties appear to have difficulty in declaring any large geographic areas, significant wilderness sites or meaningful marine areas for ASPA level protection.

The current annex review process provides an opportunity to focus on the underachievement of Annex V. ASOC suggests that the CEP be urgently tasked with providing the ATCM with advice on which values and types of sites listed in Annex V are not yet fully represented as designated Protected Areas, in addition to designations that no longer represent best-practice or are otherwise outdated, and best new approaches to address the needs of the 21st century. The review and amendment or modification, and any actual drafting of changes to Annex V, can then occur within the ATCM.

- IP 58: Antarctic Shipping

IP 58 addresses a range of vessel-related issues in the Southern Ocean. Traffic has increased significantly in Antarctic waters over the past decade both in terms of overall numbers and the different types of vessels operating in the area, which raises a number of intrinsic environmental and marine safety issues. This is no small matter in the relatively isolated Ross Sea region, which is seeing a growth in numbers of fishing vessels, but also significant increases in sea-ice extent and a reduction in length of the open-water season. While it might appear that there is considerable effort underway to improve the standards of shipping in the Antarctic region, not all proposed measures apply to all vessels operating in the region, and many international shipping instruments developed and adopted by the International Maritime Organization (IMO) over the past decades have not been ratified.

ASOC recommends that the ATCM consider the desirability of conducting an assessment of the threats resulting from the full range of vessels operating in the region, which could be done jointly by the ATCM and IMO; increase collaboration between national-level IMO and ATCM representatives on proposals to improve Antarctic shipping operations; urge all Parties to quickly ratify and implement existing shipping instruments; and ensure greater control by Flag and Port States over vessels operating in the Antarctic region to ensure strict compliance with the highest safety and environmental standards.

- IP 119: Designation of Marine Protected Areas within the Antarctic Treaty Area

IP 119 calls on the ATCM to breathe new life into the Marine Protected Area debate within the Antarctic Treaty System. It calls upon ATCM XXXI to reaffirm, via a Decision, its intention to create a representative and coherent network of MPAs as ASPAs and ASMAs. At least 30% of the marine area of the Antarctic Treaty Area should be placed within MPAs by 2018, with a representative series in place by 2012.

4. Other Important Issues for ATCM XXXI

4.1 Ratification of the Liability Annex

ASOC is concerned at the seeming lack of urgency among ATCPs for bringing Annex VI into force. At the present rate, it will be decades before this very limited first step in addressing the requirements of Articles 15 and 16 of the Protocol enters into force. That should be unacceptable to ATCPs. Accordingly, ASOC urges Parties to redouble their efforts to ratify the Annex, with the goal of bringing it into force during 2009, the 50th anniversary of the Antarctic Treaty. This should be the subject of a Resolution of the ATCM.

In addition, ASOC suggests that this ATCM promotes a joint intersessional contact group with CCAMLR and IMO colleagues to address the remaining sources of potential liability arising from misadventure in the Southern Ocean.

4.2 Biological Prospecting

ASOC is surprised by the lack of response by Parties to Recommendation 2 of Resolution 7 (2005), to annually provide information on the nature and extent of their biological prospecting activities in the Antarctic Treaty area. This is necessary in order to support informed discussion about what management arrangements might be necessary in order to regulate this commercial activity. While ASOC strongly supported an Intersessional Contact Group being established at the last ATCM to further these discussions, it was unhelpful to exclude from these discussions key sources of information, including UNEP, IUCN and ASOC. We note that while Japan insisted on this exclusion, it did not itself then participate in the ICG. We look forward to more inclusive discussions at this ATCM and in an ICG over the next year.

4.3 Accomplishing a Greener International Polar Year

The International Polar Year (IPY) 2007-8 has been an ambitious and important international scientific initiative. As noted last year, the cumulative effect of research activities associated with the IPY is leading to increased infrastructure and levels of human activity in the Antarctica, as well as greatly enhancing world-class scientific research. ASOC congratulates the scientists and scientific programmes that have been part of the IPY, which is generating crucial information about some of the earth's most pressing problems, first and foremost global climate change, and encourages participants to strive for the greenest possible IPY.

4.4 Managing Krill Fisheries

With the key role of krill in the Antarctic ecosystem, the growing pressure to fish for krill puts CCAMLR in a pivotal position. Not only does this force CCAMLR to build on its precautionary management strategy that balances ecosystem effects of fishing with commercial interests, but also requires collaboration with other bodies of the ATS. As acknowledged by Resolution 1 (2006), ATCPs have "prime responsibilities" for the protection and preservation of the Antarctic environment.[1] Parties to the Protocol have a clear responsibility to look after the entire Antarctic environment, which includes the marine environment and its living resources. Specifically, the Antarctic krill fishery overlaps with the foraging ranges of land-based, krill-dependent predators, directly impacting species that are under the protection of the Environment Protocol, such as penguins and seals, but also recovering cetacean populations under the IWC's jurisdiction.

ASOC supports the ATCM maintaining an active interest in CCAMLR's progress towards ecosystem-based management of the krill fishery, so as to ensure that krill fishing is conducted in a way that limits adverse impacts on the Antarctic environment and dependent and associated ecosystems, as well as avoiding detrimental changes in the distribution, abundance or productivity of species populations[2]. Specifically, the ATCM should pay attention to links between its work and that of CCAMLR over issues that relate to krill conservation, such as Marine Protected Areas (MPAs); biological prospecting;[3] and environmental monitoring and reporting.[4]

[1] This Resolution also recalls that CCAMLR is an integral part of the ATS. Consequently, CCAMLR's conservation principles need to be read in the light of Antarctic Treaty environmental goals, and especially of the Environment Protocol.

[2] Articles 3(2)(a) and 3(2)(b)(iv) of the Environment Protocol.

[3] Antarctic krill has served, either wholly or in part, as the basis for a significant percentage of patents on Antarctic organisms in recent years. As the ATCM progresses in developing policy responses to biological prospecting in Antarctica, close coordination and information exchange on this issue with CCAMLR will be become increasingly important.

[4] Synergies between CCAMLR's Ecosystem Monitoring Program and on-going efforts by the Committee for Environmental Protection in the area of environmental monitoring should be further explored, especially in view of the need to increase the understanding of climate change in Antarctica and its implications for CCAMLR and ATCPs responsibilities.

4.5 Addressing the Emerging Crisis in the Ross Sea

Recent information about the Ross Sea and its web of life makes sobering reading.[5] In spite of CCAMLR applying a precautionary approach to the TAC for the toothfish fishery in CCAMLR Areas 88.1 and 88.2, the first signs of ecosystem disruption are appearing in SSRU 88.1J. In McMurdo Sound and vicinity, after 40 years of fishing by scientists, catching 200-500 adult fish per season, it is now difficult to catch an adult fish. In addition, the numbers of fish-eating killer whales have dropped dramatically and the changed diet of penguins reflects disappearance of a trophic competitor. Thus, even without a CCAMLR-designed CEMP in place, decreasing the Ross Sea TAC for toothfish is warranted under the 'precautionary principle' that guides CCAMLR. Ironically, the CCAMLR Scientific Committee has requested CCAMLR scientists to recommend data sets and analytical procedures by which fishing effects can be separated from climate effects to marine ecosystems; the toothfish fishery is now compromising several of the longest, continuous biotic data sets available in the Southern Ocean and ones which heretofore had a 'pure' climate signal.

ASOC urges the ATCPs and CCAMLR Parties to take action now while there is still time, starting by agreeing on a Resolution at this ATCM declaring a pause in all commercial fishing activities in the Ross Sea for the next five years. This will require joint action with CCAMLR regarding fishing and with the IWC on whaling in the Whale Sanctuary.[6]

4.6 Protecting Lake Vostok

After a 6-year pause to consider the risks of environmental contamination, the Russian research team resumed drilling in December 2005. At 30th ATCM in 2007, Russia reported on a serious accident deep in the borehole when the drill froze and broke. After herculean efforts, the drilling gear was removed. Also in 2007, an international working group of experts recommended very different technology for penetration of these unique ecosystems in order to protect the environment to the maximum extent.[7]

This year Russia has committed itself once again to penetrating the Lake, in the 2008-09 season. ASOC argues that this is a profoundly unfortunate step, which endangers not only Lake Vostok itself but also risks harm to other linked subglacial systems.

By filing a final CEE with the Antarctic Treaty Consultative Meeting and Committee on Environmental Protection, Russia has completed all procedural requirements of the Protocol on Environmental Protection to the Antarctic Treaty. However, Parties are still obliged to meet their substantive commitments to protect the Antarctic environment. Notwithstanding its meeting the procedural obligations, Russia's proposed drilling into Lake Vostok raises very reasonable fears about it contaminating the lake. It is inappropriate to proceed in the face of such concerns, in the context of recent operating realities at the drilling site, enumerated in information papers tabled by Russia.

[5] Arthur L. DeVries, David G. Ainley and Grant Ballard, Decline of the Antarctic Toothfish and its Predators in McMurdo Sound and the Southern Ross Sea, and Recommendations for Restoration (paper under preparation for CCAMLR's WG-EMM). See also Addressing Uncertainty Over the Importance of Antarctic Toothfish As Prey of Seals And Whales in the Southern Ross Sea: A Review, David G. Ainley & Donald B. Siniff (paper under preparation for CCAMLR's WG-EMM).

[6] ASOC submits that it is timely for the IWC and the Antarctic Treaty System to address the realities facing the Southern Ocean Whale Sanctuary (SOWS), and to consider additional steps that will help protect the Sanctuary's integrity. These include developing a Management Plan for the Sanctuary, carrying out research needed to underpin a sound management approach, and for individual states to voluntarily cease any whaling activities. A significant shift by governments and international organizations is needed to fund the sorts of research needed. To this end, ASOC welcomes the call by the Government of Australia at the March 2008 IWC Intersessional Meeting in London for a cooperative, long-term, non-lethal international research effort, nominally called the Southern Ocean Whale Research Partnership. ASOC calls on Parties to the ATCM, CCAMLR, the IWC and other international bodies to adjust their collective marine research priorities for the Southern Ocean to take full account of the international community's long-term duty of care towards the Southern Ocean Whale Sanctuary and the whales in it.

[7] Exploration of Antarctic Subglacial Aquatic Environments: Environmental and Scientific Stewardship, *http://www.nap.edu/catalog/11886.html*

ASOC has urged Russia, through an appeal to the State Duma, to re-consider its plan to penetrate Lake Vostok, and to opt for a joint international project to penetrate a smaller and more isolated lake using the latest and safest technology first. In due course, the question of whether penetration of Lake Vostok is environmentally defensible, and if so, how best to do it, can be reconsidered.

5. Intersessional Activities

Since ATCM XXX ASOC has been monitoring various aspects of the implementation of the Madrid Protocol, and has participated in intersessional work including the review of management plans for ASPAs and ASMAs; discussions of the Deception Island Management Group; the special IAATO meeting on tourism in Miami and the regular IAATO meeting held in Uruguay; and the Intersessional Contact Group on Vessels. We have monitored the Intersessional Contact Group on biological prospecting, given that we were blocked from participating.

- ASOC participated in the conference convened in Miami by the International Association of Antarctica Tour Operators (IAATO) March 17-19, 2008. Despite the positive discussion and goodwill of participants, the conference highlighted that there is still not a single conceptual framework to address Antarctic tourism. As a result there is not much coherence on tourism discussions – rather, they tend to follow multiple forking paths such as environment/safety, tourism impacts/impacts from other operators, IAATO/non IAATO. Any perceived problems with tourism are almost always attributed to others – usually actors that are not present in the discussions: adventure tourists, national program staff, luxury yachts, etc. Further, many of the problems are passed off as resulting from misdemeanors rather than from day-to-day mainstream tourism, while in fact both types of conduct may have detrimental effects on the intrinsic values of Antarctica. ASOC submits that all stakeholders, particularly Parties and the industry, have a collective responsibility to bring clarity to discussions on Antarctic tourism so that the issues can be addressed effectively.
- ASOC provided detailed comments on management plans for ASPA 150, Ardley Island, Maxwell Bay, King George Island (Chile); and ASMA "X", South-west Anvers Island and Palmer Basin (United States).
- ASOC has been involved with the development of the Deception Island Antarctic Specially Managed Area (ASMA) since 2001, and participated in the discussions conducted by the Deception Island Management Group since ATCM XXX. Deception Island is a test case of the management of a site representative of outstanding Antarctic values as well as a popular place for tourism. ASOC considers that Spain has made valid comments on certain issues concerning the management of Deception Island that have so far not been considered – the sensitivity of certain landing sites, the effect of concentrated tourism on science values and the conduct of science, the need to review the number of people landing at sites that are now established tourism destinations, and issues of maritime security and impacts on the coastal environment. ASOC considers that these issues deserve further detailed discussion in Kiev and beyond.
- Since ATCM XXX ASOC participated actively in the Intersessional Contact Group on Vessels, including circulating the paper on vessel safety that we introduced to the Marine Environment Protection Committee of IMO at its most recent session in April and commenting on the other offerings and draft report. We look forward to this ICG being continued, and for much closer coordination between the ATCM and IMO bodies.
- ASOC is encouraged by the progress made on the five-year plan for the CEP, and hopes that this plan can be implemented in a timely and effective manner.

6. Concluding Remarks

The Antarctic Treaty Area is facing ever-increasing pressures from global climate change and a diversifying range of human activities within the region. Without effort by all ATCPs at both national and global levels, and full implementation on the ground of existing international agreements, the wilderness, scientific, biodiversity and other intrinsic values of the region will deteriorate rapidly.

At the same time, the steadily increasing human footprint from the uncoordinated growth of human activities needs strategic analysis and action at regional and local levels. Kiev presents an opportunity to vow to the world community that the ATCPs and other parts of the Antarctic Treaty System will deepen their common efforts to leave the Antarctic as a place of wonder and immense value for future generations of humans and wildlife.

Report of the International Association of Antarctica Tour Operators 2007-2008

Under Article III-2 of the Antarctic Treaty

Introduction

The International Association of Antarctica Tour Operators (IAATO) is pleased to present a report of its activities to ATCM XXXI (Antarctic Treaty Consultative Meeting) in Kyiv from June 2-13, 2008, 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 2007-2008 fiscal year, IAATO has had 108 Members. Appendix C to this report lists our 2007-2008 members and registered members for 2008-2009. 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 all its members. Comprehensive operational guidelines and procedures are stored in a members-only section of the website for use and downloading. Regular updates and information are shared with members throughout the year. 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.

Despite two vessel incidents (*M/S Explorer, M/V Fram*) in the 2007–2008 Antarctic season, and the increase in tourists, numbers of vessels and aircraft operations, the day-to-day operations ran smoothly. IAATO Members continued to support established practices that have proved to be effective and assures long term protection to the areas visited. Cooperation amongst vessel captains, officers, and expedition leaders was again impressive and pivotal to the season's success.

IAATO continues to focus its activities in several key areas. The following is a brief synopsis of organizational activities:

1. **Seasonal Instructions:** The *"Seasonal Instructions"* to operators provide a comprehensive resource of materials and guidelines adopted by both IAATO members and numerous ATCM's. In addition to the Instructions which are amended annually, additional updates are circulated to all operators throughout the season. The documents are mainly held in the "Members Only" section of the IAATO website. These IAATO-wide operational procedures effectively serve to manage Antarctic tourism.
2. **Ship Scheduler:** Additional computer programming enhancements were performed on the web-based IAATO Ship Scheduler program. This Ship Scheduler program allows for the pre-scheduling of visits to sites prior to the season, not only ensuring the presence of not more than one ship at one site at one time, but also implementing the requirements laid out under the 45 IAATO Site Guidelines and the 14 ATCM Site Guidelines. In addition to noting each vessels day to day schedule, the Ship Scheduler also stores a named contact for each voyage (the expedition leader) and departure dates and ports. Non-IAATO operators' schedules were also included where information was provided.

The Ship Scheduler online input closes prior to the season and a hard copy of the master schedule is then issued as a preplanning tool. Once the Antarctic operating season begins the vessels coordinate their landings in the field. IAATO members have coordinated their schedules consistently since 1991 and the online program has worked successfully for four years.

Access to the Ship Scheduler during the 2007-2008 season was also made available to 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, COMNAP and others at the beginning of the Antarctic season. This enabled ease in scheduling, transport of scientists, and coordination of logistics and contingency planning.

The Ship Scheduler allows for an effective exchange of information between operators, coordinated station visits in advance, ship itineraries, and 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 has proven to work extremely well: even being used as a multiyear preplanning tool for arrival and departure in port cities such as Ushuaia, Argentina, in order to spread out visits in port in order to avoid crowding.

Some adjustments to the Ship Scheduler have been made for the 2008-2009 season, with IAATO members inputting their schedules in July 2008.

3. **Vessel and Company Database:** IAATO's Vessel Database is a comprehensive web-based data program that keeps detailed information on all member-operated vessels and the companies who operate them. Each IAATO member is responsible for uploading all detailed vessel and company information. The primary reason for creating this on-line program is for effective management of the IAATO Emergency Contingency Plan and to maintain a database on company and vessel specifications. For example, a contact information sheet for all 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).

4. **Post Visit Report Database:** The computerized IAATO program for loading Post Visit Report Forms (PVRs) into a single electronic database provides a detailed record of activities coordinated by IAATO since the electronic database began in 2003. In addition, tourism statistics, compiled by the US National Science Foundation-dating back to 1989 can be found on the IAATO website at *www.iaato.org*. Each PVR is closely inspected before the data are downloaded in order to detect any potential errors. Successful programming efforts were made so that the forms reject incorrect data. The occasional, minor duplication that has occurred in past years has been corrected to avoid future discrepancies. The database has the capability to compile all company, visitor, vessel, and activity information as a means of tracking IAATO Members' activities. IAATO has posted over 60 different data reports per season on tourism statistics on its website as a matter of interest to the general public. The 2007-2008 data is estimated to be available in August 2008.

5. **Post Visit Report Form Update:** Minor improvements were made to the standard PVR prior to the start of the 2007-2008 season to account for the new site guidelines, clarification of activities and simpler input for operators. The PVR that had been formerly updated for the third time and approved at ATCM XXVIII Resolution 6 (2005) *Antarctic Post Visit Report Form* is still used.

   Endorsing the adoption of ATCM XXVIII Resolution 6 (2005) noted above, IAATO welcomes submission of non-IAATO member Post Visit Report Forms for inclusion in the database. Updated

versions are sent annually to the Antarctic Treaty Secretariat in October, distributed amongst Parties who issue permits or authorization to tour operators that are outside IAATO and posted on the open pages of *www.iaato.org*, under "Operational Procedures."

6. **Site Guidelines and Staff Interviews:** Six additional site guidelines were coordinated and written in conjunction with several Antarctic Treaty Parties. Interviews by IAATO personnel were conducted at the beginning of the season with field staff operating in the Antarctic Peninsula to assess the effectiveness of ATCM-endorsed Site Guidelines as well as the IAATO Site Guidelines and other operational questions.
7. **Observer Report Forms:** IAATO developed and implemented a new form for IAATO observers on cruise only vessels and updated its IAATO Observer Report form for all other vessel use.
8. **Safety and Conservation Briefing:** IAATO updated its PowerPoint presentation – "*Safety and Conservation Briefing.*" This is a PowerPoint presentation based on Recommendation XVIII-1 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.* In addition a specially adapted version for cruise only operations is under development.
9. **Introduced Species-"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. Several IAATO operators supported the "Aliens in Antarctica" program and assisted in the transport of the equipment needed to conduct this International Polar Year (IPY) study.
10. **Discovery of High Mortality Events:** IAATO updated its internal procedures for members regarding a potential discovery of high mortality events in both the Antarctic and sub-Antarctic Islands.
11. **Station Visits:** IAATO continued to closely pre-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.
12. **Science News Sheet:** During the IPY, IAATO will be providing its field staff with information on various research projects which could be of interest to both tourists and field personnel. The Science News Sheets provide a dedicated channel for this information and aims to support the IPY, promoting relations between the scientific and tourist community. The two "Science News Sheets" currently published can be found on the IAATO website, three more are planned for the 2008-09 season (in October, December and February). 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.
13. **Education and Outreach and Posters:** IAATO produced 4 large format size posters for its vessels and member company offices as educational tools entitled:

    - Guidance for Visitors to the Antarctic *http://www.iaato.org/docs/Visitor_Guidelines-1.pdf*
    - Marine Wildlife Watching Guidelines (Parts 1&2) *http://www.iaato.org/wildlife.html*
        - IAATO updated the Marine Wildlife Watching Guidelines during the 2007-08 season, receiving endorsement of the guidelines from the United Kingdom Sea Mammal Research Unit. The Guidelines have been redesigned into a booklet form, which can also separate into two parts for poster use.
    - IAATO Boot and Clothing Decontamination Guidelines for Small Boat Operations *http://www.iaato.org/docs/Boot_Washing07.pdf*

14. **Yacht Package:** The one-off Yacht Package which includes comprehensive operating information for non IAATO operators was further improved. One private operator purchased the package during the 2007-2008 season.
15. **Emergency Response:** Continued use was made of the IAATO Member Emergency Medical Evacuation Response (EMER) action plan. Eight IAATO medevacs were required during the 2007-2008 season.
16. **IAATO Exchange of Information:** Coordination with all new members in their start-up operations was provided and support offered to companies who have employed new staff within their home offices and in the field.
17. **Accreditation:** Work on the proposed IAATO Accreditation Scheme was continued throughout the year. Different options, including ISO certification and incorporation into the ISM process for vessels are being investigated by IAATO's Accreditation Committee, as alternatives to an IAATO based accreditation process.
18. **Staff Training and Certification Scheme:** IAATO's Field Staff Training and Certification Scheme have seen further progress. A Field Operations Manual is being developed for the 2008-2009 season. This manual will form the course material. In addition a field staff training and on-line assessment program is being developed and will be piloted during the 2008-2009 season.

1. IAATO Membership and Activities

IAATO Member offices are located in 15 countries and include: Argentina, Australia, Belgium, Canada, Chile, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, United Kingdom and its Overseas Territories, and the United States. A Membership Directory can be found on the IAATO website at *www.iaato.org*. IAATO's fiscal year is from July 1 to June 30 of the next year, which is also consistent with the Antarctic operating season.

1.2. Membership Changes and Levels during the 2007-2008 Season

IAATO experienced a 30 % increase in membership from July 1, 2007 to May 2, 2008. The actual number of Member companies increased from 83 to 108. Three companies have withdrawn their membership for 2008-2009 (2 are no longer in business and one is not operating in Antarctica) although 3 new companies have submitted an application for consideration to join.

The breakdown of the 101 IAATO companies that were members from July 1-March 30, 2008 (during the Antarctic operating season) includes the following categories:

Full Members: 38 Full Members 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.

Provisional Members: 13 Provisional Members included ship operators, small vessel/yacht operators, and companies that charter vessels from existing Members.

Associate Members: 50 Members associated with Antarctic tourism in various forms.

Further elaboration of these categories, levels of membership and names of each of the companies can be found in section 1.3 of this paper and in Appendix C.

1.3 Membership Categories

During the 2007-2008 period (July1, 2007 - March 30, 2008) IAATO Members were grouped into each of the following categories:

1. Organizers of expedition ships that carry less than 200 passengers or small sailing vessels that carry less than 12 passengers. The limit of 100 passengers ashore at one site at one time applies. (37 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. (6 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. (6 Members)
4. Organizers of land-based operations. (1 Member)
5. Organizers of air operations with over-flights only. (1 Member)
6. Organizers of air/cruise operations. (1 Member)
7. Travel Companies in support of Antarctic tourism. (49 Members)

*Note: Full, Provisional, and Probational status occurred within categories 1-7.

1.4. Bylaws Changes

During the 2007-2008 season, IAATO operated essentially under two sets of Bylaws: New Bylaws had been agreed at the Annual Meeting in 2007 in Hobart, Tasmania, but did not become effective until April 28, 2008. A short summary of the changes within the IAATO Bylaws is referenced below. IAATO Bylaws and Objectives can be found on line at *www.iaato.org* under 'About IAATO.' The latest update is April 29, 2008. See Appendix C for a list of members and their various categories of membership.

The most notable changes are as follows:

- Full Members are now referred to as "Members". Members are experienced organizers that operate travel programs to the Antarctic, have been an Associate Member for at least one year and have fulfilled the Bylaw requirements in Article III, Sections B and C, and Article X, as applicable. Only "Members" have voting privileges.
- Associate Members are defined as one of the following:
    1. Organizers that operate travel programs to Antarctica and are requesting Member status in IAATO. Once the conditions in Article III, Sections B and C, and Article X of the IAATO Bylaws are met, as applicable, these organizers can apply to become Members. (B1)
    2. Tour operators, travel agents or organizers that do not operate Antarctic tour programs themselves, but book into other Members' programs. (B2)
- Affiliate Members are companies, organizations or individuals with an interest in supporting Antarctic tourism and the IAATO objectives.
- Provisional and Probational Members are no longer levels of membership or categories within IAATO. However companies can be put on "probation" if necessary.
- Companies are eligible to apply throughout the year and the restriction on applications annually and quarterly has been removed.
- For additional information, see *www.iaato.org- About IAATO* and click under *Bylaws* or *Join IAATO*. IAATO is in the process of reorganizing the website to take into account the amendments in the Bylaws. We appreciate your understanding through the transitional period.

2. 2007-2008 Statistics

2.1 Overview of Tourist Numbers

IAATO endeavors to include all tourist numbers from both IAATO operators and non-IAATO operators where the information is readily available and verifiable. From October 2007 to April 2008, estimated numbers of different types of tourism have been determined as follows:

- 31,941 passengers/tourists landed in the Antarctic on 50 commercially organized expedition vessels (IAATO and non IAATO),
- 257 passengers/tourists participated in an air/cruise program,
- 438 air/land-based tourists flew, skied, climbed, camped or participated in multi-day or overnight trips to Antarctica,
- 13,015 passengers/tourists travelled on 7 cruise only/ large vessels (IAATO and non IAATO),
- 613 passengers/tourists participated in air over-flights to Antarctica,
- 13 Sailing or Motor Yachts operated outside of IAATO,*
- 3 air/land-based companies operated outside of IAATO.*

A total of 70 vessels ranging in size from 6 passengers to 2500 passengers operated in the Antarctic during the 2007-2008 season.

* To date IAATO has received little or no information and no Post Visit Report Forms on the activities from these operators.

For detailed information and an overview of the Antarctic tourism industry see the ATCM XXXI IP 85 *IAATO Overview of Antarctic Tourism 2007-2008 Antarctic Season and Preliminary Estimates for the 2008-2009 Season.*

3. Participation in Organized Meetings during 2007-2008 and IAATO 18th and 19th Annual Meeting

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 Annual Meetings

Since ATCM XXX (2007), IAATO has held 2 annual meetings.

IAATO held its 18th Annual Meeting at the CCAMLR Secretariat office in Hobart, Tasmania, June 25-29, 2007. IAATO appreciated the participation of 134 people including IAATO Members, governments, observers and expert groups to the ATCM and non-governmental organizations. The following governments, organizations and others were represented at the meeting: Antarctic Institute of Uruguay, Umweltbundesamt (Federal Environmental Agency-Germany), Australian Antarctic Division, United Kingdom Foreign and Commonwealth Office, British Antarctic Survey, United Kingdom Overseas Territory, United Kingdom Antarctic Heritage Trust, New Zealand Antarctic Heritage Trust, Royal Australian Hydrography, Quarantine Tasmania, Macquarie-Tasmanian Parks and Wildlife, South Georgia Heritage Trust, Tourism Tasmania, International Polar Year (IPY) organizers, Birdlife International, COMNAP, CCAMLR, and ACAP.

Notable action points from this meeting included discussions on membership growth, the future of tourism and IAATO, marine related issues, staff training, participation by members in IPY projects

such as CAML and Aliens in Antarctica, IAATO's Wilderness Etiquette Policy, IAATO Recommendation on Outboard Engine Use, and Waste Management Policy (See Appendix D). IAATO's 2007 adopted waste management policy exceeds MARPOL requirements.

IAATO held its 19th Annual Meeting in Punta del Este, Uruguay, April 28-May 2, 2008. More than 110 participants came from IAATO companies, plus a number of Government representatives from Germany, Peru, and Uruguay. Additional participants came from the Port of Ushuaia, Argentina and the United Kingdom. The focus of this meeting was to address IAATO's internal requirements given its notable membership growth during the 2007-2008 season, the changes in IAATO Bylaws, restructuring proposals, marine issues, accreditation, and site guidelines. The agenda for this meeting is on the IAATO website.

Typically at each of IAATO's annual meetings, the topics discussed include internal structure of the organization, membership applications, yearly operating procedures, seasonal incidents, and site guidelines, among other timely subjects. Policies are agreed and or developed or revisited, and obligations set forth by the Antarctic Treaty System are addressed and how they may affect IAATO operators. Information can be found on *www.iaato.org* under Information Papers.

IAATO's 20th Annual Meeting is tentatively proposed for mid-late June, 2009 in Torino, Italy. Interested parties that would like to attend or participate should contact IAATO at *iaato@iaato.org*.

IAATO sent a representative to the COMNAP XIX Meeting in Washington D.C. 2007. IAATO appreciates the opportunity to work cooperatively with COMNAP where mutual interests lie in both air and ship operations. IAATO supports further cooperation between operators to ensure there is little or no disruption to science or station activities.

IAATO was pleased to send a participant to the International Hydrographic Organization/ Hydrographic Commission on Antarctica (IHO/HCA) Meeting in Buenos Aires, Argentina in October 2007. IAATO strongly supports and encourages the work of the HCA. Safety and navigation are extremely important concerns to vessel operators and the productive work by this group is invaluable for all ship operators. This is the 5th year where IAATO has sent a representative to this meeting and appreciates the cooperative working relationship with the HCA.

SCAR's Southern Ocean Observing System (SOOS) meeting in Germany in October 2007 was attended by an IAATO representative. IAATO appreciates the interaction with SCAR and the invitation to join meetings of such importance.

IAATO was pleased to participate in the meeting organized by the United Kingdom at Wilton Park, United Kingdom in October 2007. Meetings of this nature are extremely valuable and enable interesting and creative discussions on current issues on tourism.

IAATO organized a 2-day meeting for IAATO Marine Operators, held in Los Angeles, California (February 4-5, 2008), to review the implications and lessons to be learned from the maritime incidents that occurred during the last two seasons. Twenty-one participants attended, including IAATO members and invited experts. See ATCM XXXI IP 81 *Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations and Safety* for the conclusions and action points.

IAATO sent a representative to the International Maritime Organization (IMO) Design and Equipment Subcommittee 51st meeting in February 2008 in Bonn, Germany. IAATO participated as a member of the Cruise Lines International Organization (CLIA) delegation.

IAATO hosted a 3-day Meeting on the *Future of Antarctic Tourism* in Miami, Florida, March 17-19, 2008. Thirty-nine participants attended, including nine governments, IAATO members, ASOC and invited experts. See ATCM XXXI IP 19 *Chairman's Report from the Miami Meeting (March 17-19, 2008) on Antarctic Tourism.*

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

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. In addition there are over 150 files hosted on the IAATO website per season providing Members with appropriate guidelines and standard operating procedures in a single, easily accessible database.

IAATO's comprehensive directory of Vessel Call Data and the Master Ship Schedules are shared with COMNAP and other government offices to encourage improved communication and operational coordination. COMNAP's MINIATOM is an extremely useful tool for tour operators trying to contact stations or government vessels. As IAATO vessels transport numerous scientists and support personnel to Antarctica each year, in addition to requesting tourist visits to stations, it is helpful when station contact information is up-to-date for communication, planning and emergency purposes.

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 monitors agreed-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.

Details on IAATO's Emergency Medical Evacuation Response plan (EMER) have been presented at previous ATCM's. IAATO has had an effective plan in place since 1998.

5. Environmental Impact Assessment and Advance Notification

All IAATO members are required to submit either Environmental Impact Assessments (EIA's), Advance Notification and or operational documents that substitute for EIA's to their national authorities pending each countries legal processes. Not all governments require EIA's or yearly updates. IAATO is aware of operators this year that have neither submitted Environmental Impact Assessments, nor filed Advance Notification or Post Visit Reports.

A comparison of the various EIA's and the level of EIA's that individual operators are required to submit to their respective governments reflect some notable inconsistencies amongst documents and requirements. IAATO, however, endeavors to bridge gaps in documentation for ship-based Members, in particular to ensure there are mitigation measures and procedures in place to avoid environmental impacts.

As noted in all previous reports to the ATCM's, IAATO remains concerned about non-IAATO operator activities. The Association urges Contracting Parties to ensure that obligations of the Environmental Protocol are being met, Environmental Impact Assessments are being submitted, and detailed mitigation measures are included. IAATO is concerned that once the paperwork process is completed by non-IAATO operators to their respective governments (if at all), there is no supervision of management or follow-up to ensure that non-IAATO operators are following the requirements of activities specified by the Treaty Parties.

In the Environmental Impact Assessments of some non-IAATO operators, it is noticed that IAATO's documents are frequently referenced. IAATO encourages Parties to contact IAATO for verification when these occasions occur. It is not possible for non-IAATO operators to adhere to IAATO's Bylaws or have the breadth or understanding of the numerous operating strategies that IAATO has developed over the years. This is a service that IAATO provides for its member's operations.

6. Procedures to Prevent the Introduction of Alien Organisms

For the past 8 seasons, IAATO's Boot and Clothing Decontamination Recommended Guidelines and Translocation of Diseases Protocol have been in place and have proven to be effective.

7. Reporting of Tourism and Non-governmental Activities and Data Base

As noted previously in this paper, IAATO requires its Members to submit the ATCM's approved Post Visit Reports on conclusion of their activities.

IAATO continues to support the use of this single form, which reduces the burden of paperwork and facilitates the study of the scope, frequency and intensity of tourist activities. IAATO would like to encourage Parties to send IAATO a copy of any forms received from non-IAATO operators in order for the data to be incorporated into IAATO's "Overview of Tourism" and the IAATO tourism database. This will provide for greater transparency of all tourist activities and will further the ability to address cumulative impact issues. IAATO's database will be able to access information from these forms and analyze, if necessary, statistics on site use and visitation. IAATO would welcome information on the16+ non-IAATO operators who worked in Antarctica in the 2007-2008 season.

8. Implementation of Recommendation XVIII-1 (Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic and Guidance for Visitors to the Antarctic) and Other Guidelines

Recommendation XVIII-1, "Guidance for Those Organising and Conducting Tourism and Non-governmental Activities in the Antarctic", is provided to all Members in order to inform them of key obligations and procedures to be followed.

IAATO urges Parties to consider formally adopting Recommendation XVIII-1 for both Visitors and Tour Organizers.

IAATO is very concerned about tourists traveling on non-IAATO-operated vessels visiting the Antarctic who may not be aware of the Environmental Protocol and its obligations. As tourism increases, especially in the Antarctic Peninsula region, every visitor and operator will need to be responsible for even greater care of the landing sites and the marine environment.

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 receives 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.

Guidelines are available on the open pages on the IAATO website in English, Chinese (Mandarin), Dutch, French, German, Italian, Japanese, Russian and Spanish.

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 XXXI IP 83 *Regulation of Antarctic Tourism—A Marine Perspective.*

9. Emergency Response Action and Contingency Planning

At IAATO's 18th General Meeting (Hobart, 2007) the IAATO Emergency Contingency Plan was reviewed. No changes were made, as the plan still proved to be effective during the 2007-2008 season. Following the incident involving the *M/S Explorer* the IAATO Emergency Contingency Plan is undergoing a further assessment and review.

The IAATO EMER plan has been in place for at least the past eleven seasons in order to reduce the need to impact scientific stations in the Antarctic Peninsula with tourism-related medical problems. A standard medical information checklist is available for Members and new Members in order to ensure adequate medical supplies are available on board vessels.

Marine Incidents 2007-2008: Following the incident involving *M/V Fram* and loss of the *M/S Explorer*, IAATO is committed to ensuring that effective lessons can be learned from these incidents which will serve to enhance safety for all vessels operating in Antarctic waters. IAATO welcomes the synopsis produced by the Republic of Liberia, Bureau of Maritime Affairs which provides information on issues being considered under the investigation. IAATO notes that this synopsis addressed to the Antarctic Treaty Secretariat is not a preliminary report, nor does it bind the Liberian Administration to a final report. Additional information regarding the events surrounding both the loss of *M/S Explorer* and the incident involving *M/V Fram* can be found on *www.iaato.org.*

With respect to the loss of *M/S Explorer*, and understanding that consideration of many issues will need to be deferred until after the final report from the Republic of Liberia, Bureau of Maritime Affairs has been completed, IAATO has confined its discussions of the incident to issues related to the IAATO-wide response and consideration of potential enhancements to current management practices. It is recognized that while the IAATO Emergency Contingency Plan worked exceptionally well, there are always important lessons which can be learned from any such event. To this end, a meeting of IAATO marine operators took place in February, 2008 to discuss the IAATO response to the *M/S Explorer* incident and other issues related to vessel operations and safety. The report and outcome for this meeting are detailed in ATCM XXXI IP 81 *Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations, Safety and Related Issues* which summarizes the immediate steps which have been taken and the longer term steps which are under consideration. In addition to these deliberations, IAATO's Marine Committee will be analyzing in detail the final investigation report from the Liberian Administration, once completed, with the intention of assessing any further steps which may be taken to enhance vessel safety.

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 2007-2008 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. A partial list of scientific support is included as Appendix B.

Specific requests for logistic or other support can be made directly with Members or via the IAATO Secretariat. For a complete Membership directory, please refer to the IAATO web site at *www.iaato.org*.

11. Conservation Research, Academic and Scientific Support

Members and their passengers continued the tradition of direct financial contributions to many organizations active in Antarctica. Appendix A provides a partial list of donations received thus far, but updates continue to be received.

12. Observers On Board Member Vessels

IAATO requires Provisional and Probational Members to carry an observer before they are eligible to apply for Full Membership. During the 2007-2008 season IAATO appointed 4 observers to sail on Provisional Member-operated vessels. There were no Probational 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 had updated the "Checklist for Observers" form (version October 2007) for use last season. In addition, ATCM XIX Resolution 5 (1995), Antarctic Treaty Inspection Checklists, is also provided to the appointed observer. IAATO-operated vessels have been carrying observers since 1991. IAATO believes that checklists provide consistency with regard to reporting procedures and that the checklists are also important in that the operator knows what is being inspected.

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 ICG's, other intersessional meetings etc.

The following provided assistance and operational guidelines to IAATO during the 2007-2008 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.

- 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, Russia, and Uruguay, United Kingdom (HMS *Endurance)*: for assisting by air, land and sea with regard to the *M/S Explorer* incident.

Appendices

A. Partial list of Donations for 2007-2008

B. Partial List of Science Support and Transport by IAATO Vessels in 2007-08

C. IAATO Membership List

D. Agreements from IAATO's 18th Annual Meeting

Appendix A

2007-2008 Partial List of Donations

The following chart is a partial list of donations that were given by Members or raised by expedition staff and passengers on board vessels during the season. It is known that passengers make individual contributions to various organizations independent of organized campaigns. Various companies have reported funds raised but are in the process of allocating monies or prefer not to be listed here. We are still receiving updates on funds raised and transport.

IAATO Member	Birdlife International-Albatross	Save the Albatross-Australia	Antarctic Heritage Trust and Donation to Ross Sea Huts	Other
Abercrombie & Kent	$9,280 USD			$1,640 USD Allied Whale
Aurora Expeditions			$AUD 6,300	$AUD 19,000 Mawson's Hut Foundation. £500 Rockhopper Workshop
Celebrity Cruises/RCCL				£5000 Rockhopper Workshop
Elegant Cruises		$11,000 USD		
Hapag Lloyd Kreuzfahrten		€ 35,000	€6,902	€2,950 for South Georgia Heritage Trust, €2,100 Antarctic Research Trust, Switzerland £500 Rockhopper Workshop
Lindblad Expeditions				Oceanites USD $105,335
G.A.P Adventures		$8,689 USD		
Heritage Expeditions			$2,400 USD	Sealion Reasearch (Dr Martin Cawthorn) TBA
Hurtigruten ASA		*see note		*A total $30,166 USD was raised to be divided between Save the Albatross, South Georgia Heritage Trust and New Island Trust.
Cheesemans' Ecology Safaris		$2,882 USD		$3,332 American Bird Conservancy. $65 USD South Georgia Heritage Trust.
Peregrine Shipping		*see note		*$151,412 USD raised to Peregrine's *"Protect our Poles Fund"*. These funds are being dispersed to albatross related projects.
Quark Expeditions		$9,572 USD		$10,000 USD to South Georgia Heritage Trust, James Caird III replica
Polar Star Expeditions		$5,575 USD		
Saga Shipping Company			UK Antarctic Heritage Trust £6450.05 (revenue from onboard sales of AHT merchandise).	£14,502.15 for Hand in Hand Trust.
Fathom Expeditions				Conservation Alliance $500 USD
Pelagic Expeditions				Oceanites $250 USD

The amounts do not include all vessels or private donations that tourists have made once at home. Many ships provide their passengers with a list of organizations worthy of donations. In addition other organizations benefit indirectly from passengers donations. The information included above is based on what was provided to the IAATO Secretariat.

Total Amount Reported as of May 2, 2008

Total Amount in USD= Approximately $510,000 USD (pending if and when it was converted to USD).

Break down by currency include:

USD 352,098

Australian dollars 25,300

Euros 46,592

British Pounds 26,452

Appendix B

Partial list of Science Support and Transport by IAATO Operators in 2007-2008

The following is a partial list of support. As always there is in-kind support that is unreported but is an important part of cooperation between the tourist industry and the National Programs and Sub Antarctic Islands facilities.

Member	Program or Personnel Assisted
Abercrombie & Kent	20 in total. 3 BAS personnel from Stanley to Grytviken 2 UKAHT personnel from Lockroy to Ushuaia 1 USAP personnel from Ushuaia to Palmer St. 2 USAP personnel from Palmer St. to Ushuaia 5 SGHT personnel from Ushuaia to S. Georgia 1 BAS researcher from Stanley to Grytviken 3 UKAHT personnel from Lockroy to Ushuaia 3 SGHT personnel from Grytviken to Stanley **See Acronym list below
Hapag Lloyd Kreuzfahrten	Transported three persons from New Island to Stanley. Transported two persons from Bellingshausen to Ushuaia.
Heritage Expeditions	Transport provided for 5 members of Tasmanian National Parks and Wildlife/Australian Antarctic Division & 4 members from the Department of Conservation. Provided transport for engine spares for a ship in the Ross Sea.
Lindblad Expeditions	Oceanites scientists are funded assisted and transported on all departures in the Antarctic. Ten persons in total were carried during the season.
Hurtigruten ASA	1 personnel Polish Antarctic Institute Ushuaia-Arctowski 5 personnel Polish Antarctic Institute Arctowski-Ushuaia 1 BAS scientist from King Edward Point (South Georgia) to Stanley 4 Norwegian personnel, South Georgia Heritage Trust Husvik-Stanley 2 Oceanites personnel Petermann Island-Ushuaia
Peregrine Shipping	7 members of Inspire/ 2041 and their gear from Ushuaia to Bellingshausen Station. Transported 2 Oceanites scientists and their equipment from Ushuaia to Petermann Island. 2 vessels participated in the “Aliens in Antarctica Program”.
Polar Star Expeditions	One BAS contractor from Grytviken to Stanley. Norwegian Polar Institute observer on board for PSE19NOV2007.
Quark Expeditions	One personnel transported from South Georgia to Stanley BBC videographer transferred from Ushuaia to Pleneau Island, to rendezvous with the yacht ‘Golden Fleece’. One member of base personnel from Arctowski to Ushuaia.
Fathom Expeditions	One berth provided for a US marine mammal scientist for cetacean research in affiliation with Dr Robert Williams and his field work.

Member	Program or Personnel Assisted
Aurora Expeditions	Re-supplied the Polish station of Arctowski for the Polish Academy of Science. At end of season returned to Arctowski to collect several scientists and equipment, returning them afterward to Poland. 9 scientists from the Australian Antarctic Division taken to Macquarie Island. One member of the Department of Conservation New Zealand transported from Sandy Bay, Enderby Island. One scientist from the Australian Antarctic Division from Bluff to Macquarie Island. One scientist returned to Hobart.
Cheesemans' Ecology Safaris	2 BAS geologists from the Barff Peninsula, South Georgia to Grytviken and back British Admiralty Marine Surveyors required assistance with their landing craft at Whalers Bay.
Oceanwide Expeditions	One member of BAS personnel from Stanley to Grytviken/Bird Island.
Hansa Kreuzfahrten GmbH	16 IPY-students from Bellingshausen Station, King George Island to Punta Arenas, Chile. 2 Scientists from University of Greifswald one voyage
Plantours and Partner GmbH	1 Argentine & 3 Russian scientists transported from Punta Arenas to Bellingshausen Station, King George Island.
Saga Shipping	Transported 6 large propane gas cylinders from Southampton to Port Lockroy, at the request of UKAHT.

Adventure Network International/Antarctic Logistics and Expeditions Science Support

Organization	No Aircraft	No. Visits	No. Personnel / Crew	Notes
BAS	6	7	11 / 9	Logistic support Lake Ellsworth Project; fuelling; accommodation; ITN Film crew
CECS	1		15 / 2	Science Traverse / Recovery Lakes radar
DGAC/International Police	1		2	Visit Patriot Hills
Edinburgh University / NERC		1	2	Shackleton Range Geological Survey
Ejército de Chile (Chilean Army)		1	3	Repair/Remove Army vehicles
FACh		1	2	Visit to Parodi Base
KORDI		1	5	Meteorite survey
NSF	7	9	13 / 41	LC-130 cargo flight; G-079 Science Group; Twin Otter support

Acronyms

BAS	British Antarctic Survey (United Kingdom)
CECS	Centro de Estudios Cientificos (Chile)
DGAC	Dirección General de Aeronáutica Civil de Chile
Ejército de Chile	Chilean Army
FACh	Fuerza Aérea de Chile
KORDI	Korean Polar Institute
NSF	National Science Foundation (United States)
NERC	National Environmental Research Council (United Kingdom)
SGHT	South Georgia Heritage Trust
UKAHT	United Kingdom Antarctic Heritage Trust
USAP	United States Antarctic Program

Appendix C

Membership List

The following is a list of IAATO Members during the 2007-2008 season and upcoming 2008-2009 season as of May 2, 2008. If a vessel is operating both in 2007-2008 and in 2008-2009 it is not noted. Notations are only made if it is either one year or the other. Due to changes in IAATO Bylaws the levels of membership have been noted for both operating seasons.

*Note below that Abercrombie and Kent operated the vessel *Explorer II*. During specific departures the name changed to either *Minerva* or *Alexander Von Humboldt*. It is the same vessel with different names all organized under Abercrombie and Kent's operation. During 2008-2009 the vessel will operate as *Minerva*.

In addition the *Fram, Nordnorge and Saga Ruby* occasionally carried less than 200 passengers on some departures. See ATCM XXXI IP 85 *Overview of Antarctic Tourism 2007-2008 Antarctic season and the Preliminary Estimates for 2008-09 Antarctic Season* for additional information.

	Nationality	Name of Company	Membership Level 2007-2008	Membership Level 2008-2009	Vessel (s), Aircraft or other
1. Operators of Ships that carry less than 200 passengers					
1	United States	Abercrombie and Kent	Full	Member	**Explorer II (2007-2008)* *Minerva (2008-2009)* *Minerva (2007-2008)* *Alexander Von Humboldt (2007-2008)*
2	Chile	Antarctic Shipping	Full	Member	*Antarctic Dream*
3	Argentina	Antarpply Expeditions	Full	Member	*Ushuaia*
4	Australia	Aurora Expeditions	Full	Member	*Polar Pioneer* *Marina Svetaeva*
5	United States	Clipper Cruise Line	Full	no longer operating	*Clipper Adventurer (2007-2008)*
6	United States	Cheesemans' Ecology Safaris	Full	Member	*Polar Star*
7	France	Compagnie Des Iles Du Ponant	Full	Member	*Le Diamant*
8	United States	Elegant Cruises	Full	Member	*Andrea*
9	Canada	Fathom Expeditions	Full	Member	*Ushuaia*
10	Canada	G.A.P Adventures	Full	Member	*Explorer & Polaris (2007-2008), TBA for (2008-2009)*
11	United Kingdom Overseas Territory	Golden Fleece Expeditions	Full	Member	*S/Y Golden Fleece*
12	Germany	Hapag Lloyd Kreuzfahrten	Full	Member	*Bremen*
13	New Zealand	Heritage Expeditions	Full	Member	*Spirit of Enderby*
14	United Kingdom	High Latitudes Limited	Provisional	Associate B1	*S/Y High Latitudes* *Billy Budd, Lady M*
15	France	Kotick Charters	Provisional	Member	*S/Y Kotick*
16	France	Latitude Ocean	Provisional	Member	*S/Y Vaihere*
17	United States	Lindblad Expeditions	Full	Member	*Nat. Geographic Endeavour* *Nat. Geographic Explorer (2008-2009)*
18	Argentina	Le Sourire Expeditions	Provisional	Member	*Le Sourire*
19	Australia	Moir Holdings Australia	Provisional	Associate B1	*Sarsen*
20	Australia	Ocean Expeditions	Full	Member	*Australis, Philos*
21	Netherlands	Oceanwide Expeditions	Full	Member	*Grigoriy Mikheev* *Aleksey Maryshev* *Professor Molchanov* *Professor Multanovskiy*
22	Germany	Oceanstar	Provisional	Associate B1	*Hanse Explorer*
23	Australia	Orion Expeditions	Full	Member	*Orion*
24	Canada	One Ocean Expeditions	n/a	Associate B1	*Professor Multanovskiy*
25	United Kingdom	Pelagic Expeditions	Full	Member	*S/Y Pelagic Australis* *S/Y Pelagic*
26	Australia	Peregrine Shipping	Full	no longer operating	*Akademik Ioffe* *Akademik Sergey Vavilov*
27	Norway	Polar Star Expeditions	Full	Member	*Polar Star*

Nationality		Name of Company	Membership Level 2007-2008	Membership Level 2008-2009	Vessel (s), Aircraft or other
1. Operators of Ships that carry less than 200 passengers					
28	United States	Quark Expeditions	Full	Member	*Kapitan Khlebnikov Lyubov Orlova* *Ocean Nova* *Akademik Shokalskiy* *Clipper Adventurer* *Akademik Ioffe (2008-2009)* *Akademik Sergey Vavilov (2008-2009)*
29	Netherlands	Rederij Bark Europa	Full	Member	*Bark Europa*
30	Chile	Sea, Ice and Mountain Expeditions	Provisional	Member	*S/Y Santa Maria*
31	Australia	Spirit of Sydney Expeditions	Provisional	Member	*S/Y Spirit of Sydney, S/Y Paratii 2 (2008-2009)*
32	United States	Silversea Cruises Ltd.	n/a	Associate B1	*Prince Albert II*
33	United States	Sterna Corporation	Provisional	Member	*S/Y Seal*
34	Canada	Students on Ice	Provisional	Member	*Ushuaia, Shokalskiy (2007-2008 only)*
35	Netherlands	Tooluka	Provisional	not planning to operate	*S/Y Tooluka (2007-2008)*
36	United States	Travel Dynamics International	Full	Member	*Corinthian II*
37	New Zealand	Waterline Yachts	Provisional	Associate B1	*S/Y Tiama*
38	Australia	Xplore Expeditions	Provisional	Member	*S/Y Xplore*
39	Netherlands	Waterproof Expeditions	Associate	Associate B1	*Grigoriy Mikheev* *Alexey Maryshev*
40	United States	Zegrahm Expeditions	Full	Member	*Clipper Adventurer (2007-2008), Le Diamant (2008-2009)*
2. Operators of Ships that carry 200-499 passengers					
1.	Netherlands & Germany	Club Cruise/Phoenix Reisen	n/a	Associate B1	*Alexander Von Humboldt (2008-2009)*
2	Germany	Hansa Kreuzfahrten	Full	Member	*Delphin*
3	Norway	Hurtigruten ASA	Full	Member	*Fram*
				Ship not operating	*Nordnorge (2007-2008)*
4	Germany	Peter Deilmann Reederei	Full	Member	*Deutschland (2009-2010)*
5.	United States	ResidenSea	Full	Member	*The World (2009-2010)*
6	United Kingdom	Saga Shipping	Full	Member	*Spirit of Adventure*
7	Germany	Plantours and Partner	Full	Member	*Vista Mar*
8	Germany	Transocean Expeditions	n/a	Associate B1	*Marco Polo*
9	United States	Voyages of Discovery	n/a	Associate B1	*Discovery*
3. Operators of Cruise Only Vessels that carry over 500 Passengers					
1	United States	Crystal Cruises	Full	Member	*Crystal Symphony (2008-2009)*
2	United States	Holland America	Full	Member	*Rotterdam (2007-2008)* *Amsterdam (2008-2009)* *Prinsendam*
3	United States	Princess Cruises	Full	Member	*Star Princess, Golden Princess (2008-2009)*
4	Japan	Peaceboat/Japan Grace	Provisional	Associate B1	*Topaz (2007-2008)* *Clipper Pacific (2008-2009)*
5	United States	Celebrity Cruises/RCCL	Provisional	Associate B1	*Azamara Journey (2007-2008)*
6	United Kingdom	P&O Cruises UK	Provisional	Associate B1	*Artemis (2007-2008)*
4. Organizers of Land-Based Operations					
1	United States	Adventure Network International/Antarctic Logistics and Expeditions	Full	Member	various aircraft
5. Organizers of Over-Flights					
1	Chile	Lan Airlines	Associate	Associate B2	Boeing 737-200
6. Organizers of Air/Cruise Operations					
1	Chile	Antarctica XXI	Full	Member	*Grigoriy Mikheev*

	Nationality	Name of Company	Membership Level 2007-2008	Membership Level 2008-2009	Vessel (s), Aircraft or other
7. Travel Companies in Support of Antarctic Tourism					
1	Australia	Adventure Associates	Full	Member	various
2	United States	Expeditions Inc./Polar Cruises	Full	Member	Various
3	Netherlands	Thika Travel	Full	Member	Various
4	United States	Adventure Life Journeys	Associate	Associate B2	Various
5	Australia	Antarctic Horizons	Associate	Associate B2	Various
6	Argentina	Antarctica Expeditions	Associate	Associate B2	Various
7	Argentina	Antarctica Ushuaia Turismo	Associate	Associate B2	Various
8	United States	Amazing Cruises and Travel, Inc.	Associate	Associate B2	Various
9	Belgium	Asteria Expeditions	Associate	Associate B2	Various
10	Netherlands	Beluga Expeditions & Adventures BV	Associate	Associate B2	Various
11	Chile	DMC Chile S.A.	Associate	Associate B2	BAE 100, day flights to King George Island with landings
12	United Kingdom	Exodus Travel	Associate	Associate B2	Various
13	Sweden	Expeditionskry-ssningar	Associate	Associate B2	Various
14	United States	Expeditiontrips.com	Associate	Associate B2	Various
15	United States	Galapagos Travel	Associate	Associate B2	Various
16	France	Grand Nord-Grand Large	Associate	Associate B2	Various
17	Australia	Intrepid Travel	Associate	Associate B2	Various
18	United Kingdom	Journey Latin America	Associate	Associate B2	Various
19	Germany	Kontiki Saga Reisen	Associate	Associate B2	Various
20	United States	Mountain Travel Sobek	Associate	Associate B2	Various
21	Australia	Natural Focus Safaris	n/a	Associate B2	Various
22	United Kingdom	Noble Caledonia	Associate	Associate B2	Various
23	Italy	Patagonia World s.r.l	Associate	Associate B2	Various
24	Australia	Peregrine Adventures	Associate	Associate B2	Various
25	Sweden	Polar Quest	Associate	Associate B2	Various
26	Sweden	Pura Adventura	Associate	Associate B2	Various
27	United States	Rannoch Adventures	Associate	Associate B2	Various
28	United States	Regent Seven Seas Cruises	Associate	Associate B2	Various
29	Argentina	Sintec Tur	Associate	Associate B2	Various
30	United States	Travel Wild Expeditions	Associate	Associate B2	*Ushuaia*
31	United Kingdom	Tucan Travel Pty Ltd	Associate	Associate B2	Various
32	United States	Victor Emanuel Nature Tours	Associate	Associate B2	Various
33	United States	Wilderness Travel	Associate	Associate B2	Various
34	United Kingdom	WildWings	Associate	Associate B2	Various
35	Australia	World Expeditions	Associate	Associate B2	Various
8. Ship Agents, Suppliers, Ground Operators-Types of Services					
1	Chile	C&O Tours	Associate	Affiliate	Ship and Ground Agent Services
2	United Kingdom Overseas Territory	The Falkland Islands Co. Ltd	Associate	Affiliate	Ship and Ground Agent Services
3	United States	Global Marine Networks LLC	n/a	Affiliate	Marine Communication Services-vessel tracking
4	Argentina	Navalia s.r.l. Port Agents and Ship Suppliers	Associate	Affiliate	Ship and Ground Agent Services
5	United Kingdom Overseas Territory	Sulivan Shipping Services	Associate	Affiliate	Ship and Ground Agent Services
6	Argentina	Tamic S.A.	Associate	Affiliate	Ship and Ground Agent Services
7	United States	Ship to Shore, Inc.	Associate	Affiliate	Clothing and Equipment for Expedition Travel
8	United Kingdom Overseas Territory	West Point Island	Associate	Affiliate	Landing Site
9	Argentina	Wouk Logistics	Associate	Affiliate	Ship Agent
10	Argentina	Sealand s.r.l Ship Agents and Suppliers	Associate	Affiliate	Ship Agent
11	New Zealand	ID Tours New Zealand	Associate	Affiliate	Ground Services and visitor information
9. Government, Tourism Offices, Heritage Trust					
1	Australia	Antarctic Tasmania	Associate	Affiliate	Assistance with planning, departures from Hobart
2	United Kingdom Overseas Territory	Falkland Islands Tourism	Associate	Affiliate	Assistance with planning visits
3	United Kingdom	UK Antarctic Heritage Trust	Associate	Affiliate	Heritage Trust
4	United Kingdom Overseas Territory	Falklands Conservation	Associate	Affiliate	Conservation

Appendix D

Partial list of Agreements from IAATO's 18th Annual Meeting, Hobart, Tasmania, 2007

1. IAATO Statement on Waste Management

The meeting discussed waste management practices in marine areas adjacent to the area of the Antarctic Treaty and agreed that:

1. For IAATO Member operated vessels, the restrictions on discharge into the sea from vessels that apply in the Antarctic Treaty area, pursuant to the Protocol on Environmental Protection to the Antarctic Treaty and MARPOL 73/78, should be extended northward to apply everywhere south of the Antarctic Convergence (Polar Front);*
2. the location of the Antarctic Convergence shall normally be deemed to be the line defining the northern limit of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) set forth in Article I, paragraph 4 of the Convention,* unless measurement of variation in sea water temperature clearly establishes its location as further north;
3. with the long term objective of preventing any discharge of waste by IAATO Member operated vessels on Antarctic voyages, all such vessels capable of doing so are strongly urged to retain all waste on board for appropriate shore-side disposal; and
4. IAATO open lines of communication with the appropriate authorities in gateway ports aimed at promoting expansion of environmentally sound waste reception facilities.

2. IAATO Recommendation on Outboard Engine Use

In order to help preserve the quality of the environment, IAATO recommends that tour operators using spark ignited marine outboard engines in Antarctica comply with California emission standards, star label 3 and above.

See website: *http://www.arb.ca.gov/msprog/offroad/cert/cert.php*

Engines meeting this standard should be phased in over a three-year period as older engines need replacement.

3. Agreed General Statements

1. To relieve pressure on heavily visited sites, where practicable, operators should be encouraged to minimize direct reference to specific landing sites (e.g. Deception Island) in marketing material.

* The Antarctic Convergence shall be deemed to be a line joining the following points along parallels of latitude and meridians of longitude: 50°S, 0°; 50°S, 30°E; 45°S, 30°E; 45°S, 80°E; 55°S, 80°E; 55°S°, 150°E; 60°S, 150°E; 60°S, 50°W; 50°S, 50°W; 50°S, 0°.

2. Members are discouraged from digging swimming holes along the shores of Port Foster, Deception Island. If doing so then holes should only be dug in the littoral zone, and filled in immediately afterwards.
3. IAATO encourages its Members to start to consider their carbon footprint with a view to measuring carbon footprint and to look for ways to reduce our emissions.

Report by the International Hydrographic Organization (IHO) on "Cooperation in Hydrographic Surveying and Charting of Antarctic Waters"

Introduction

The International Hydrographic Organization (IHO) appreciates the opportunity to brief the 31st Antarctic Treaty Consultative Meeting (ATCM), on the progress made in the Cooperation in Hydrographic Surveying and Charting of Antarctic Waters. This report covers the period since ATCM XXX.

The IHO has continued to make great efforts in conjunction with several other international organizations to raise awareness on the importance of improving the priority assigned to conduct hydrographic surveys in Antarctica. It has to be noted the strong support received from these international organizations in this endeavour.

Antarctica continues to be of high concern to the IHO and therefore its Hydrographic Commission on Antarctica has been tasked to do its best in coordinating and cooperating with all principal actors, aiming at safety of life at sea, safety of navigation, the protection of the marine environment and the progress in marine scientific research in Antarctica.

The IHO Hydrographic Commission on Antarctica

The 7th Meeting of the IHO Hydrographic Commission on Antarctica (HCA) took place at the Centro Naval in Buenos Aires, Argentina, 3-5 October 2007 organized by the Servicio de Hidrografia Naval.

The Chairman, Capt Gorziglia (IHB Director) opened the meeting welcoming the 13 HCA Member States present (Argentina, Australia, Brazil, Chile, Ecuador, France, Germany, Greece, India, Italy, Norway, United Kingdom and USA) and observers from Peru, Antarctic Treaty Secretariat, COMNAP, IAATO and SCAR. It has to be highlighted that since the last ATCM, Peru and USA have signed the Statutes of the HCA and therefore have become full members of the Commission, the total number of which is now 19. (Annex A)

At the meeting, the Commission considered different matters including the issue of membership; the status of the action list agreed at the last meeting; the outcome of ATCM XXX; the IHO 5 Year Work Program approved by the XVII International Hydrographic Conference in May 2007 and the status of nautical charting.

Taking advantage of the venue, the AT Executive Secretary offered an excellent presentation on the activities and work coordinated by the Secretariat and hosted a social event for all HCA participants at the ATS headquarters.

1. HCA Membership

The Commission, after reviewing the situation, decided to invite those IHO Member States that are not yet HCA members and that comply with the requisites, to consider joining the HCA, especially those under the condition of "pending confirmation of membership". That is the case of Japan, Rep. of Korea, Poland, Ukraine and Uruguay.

It is reminded that according to HCA Statutes, "Membership of the Commission is open to any IHO Member State whose government has acceded to the Antarctic Treaty and which contributes resources and/or data to IHO INT Chart coverage of Region M (south of parallel 60°S) and which becomes a signatory to the Statutes of the Commission".

2. Status of Actions Agreed

The Committee reviewed the status of the actions agreed at the last meeting and confirmed that almost all actions had been completed.

One of the topics that generated an interesting discussion was the Application of SOLAS Convention, Chapter V, Regulation 9, in Antarctic waters. It seems that this is an ongoing matter, as the report submitted to ATCM XXX seeks the ATS position as regard to who assumes the obligation/ responsibility for the provision of hydrographic services in Antarctica, an issue that does not seem to have been discussed in this forum. The Commission has been discussing the applicability of SOLAS V Regulation 9 in the Antarctic Treaty area that requires contracting governments to arrange for the provision of hydrographic services. A better understanding is only expected after some precisions are made by the ATCM. See Annex B.

3. Outcome of the 30th ATCM

In brief, the IHO report was very well received at the 30th ATCM and the proposal for a seminar to be organized during the 31st ATCM to raise awareness on the importance of hydrographic activities in Antarctica was welcomed. The HCA paid close attention to this initiative and its Members have been working hard in the preparation of this event, the program of which is provided in Annex C. It will be held on Monday 09 June.

Following comments provided by SCAR emphasizing that high quality bathymetric maps are needed not only for navigation but also for science it was recommended that all countries using multibeam echo sounders on the Southern Ocean should plan ship tracks to ensure that gaps in bathymetric coverage are filled and that the data be submitted to the appropriate World Data Centre. This is strongly supported by the IHO, and the HCA is exploring ways to improve coordination in this sense, mainly through the IBCSO.

Also COMNAP stressed that accurate charts are essential and that there was an urgent need to uphold, and where necessary clarify, responsibilities of both government and private sector operators. Several Parties agreed that the work of this IHO HCA Commission was particularly important and that resources and funding should be provided to undertake hydrographic charting in Antarctica.

It was made clear that it was urgent to assign a high priority to hydrographic survey activities.

4. IHO 5 Years Work Program

The HCA examined the approved IHO 5 Years Work program an fully agree with the plan to have HCA meetings each year as it was felt vital to keep the pressure on the coordination required to improve the availability of INT charts covering Antarctica.

The HCA also noted that the plan considers not only the provision of the above mentioned seminar, but similar events in association with COMNAP and IAATO in the following years, 2009 and 2010, respectively.

5. Status of Nautical Charting

The Commission reviewed the progress made on INT chart scheme and production in Region M, where out of the 100 charts which form the scheme, 59 had been published as of April 2008. Especial attention was given to the 33 charts for which there was no information on the progress so far reached. On one side we have experienced that some HOs have Antarctic INT Charts in a very low priority and on the other, we have some charts for which there are no volunteers to compile and produce them. The HCA is taking some actions in order to solve these shortcomings.

The Commission approved a draft ENC scheme submitted by the IHB for small scales in Antarctica. The producer HO will normally be that of the INT chart on which the ENC has been based. Also a medium scale ENC scheme was examined that today is in the revision process before its adoption. Finally the Commission agreed on the need to develop a large scale ENC scheme, task that is in progress at the IHB. See Annex D.

6. Next HCA Meeting

Following the kind invitation from the Directorate of Hydrography and Navigation from Brazil, the Committee decided to accept the invitation and agreed to have the 8th HCA meeting in Niteroi, Brazil, 06-08 October 2008. We take this opportunity to invite the Executive Secretary of the Antarctic Treaty Secretariat to attend the HCA Meeting.

Conclusions

1. There is a good reciprocal understanding between the IHO HCA Members and other international organizations interested in Antarctica. The ATS needs to consider adopting some coordination at a governmental level aiming at assigning a much higher priority to hydrographic survey activities and chart production. Also consideration should be given to the appropriateness of adopting the SOLAS V Regulation 9 concept, so that hydrographic and cartographic activities progress not only on a voluntary basis.
2. There has been a very low progress in the production and availability of INT Charts, mainly due to the lack of new surveys. The only way to revert this process is enhancing the priorities of hydro-cartographic activities.
3. The IHO through its HCA has prepared a set of special presentations in the form of a Seminar, aimed at sharing with the 31st ATCM Delegates the concern of the hydrographic community derived from the low or almost non existent hydro-cartographic activity in Antarctica.

Recommendations

It is recommended that the 31st ATCM:

1. To take note of the IHO Report.
2. To take action as regard to the conclusions in the report.

Monaco, April 2008.

Annexes:

A: HCA Membership Situation
B: Discussion on SOLAS V
C: Program of the Seminar
D: INT Chart Present Production Status

ANNEX A

HCA MEMBERSHIP SITUATION

(April 2008)

MEMBERS:

Argentina
Australia
Brazil
Chile
China
Ecuador
France
Germany
Greece
Italy
India
New Zealand
Norway
Peru
Russian Federation
South Africa
Spain
United Kingdom
USA

PENDING CONFIRMATION OF MEMBERSHIP:

Japan
Korea (Rep. of)
Poland
Ukraine
Uruguay

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

Discussion paper on SOLAS V

The Safe of Life at Sea (SOLAS) Convention), Chapter V "Safety of Navigation", Regulation 9 "Hydrographic Services" provides a clear rules to Contracting Governments to SOLAS on what it is expected from them as regard to the collection, compilation, publication, dissemination and keeping up to date nautical information required for safe navigation.

The text of Reg. 9 (provided as an Appendix) seems to refer to the geographic areas of which a Contracting Government is responsible for, let us say as an example, its own territorial sea, its ports, etc.

This Regulation clearly establishes the responsibility for the provision of hydrographic services with Contracting Governments that must undertake to arrange, cooperate, coordinate and ensure these services. It is evident that the preparation and issuing of nautical charts and other publications is the responsibility of the Contracting Governments, but how can this concept be applied in Antarctica where Contracting Governments to SOLAS do not own territorial waters, ports, etc.?

According to Reg. 9 Contracting Governments are urged to provide these services but due to the different nature of Antarctica, the provision of hydrographic services in that part of the world is based only on voluntary basis. Under this perspective we might find that nobody feels responsible for conducting hydrographic surveys and charting the Antarctic waters, and in fact all those executing surveys and producing charts have neither obligation nor a commitment to do so.

In the rest of the world we have a Contracting Government that shall undertake these activities, and the mariner is full aware of that, but what is the situation in Antarctica? Who is responsible for surveying Antarctic waters? Is there any body feeling to have the responsibility for the provision of nautical charts?

The IHO/HCA coordinates the efforts mainly to speed up the availability of INT Charts in Antarctica; avoid duplication and standardize the processes and final products. The result is that on voluntary basis some areas are considered, then surveyed and charted but is the HO's country that produced a nautical chart liable for this nautical chart? The dimension seems to be different whether somebody acts as "volunteer" or has the obligation to provide a service. The fact that there is no clear indication on who shall provide hydrographic services in Antarctica is a problem that needs to be addressed.

Just playing with words we can organize a couple of sentences to illustrate the situation. For example:

According to SOLAS Reg. 9, the responsibility for providing hydrographic services of the Port of Valparaiso is with the Contracting Government : Chile

According to SOLAS Reg. 9, the responsibility for providing hydrographic services of the Deception Island is with the Contracting Government : xxxxxx (there is none)

As in principle none of the AT Members feels obliged to provide hydrographic services for a particular area of Antarctica, it is likely that it will take too long before the INT Chart scheme is completed. But that is not the end, as charts need to be kept updated.

Can the Antarctic Treaty System take advantage of the concept under Regulation 9 in order to enhance the provision of hydrographic services in Antarctica?

Appendix

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:

- to ensure that hydrographic surveying is carried out, as far as possible, adequate to the requirements of safe navigation;
- 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;
- to promulgate notices to mariners in order that nautical charts and publications are kept, as far as possible, up to date; and
- 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

Program of the Seminar
Importance of Hydrographic Activities in Antarctica
International Hydrographic Organization (IHO)
Hydrographic Commission on Antarctica (HCA)

Background

The Antarctic Treaty System has recognized the traditional role played by the International Hydrographic Organization (IHO) through its Hydrographic Commission on Antarctica, in contributing to the safety of navigation, the protection of the Antarctic environment and dependent and associated ecosystems, including scientific purposes.

The international cooperation and coordination between countries which undertake hydrographic surveys and nautical charting of Antarctic waters is absolutely necessary to provide mariners and scientists with data, information, products and services to minimize the risks associated with their activities.

However set against the increasing numbers of people visiting and working in the region for a range of different activities, the progress so far reached by Hydrographic Offices under the umbrella of the IHO/HCA in the production of a reliable and updated set of nautical charts is far from being appropriate. This is in terms of coverage and fidelity to modern survey standards.

In keeping with the Antarctic Treaty no single nation has specific responsibility for charting but all are stakeholders with an international commitment to the safety of life at sea (SOLAS). Accordingly assigning a higher priority to the hydrographic activities, at national levels in each office, monitored and supported by the IHO through the HCA has been identified as one of the most relevant measures that could contribute to improve safety to navigation in Antarctic waters.

ATCM XXX accepted the offer of IHO/HCA to organize and deliver a Seminar at the 31st ATCM to highlight the important role and contribution hydrography is called play as regard to the objectives of the Antarctic Treaty System.

Objective

To raise awareness at the politico-strategic level on the importance of hydrographic activity in the Antarctica, to achieve a better understanding in the ATCM of the risks presently attached to the mariner with the status of charting in the region and what the same data also contributes to scientific endeavour, and to seek support on ways to improve the situation.

Programme

The Seminar will be delivered on Monday 09 June 2008 for a period of two hours, as part of the Programme of the 31st ATCM.

The content includes Opening Remarks (5 minutes) and 5 Presentations of 20 minutes each, the details of which are provided in the Annex. There will be a 15 minutes period for questions from the audience.

A CD ROM with all Presentations will be provided to participants and to the AT Secretariat. ATS and IHO might wish to post Presentations in their respective websites to facilitate access by interested parties.

As an outcome of the Seminar it is expected that a concrete proposal/recommendation will be prepared and supported by several AT Member State and submitted to ATCM XXXI for consideration and approval.

Monaco, 06 February 2008

Hugo Gorziglia
Captain – Chilean Navy
IHB Director & HCA Chairman

Appendix

PRESENTATIONS

Opening Remarks: Hydrography in the Antarctica.
Speaker: Hugo Gorziglia, Captain Chilean Navy, former Chilean Hydrographer, Director IHB and Chairman HCA
Content: What is hydrography? Why we need hydrography? What are and why exist the IHO and HCA and what they have been doing. INT Chart Scheme. SOLAS and the Antarctica.

First Presentation: Hydrography in Antarctica.
Speaker: Ian Moncrieff, Rear Admiral, United Kingdom National Hydrographer, former Commanding Officer of HMS Endurance (the RN Antarctic Patrol Ships) and former Commander of British Forces in the South Atlantic.
Content: Antarctic Navigation and its risks. Extant of present coverage in and around the peninsula. Present UK approach to charting priorities based on observed routes of IATO vessels and support to BAS. Work done to date and future work plans. Case studies. Liabilities, Paucity of SAR. How hydrography knowledge reduces the risk

Second Presentation: Hydrography and its contribution to the protection of the marine environment in Antarctic waters.
Speaker: Manuel Catalán, Rear Admiral Spanish Navy, Scientist, Technical Secretary of the Spanish Polar Committee and Chairman of SHIPOPS. (Presentation as expert not institutional).
Content: Role of hydrography in Antarctic operations. Marine accidents and its impact on the marine environment. What is needed to operate with greater safety?

Third Presentation: Hydrography and its contribution to Antarctic Sciences.
Speaker: Dr Hans-Werner Schenke, Alfred Wagener Institute for Polar and Marine Research, Represent Germany, IOC/IHO GEBCO, SCAR at the HCA, Chairman of SCUFN and IBCSO.
Content: The connection between hydrography and science. Mutual benefit. Scientific projects supported by bathymetric and remote sensing data. Safe access to remote research areas. Data exchange and Data Centers.

Fourth Presentation: Hydrographic and Cartographic Status in the Antarctica.
Speaker: Yves Guillam, Ingénieur en chef des études et techniques d'armement, Head of Plans, Policy and External Relations, SHOM.
Content: The existing situation based mainly on S-55. Provision of conclusions and clear picture of the problem. Characteristics of the data and difficulties in improving chart production.

Fifth Presentation: Practical initiatives to improve hydrography and nautical cartography in Antarctica.
Speaker: Rod Nairn, Captain Australian Navy, Australian Hydrographer, Vice Chair of HCA.
Content: A resume of the problems based on previous presentations and the offer of conclusive measures that could be put in practice by ATCM to improve the situation. The role of ATCM and IHO, to finally offer a sound resolution for consideration and adoption by the 31st ATCM.

Monaco, 06 February 2008.

ANNEX D

INT Chart Present Production Status (April 2008)

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		
10	909	Martin Peninsula, Cape Colbeck	2 000 000	*Not assigned*		
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	Proj. 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	

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
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. 2008
37	9035	Magnet Bay to Cape Rouse	500 000	AU	1993	Proj. 2008
38	9036	Approaches to Mawson	25 000	AU	2007	
		Plan A - Horseshoe harbour	5000			
39	9037	Gibbney Island to Kista Strait	25 000	AU	Proj. 2009	
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		
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		
49	9056	Approaches to Dronning Maud Land	300 000	ZA	2005	
50	9057	*To be determined*	200 000	DE		
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	*Not assigned*		

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
54	9100	Isla Marambio	25 000	AR		
		Plan A – Base aéra Marambio	5000			
55	9101	Peninsula Trinidad	10 000	AR	Proj. 2013	
		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	*Not assigned*		
		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		
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	Proj. 2012	
66	9112	Plans in Bransfield Strait		GB		
		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		*Not assigned*		
		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			

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
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	Proj. 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 ?		75 000
79	9132	Grandidier Channel	75 000	GB ?		75 000
80	9140	Islas Orcadas del Sur	150 000	AR		
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	
84	9151	De Isla De Jorge a Isla Livingston	200 000	CL	Proj. 2012	
85	9152	De Isla Livingston a Isla Low	200 000	CL	Proj. 2012	
86	9153	Church Point to Cape Longing including James Ross Island	150 000	GB & AR	1999	2004
87	9154	Joinville Island to Cape Ducorps and Church Point	150 000	GB & AR	1996	2002
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	2007	
90	9157	Gerlache Strait	150 000	CL		

No.	INT No.	Name of the INT Charts	Scale	Producer	Status	
					Publication	N. Edition
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	Proj. 2009	
93	9160	Crystal Sound	150 000	GB	Proj. 2009	
94	9161	Matha Strait to Pourquoi Pas Island	150 000	CL		
95	9162	Adelaide Island	150 000	CL	Proj. 2010	
96	9163	Marguerite Bay; Rothera	150 000	GB	Proj. 2008	
97	9164	Margarita Bay	150 000	CL	Proj. 2010	
98	9170	Islas Shetland y Mar de la Flota	500 000	AR	1997	
99	9171	Brabant Island to Adelaide Island	500 000	GB		
100	9172	Matha Strait to Rothschild Island	500 000	RU	1999	

Resume: 59 out of 100 INT Charts have been produced, as of April 2008, i.e. 59%.

Report Submitted to ATCM XXXI
by IUCN

The International Union for Conservation of Nature

IUCN extends its formal thanks to the Government of the Ukraine for hosting this 31st Antarctic Treaty Consultative Meeting (ATCM).

With its long standing 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.

(1) Antarctic and Southern Ocean Marine Protected Areas

IUCN again welcomes steps taken at recent meetings under the Antarctic Treaty System with respect to protected areas in general and Marine Protected Areas in particular. IUCN especially welcomes the progress made by CCAMLR and the CEP towards development of a scientific basis for the identification of representative areas for protection through the process of bioregionalization. Indeed, we believe that, Bioregionalisation will also assist Parties to the Protocol on Environmental Protection of the Antarctic Treaty to fulfil their obligation under Annex V, Article 3 of the Protocol.

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.

IUCN welcomes the constructive input and support provided by the CCAMLR Scientific Committee last year to the management plan of the proposed ASMA for South-west Anvers Island and Palmer Basin, as this is a valuable example of the important cooperation between CCAMLR and the ATCM/CEP. IUCN further urges close and continued cooperation between ATCM-related and CCAMLR-related authorities to use the outcomes of the 2007 Bioregionalisation Workshop in developing protected areas and to achieve the conservation objectives of both CCAMLR and the ATCM/CEP.

At the same time, ATCM/CEP can and should continue to consider its own requirements and priorities for developing a scientific approach to the protection of the environment. Parties need to broaden the area of focus to address other areas of priority interest under the Annex V of the Protocol on Environmental Protection. Under Article 3.2 of Annex V, Parties are to seek to identify a range of areas as Antarctic Specially Protected Areas (ASPAs) within a systematic environmental-geographic framework. These are to include:

- areas kept inviolate from human interference so that future comparisons may be possible with localities that have been affected by human activities;
- representative examples of major terrestrial, including glacial and aquatic, ecosystems and marine ecosystems;
- areas with important or unusual assemblages of species, including major colonies of breeding native birds or mammals;
- the type locality or only known habitat of any species;
- areas of particular interest to on-going or planned scientific research;

- examples of outstanding geological, glaciological or geomorphological features;
- areas of outstanding aesthetic and wilderness value;
- sites or monuments or recognised historic value; and
- such other areas as may be appropriate to protect outstanding environmental, scientific, historic, aesthetic or wilderness values.

The Information Paper submitted by the United Kingdom (IP3) describes a very practical approach for identifying important marine areas for conservation, an approach based on a systematic conservation planning methodology. ATCM would benefit from endorsing this approach, welcoming the pilot study the United Kingdom plans to test this methodology. Other Members could conduct similar studies to contribute to the development of best practice guidance through identifying key decisions and datasets that would be required.

In addition to development of this methodology, there is also a need to continue actual identification and designation of sites where scientific information already exists or precaution dictates that action be taken to protect the important values identified in Article 3.2 of Annex V. The impacts of climate change are likely to increase the vulnerabilities of species, and make imperative in the interest of science the need for areas kept inviolate from human activities to enable future comparisons between direct human activities and those of climate change. Also, as fisheries, tourism, shipping, research and bioprospecting increase in area or effort, it is important to identify in advance areas of importance to ongoing scientific research, areas with important or unusual assemblages of species, unique or rare habitats, as well as areas of outstanding aesthetic and wilderness values. These areas may be extremely vulnerable to human impacts, and unlike representative areas, are neither replaceable nor substitutable.

At a global level, the IUCN World Commission on Protected Areas (WCPA) continues to work on promoting the establishment and effective management of worldwide, representative networks 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*.

The development of MPAs as a management and conservation tool in Antarctica and the Southern Ocean would enable the next step towards true ecosystem management of one of the earth's last relatively pristine large marine ecosystems. This would promote the ATCM's role in preserving Antarctica for peace and science and could serve as perhaps the best model for other areas of the world's oceans.

(2) Climate Change

Climate change is now one of the major drivers of change in Antarctica and its surrounding marine ecosystems. IUCN welcomes 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.

Given the scale, intensity and rapidity of changes currently underway, and bearing in mind that some of the reports before us indicate that climate-induced changes in Antarctica and the Southern Ocean are occurring at a higher rate than one might expect from IPCC projections, IUCN urges that Parties act now to adopt an extremely precautionary approach to the management of human activities,

to reduce their own carbon footprints with respect of their Antarctic activities and also to begin to reflect on how it may be possible to speed up response times so that new information about the impacts of climate change can be rapidly incorporated into ATCM decisions on the management of Antarctic and its surrounding marine environment. IUCN suggests that as part of the process of self evaluation, the ATCM consider how it may best respond to these challenges.

It is important to note that with regard to climate change, actions to conserve the terrestrial environment should not be taken in isolation to the marine environment. Antarctic Climate monitoring should attempt to improve our understanding of the connections between changes in the physical environment of Antarctica and the Southern Ocean.

(3) Shipping

IUCN welcomes the decision of IMO MEPC to ask the Bulk Liquids and Gases (BLG) Subcommittee to prepare amendments to MARPOL Annex I with respect of heavy grade oil on ships in the Antarctic Special Area with a target for completion of work by 2010. IUCN invites governments to support this work and take steps themselves to require that expeditions organized in or proceeding from their territory avoid the use of heavy grade oil fuels within the Antarctic Treaty area.

IUCN notes however, that the decision regarding heavy grade oil is but one of a range of measures sought to address the increasing number of environmental and safety issues raised by growing maritime traffic in the region. It is time for Antarctic Treaty Parties to consider strengthening the restrictions on the discharge of sewage, graywater, discharges of oily substances and other wastes found in Annex IV of the Protocol and to work within IMO to establish additional mandatory rules for vessels operating in the Southern Ocean, including ice-strengthening standards, hull fouling; and establishment of vessel traffic monitoring and information system for Antarctic vessels. These issues are well laid out in the information paper on Southern Ocean Vessel Issues (MEPC 57/ INF.19) submitted by Friends of the Earth to the 57th session of MEPC in 2008.

In addition, IUCN remains of the view 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. Again, it would be important to give careful consideration to ice classification requirements and the need to require suitably ice-strengthened hulls for passenger vessels travelling in the Antarctic Treaty area.

(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. It is past time to review the impacts of tourism. 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 develop additional measures so that such impacts can be avoided or minimised and monitored.

Two areas may require priority consideration: 1) the construction or use of buildings or other permanent infrastructure for tourism in Antarctica 2) the impacts of large cruise ships and other large vessels.

The construction of any building or permanent infrastructure in Antarctica is by definition likely to have an impact that is more than minor or transitory and thus would require a Comprehensive Environmental Evaluation. While such impacts may be justified to advance peace or science – the core values supported by the Antarctic Treaty – such would not necessarily be the case in support of tourism activities. The conversion of science facilities into tourism facilities is another cause of concern.

As with all vessels, but especially with respect to cruise ships, it is vital that each Party notifies "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 that obligation, Parties should ensure that all vessels so subject to notification are fully able to conform with obligations under the Protocol and the Treaty. If vessels do not have the capacity to comply with these obligations, both tour operators and flag states, as appropriate, should ensure that such vessels do not travel to Antarctica.

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 ensure themselves that they are sufficient to protect 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 due to safety and emergency response consideration, 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, to protect national programmes from having to divert resources from science to support visitors and to promote the values of the Antarctic Treaty System.

(5) Bioprospecting

IUCN welcomes the discussions of the Intersessional Contact Group (ICG) to examine the issue of biological prospecting in the Antarctic Treaty Areas. However, we regret that the ICG was not able to reach consensus on suggesting a way forward. Parties will need to agree on a working definition of the term "biological prospecting" as this has implications to where bioprospecting stops and on impacts that the bioprospecting activities might have, especially for marine organisms other than microbes. This is of particular importance given that 56% of the records in the Antarctic Biological Prospecting Database relate to organisms collected from the marine environment.

The issue of bioprospecting should rightly remain on the agenda of the ATCM. ATCM should adopt the ICG recommendation "to conduct a review of the existing Antarctic Treaty System, including CCAMLR, to see whether it already provides an adequate framework for managing biological prospecting activities in the Antarctic Treaty Area".

In the interest of informing the ATCM of discussions on the issue of bioprospecting in marine areas beyond national jurisdiction at the United Nations General Assembly *Ad Hoc* Open-Ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction ("Working Group"), New York, New York, 28 April - 2 May, 2008, IUCN provides some extracts from the draft Joint Statement by the Co-Chairpersons below. Despite diverging views on the relevant legal regime for marine genetic resources beyond areas of national jurisdiction

> *…some delegations were of the view that an elaborated regime was needed within the framework of UNCLOS in relation to marine genetic resources beyond areas of national jurisdiction. Other delegations stated that a new international regime may impede scientific research and innovation, and would be difficult to monitor and enforce. Several delegations highlighted the need for further consideration of intellectual property rights relating to marine genetic resources in areas beyond national jurisdiction.*
>
> *In that context, some delegations proposed focusing on practical short-term measures to enhance conservation and sustainable use of marine genetic resources. It was proposed that practical measures could address, among others, options for benefit sharing. In this regard, several delegates expressed interest in considering a proposal to use the Multilateral System developed under the International Treaty on Plant Genetic Resources for Food and Agriculture, as a possible reference point for discussions. While open to considering practical measures, others underlined the importance of also continuing the discussions on the legal regime of marine genetic resources beyond areas of national jurisdiction* [draft Joint Statement by the Co-Chairpersons 2 May 2008, para. 37-38].

There was agreement that the conservation and sustainable use of marine biodiversity is essential, and that research needs to be undertaken in accordance with the provisions of UNCLOS, and on the basis of the precautionary approach, in particular to ensure that extraction activities are undertaken in a sustainable manner.

IUCN reiterates that in the Antarctic-context, bioprospecting, as with 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, 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 should be done consistent with obligations under Annex II of the Protocol to Conserve Antarctic Fauna and Flora, as appropriate. In keeping with the spirit of the Antarctic Treaty and related instruments, Parties should adopt a Measure to ensure the protection of all native biota, including microbes, such that any collection would not be in such quantities to affect significantly their local distribution or abundance. 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.

(6) Introduction of Non-native Species, Parasites and Diseases

While we look forward to the results of the International Polar Year project on non-native species which will increase knowledge on pathways and potential species introductions into Antarctic terrestrial environments and enhance the opportunity for preventive measures to be put into place, we remain concerned that the consideration of invasive species in the Treaty System has overlooked the marine side.

The main barrier to introductions of non-indigenous species in the Southern Ocean is the physical dissimilarity between donor ports and high latitude recipient environments. The likelihood of transport of invasive species into the Southern Ocean is increasing as a consequence of the growth of tourism, fisheries and scientific activities in the region. It is predicted that climate change impacts on the

oceans may increase the rate of successful establishment by reducing differences in environmental conditions between donor and recipient regions. Furthermore, if invasions do occur, a positive feedback mechanism may be triggered whereby established invaders increase the ability of other non-indigenous species to establish in an ecosystem.

To date, several recent studies document species introductions into Antarctic and Southern Ocean waters. Marine debris and shipping (mainly through hull fouling) are the two major vectors for marine species introductions into the Southern Ocean and deserve an increasing attention and regulation. A thorough consideration of this issue is urgently needed within the framework of the Treaty to prevent species introductions, particularly in the marine environment. In order to conserve the integrity of the unique Antarctic system, Parties need to take effective measures to reduce such risks by effectively managing the main introduction vectors and pathways: fouling of vessel hulls, and ballast water, including from fishing activities.

IUCN would like to inform the Treaty Parties that in July 2007, the Marine Environment Protection Committee of IMO adopted guidelines providing common guidance for vessels undertaking ballast water exchange in Antarctic waters. The guidelines call for ballast that will be discharged in Antarctic waters to first be exchanged before arrival in Antarctic waters (preferably north of the Antarctic Polar Frontal Zone or 60 degrees S, whichever is the farthest north) and at least 200 nm from the nearest land in water at least 200m deep. If this is not operationally possible, such exchange should be undertaken in waters at least 50nm from land in water at least 200m deep.

States should apply these Guidelines as soon as possible, as an interim measure for all ships entering the Antarctic Treaty area before the Ballast Water Management Convention comes into force. Parties to the Antarctic Treaty are further encouraged to exchange information on introduced and invasive marine species and consider undertaking risk assessment of species introductions through ballast water and hull fouling into the Treaty area.

IUCN Background

Created in 1948, the International Union for Conservation of Nature (IUCN) brings together 83 States, 110 government agencies, 800 plus NGOs, and some 10,000 scientists and experts from 181 countries in a unique worldwide partnership. The Union's mission is to "influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable". The Union is the world's largest environmental knowledge network and has helped over 75 countries to prepare and implement national conservation and biodiversity strategies. The Union is a multicultural, multilingual organization with 1,000 staff located in 62 countries. Its headquarters are in Gland, Switzerland.

PART IV

ADDITIONAL DOCUMENTS FROM ATCM XXXI

ANNEX H

Additional Documents

DRAFT ADVERTISEMENT

EXECUTIVE SECRETARY OF THE SECRETARIAT OF THE ANTARCTIC TREATY

The Antarctic Treaty Consultative Meeting (ATCM) invites applications for the position of Executive Secretary of the Secretariat of the Antarctic Treaty.

The ATCM, consisting of 28 Consultative Parties, meets annually to consult on the application and implementation of the Antarctic Treaty. The Secretariat of the Antarctic Treaty is located in Buenos Aires, Argentina. Further information is available at *www.ats.aq*.

The Executive Secretary manages a small administrative staff to carry out the duties of the Secretariat assigned to it by the ATCM. The Executive Secretary presents and manages the Secretariat's budget, supports the organisation of the ATCM, and performs other duties identified by the ATCM.

Selection Criteria

Applicants must satisfy the following selection criteria:

1. Demonstrated experience or detailed knowledge of the operations of international meetings or intergovernmental organisations;
2. Demonstrated high level of managerial and leadership experience and competence in areas including:
   (a) selection and supervision of professional, administrative and technical staff;
   (b) preparation of financial budgets and the management of expenditures;
   (c) organisation of meetings and provision of secretariat support for high level committees; and
   (d) oversight and management of computer services and information technology;
3. Familiarity with Antarctic affairs, including the principles of the Antarctic Treaty and the scope of activities in the region;
4. Fluency in one of the four official working languages of the ATCM, i.e. English, French, Russian or Spanish;
5. A university degree, academic degree, or equivalent qualification; and
6. Be a national of a Consultative Party to the Antarctic Treaty.

Salary and Allowances

Details of remuneration and allowances are available from the Secretariat of the Antarctic Treaty on request.

The appointment will be for a term of four years with the possibility of one additional four year appointment.

Interview

The Depositary Government will draw up a short list of applicants number by 6 February 2009. Interviews of the short listed candidates will occur during ATCM XXXII to be held in Baltimore, Maryland, United States, on 6-17 April 2009. The successful candidate will be announced at that meeting.

Availability

The individual chosen for the post of Executive Secretary should be available to commence duties no later than 1 September 2009.

Additional Information

Please consult the Secretariat of the Antarctic Treaty website: *www.ats.aq* for complete information on remuneration and allowances; duties; selection criteria; the application process; staff regulations; and other relevant documents.

Closing Date

Each Consultative Party government will accept applications from its own nationals and submit them to the Depositary Government no later than 6 October 2008.

Applicants should check the national closing date for applications with their own Consultative Party government.

Please consult the Secretariat of the Antarctic Treaty website: *www.ats.aq* for the national government contact details of the relevant Consultative Party.

Canadian Verbal Statement regarding Incident of *M/S Explorer*

In accordance with our obligations under the Canadian *Antarctic Environmental Protection Act* and the *Antarctic Environmental Protection Regulations*, Canada issues permits to Canadians and Canadian companies for expeditions to the Antarctic.

The Permit Application process requires applicants to provide the Government of Canada with, among other things, a preliminary environmental evaluation, a waste management plan, and an emergency plan which meets the requirements of section 48 of our Act.

We issued a permit to G.A.P. Adventures, a Canadian operator using the *M/S Explorer* (Liberian flag vessel), for conducting a series of cruises to the Antarctic between November 11, 2007 and March 16, 2008.

As you all know, an investigation is underway regarding the sinking of the *M/S Explorer*.

Early on in the process, the Transportation Safety Board of Canada was in communication with the Liberian International Ship and Corporate Registry, which appointed Mr. Bob Ford to investigate the incident involving the *M/S Explorer*.

Canada requested to be considered a "Substantially Interested State" in accordance with International Maritime Organization Resolution A.849 (20), the *Code for the Investigation of Marine Casualties and Incidents*. Canada also formally offered its assistance with Liberia's investigation as deemed appropriate.

In addition, G.A.P Adventures have been contacted and have cooperated fully with the Liberian investigation underway.

The Government of Canada has also met with G.A.P and other operators to discuss the incident, as well as re-enforcing aspects of the permitting process which are relevant to this.

The Government of Canada is currently reviewing its Antarctic Permitting Process, and related impacts of increased tourism in the Antarctic, and are grateful for ATCM discussions on this matter.

We have reviewed the information document recently provided by the Republic of Liberia's Bureau of Maritime Affairs – and distributed by the Antarctic Treaty Secretariat.

We understand that a draft report is expected sometime in mid-summer, and we look forward to receiving and reviewing the final investigative Report once it is released.

The SCAR Lecture

The Executive Director of SCAR introduced The SCAR Lecture for 2008 on "Space Weather And Its Effects." which was given by Professor Louis Lanzerotti of the New Jersey Institute of Technology.

Professor Lanzerotti explained how since the International Geophysical Year of 1957-58 we have come to understand that Planet Earth has a complex outer atmosphere comprising a plasma rich in elementary particles through which run the Earth's magnetic field and the Van Allen belts of the ionosphere.

Because the Earth's magnetic field runs into the Earth at the poles, measurements of the strength of the magnetic field and of particles guided along the magnetic field can be made most easily on the ground at the poles, especially in Antarctica where there is land around the pole, so enabling us to understand this outer space environment without visiting it.

The strength of the magnetic field and the activities of these particles arriving in the Antarctic vary strongly with the strength of the solar wind, which bombards the Earth's outer atmosphere with particles at speeds of several hundred kilometres per second.

Earth is also bombarded with radiation from the sun in the form of X-rays and radio waves. The interference of these solar emissions with the Earth's outer atmosphere create "space weather", which can have significant effects on radio and electrical systems on land, on submarine cable transmissions, on power supplies and grids, on radar, on telecommunications satellites, on communications with aircraft, and on navigation systems (GPS).

Understanding these interactions requires scientific studies of space weather, many of which are undertaken from complex instruments operating from ground stations (or balloons) in the Antarctic, and the coordination of data from different national Antarctic stations through programmes like SCAR's ICESTAR project.

The Chairman of the ATCM thanked Professor Lanzerotti for explaining what the problems were, how important they were to society, how they can be understood, and the crucial role of using Antarctica as an observing platform to gather information about what is happening in the Earth's outer spatial environment.

ANNEX I

Preliminary Agenda for ATCM XXXII

Preliminary Agenda of ATCM XXXII, Baltimore 2009

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 XXXIII Meeting
20. Any Other Business
21. Adoption of the Final Report

ANNEX J

List of Documents

Working Papers

Number	Ag. Items	Title	Submitted by	E	F	R	S
WP001	ATCM 5	Proposal by Australia, the United Kingdom and Norway to amend Rule 11 of the Rules of Procedure of the ATCM	Norway Australia United Kingdom	X	X	X	X
WP002	CEP 7(c)	Site Guidelines for Wordie House, Winter Island, Argentine Islands	Ukraine United Kingdom	X	X	X	X
WP003	CEP 7(a)	Proposal for a new Antarctic Specially Protected Area at Narębski Point, Barton Peninsula, King George Island	Korea (ROK)	X	X	X	X
WP004	ATCM 17	Report of the ATCM Intersessional Contact Group to examine the issue of Biological Prospecting in the Antarctic Treaty Area	Netherlands	X	X	X	X
WP005	CEP 6(a)	The Draft Comprehensive Environmental Evaluation for the construction and operation of the Chinese Dome A Station in Antarctica	China	X	X	X	X
WP006	ATCM 11	Environmentally sound Tourism in the Antarctic Treaty Area	France Germany	X	X	X	X
WP007	CEP 7(a)	Five Years Review of Antarctic Specially Protected Area (ASPA) N° 161 Terra Nova Bay, Ross Sea	Italy	X	X	X	X
WP008	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 138 Linnaeus Terrace, Asgard Range, Victoria Land	United States	X	X	X	X
WP009	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 137, North-west White Island, McMurdo Sound	United States	X	X	X	X
WP010 rev.1	ATCM 13 CEP 8(b)	Status of the Regional, Antarctic Population of the Southern Giant Petrel - Progress	SCAR	X	X	X	X
WP011	ATCM 17	An update on biological prospecting in Antarctica, including the development of the Antarctic Biological Prospecting Database	Belgium	X	X	X	X
WP012	ATCM 14 CEP 6(b) CEP 7(c)	Human Disturbance to Wildlife in the Broader Antarctic Region: A Review of Findings	SCAR	X	X	X	X
WP013	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 106 Cape Hallett, Northern Victoria Land, Ross Sea	United States	X	X	X	X

Number	Ag. Items	Title	Submitted by	E	F	R	S
WP014	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 124 Cape Crozier, Ross Island	United States	X	X	X	X
WP015	CEP 6(a)	Report of the Intersessional Open-ended Contact Group to Consider the Draft CEE for the "Proposed Construction and Operation of the New Chinese Research Station at Dome A"	Australia	X	X	X	X
WP016	CEP 8(a)	Antarctic Alien Species Database	Australia	X	X	X	X
WP017	CEP 3	Preparation for Scheduled CEP Discussions: Reviews of Past Activities	Australia	X	X	X	X
WP018	ATCM 5	Annex II: Proposals for Completing the Review	Australia	X	X	X	X
WP019	CEP 7(a)	Revised Draft Antarctic Specially Protected Area (ASPA) Management Plan for Amanda Bay, Ingrid Christensen Coast, Princess Elizabeth Land, East Antarctica	Australia China	X	X	X	X
WP020	ATCM 11	Maritime Search and Rescue Incidents in the Antarctic Treaty Area: the Role of Rescue Coordination Centres	New Zealand	X	X	X	X
WP021	ATCM 11	Control of Permanent Land-based Facilities in Antarctica	New Zealand	X	X	X	X
WP022	ATCM 11	Implications of Tourist Vessels flagged to non-Parties for the effectiveness of the Antarctic Treaty System	New Zealand	X	X	X	X
WP023	ATCM 5 CEP 14	Commission for the Conservation of Antarctic Marine Living Resources Performance Review	New Zealand	X	X	X	X
WP024	CEP 9(b)	Improving the CEP's Role in Advising the ATCM on the State of Antarctic Environments	New Zealand	X	X	X	X
WP025 rev.1	CEP 7(a)	Review of Antarctic Specially Protected Area (ASPA) No.s 105, 118, 155, 154, and 156	New Zealand	X			
WP026	CEP 10	A Proposed Checklist for Inspecting Specially Protected and Managed Areas in Antarctica	New Zealand United Kingdom United States	X	X	X	X

Number	Ag. Items	Title	Submitted by	E	F	R	S
WP027	CEP 7(d)	Systematic Environmental Protection in Antarctica: Final report on Environmental Domains Analysis for the Antarctic continent as a dynamic model for a systematic environmental geographic framework for Annex V of the Protocol	New Zealand	X		X	X
WP028	CEP 14	Report of the CEP Observer to the twenty-sixth meeting of the Scientific Committee to CCAMLR, 22 to 26 October 2007	New Zealand	X		X	X
WP029 rev.1	CEP 3	A Five-Year Work plan for the CEP: Report on Intersessional Review	New Zealand	X	X	X	X
WP030 rev.3	CEP 8(b)	Draft Action Plan for Southern Giant Petrel Macronectes giganteus	New Zealand	X	X	X	X
WP031	CEP 7(a)	Review of Management Plans for Antarctic Specially Protected Areas (ASPAs) 135, 143, 160	Australia	X	X	X	X
WP032	CEP 7(a)	Review of Antarctic Specially Protected Area (ASPA) No 141	Japan	X	X	X	X
WP033	ATCM 9	Managing Human and Environmental Risks in Antarctica	France	X	X	X	X
WP034	ATCM 11 CEP 6(b)	A Mechanism for Centralizing Tourism and Non-governmental Activity Declarations and Authorization Requests Suitable for Taking Cumulative Impacts into Account	France	X	X	X	X
WP035	ATCM 13 CEP 9(a)	Antarctic Climate Change Issues	Norway United Kingdom	X	X	X	X
WP036	ATCM 11	Report of the Intersessional Contact Group on Issues Concerning Passenger Ships Operating in Antarctic Waters	Norway	X	X	X	X
WP037 rev.1	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 123 Barwick and Balham Valleys, Southern Victoria Land	United States	X	X	X	X
WP038	ATCM 9	Improving hydrographic surveying and charting to support safety of navigation and environmental protection in the Antarctic region	United Kingdom Australia	X	X	X	X
WP039	CEP 7(a)	Draft Management Plan for ASMA No X: South-west Anvers Island and Palmer Basin	United States	X	X	X	X

Number	Ag. Items	Title	Submitted by	E	F	R	S
WP040 rev.2	CEP 7(c)	Site Guidelines for Shingle Cove, Coronation Island	United Kingdom	X	X	X	X
WP041 rev.1	ATCM 5 CEP 7(e)	Guidance for Working Papers on Area Protection and Management	United Kingdom	X	X	X	X
WP042	ATCM 9	Participation of the Chilean Air and Maritime Search and Rescue Centres in the rescue of the Passenger Ship the Explorer and environmental mitigation of the accident in the Antarctic	Chile	X	X	X	X
WP043	ATCM 11	Further Development of Antarctic Tourism Policies	United States	X	X	X	X
WP044 rev.1	CEP 7(c)	Site Guidelines for Devil Island, Vega Island	United Kingdom	X	X	X	X
WP045	CEP 7(c)	Site Guidelines for Cape Hallett, Northern Victoria Land, Ross Sea	United States	X	X	X	X
WP046 rev.1	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 150 Ardley Island, Maxwell Bay, King George Island	Chile	X	X		X
WP047	CEP 7(a)	Revised Management Plan for Antarctic Specially Protected Area No 125 Fildes Peninsula	Chile	X	X	X	X
WP048	ATCM 18	The Antarctic Treaty at Fifty Years: Planning for Antarctic Treaty Consultative Meeting XXXII (Baltimore, 2009)	United States	X	X	X	X
WP049	ATCM 5	On the status and development of the Antarctic Treaty System	Russian Federation	X	X	X	X
WP050	ATCM 11	Proposals for Regulating the Adventure Tourism and Non-Governmental Activity in The Antarctic	Russian Federation	X	X	X	X
WP051	ATCM 11	Developing a Strategic Vision of Antarctic Tourism for the next Decade	United Kingdom	X	X	X	X
WP052	CEP 7(a)	Revised Draft Antarctic Specially Protected Area (ASPA) Management Plan for the Mount Harding, Grove Mountains, East Antarctica	China	X	X	X	X
WP053	CEP 7(a)	Antarctic Specially Protected Area (ASPA) Management Plan for Marion Nunataks, Charcot Island, Antarctic Peninsula	United Kingdom	X	X	X	X
WP054	ATCM 12 CEP 10	Proposal to revise the inspection checklists contained in Resolution 5 (1995)	Argentina	X	X	X	X

Number	Ag. Items	Title	Submitted by	E	F	R	S
WP055	CEP 9(b)	The Marine Biodiversity Information Network: 2010 and Beyond	Belgium	X	X	X	X
WP056	CEP 7(c)	Site Guidelines for Whalers Bay, Deception Island, South Shetland Islands	Argentina Chile Norway Spain United Kingdom United States	X	X	X	X
WP057	CEP 3	Report on Effectiveness of Trial Informal Group	Brazil	X	X	X	X
WP058	CEP 7(a)	Review of Draft Management Plans by Trial Informal Group	Brazil	X	X	X	X
WP059	CEP 7(c)	Site Guidelines for Half Moon Island, South Shetland Islands	Argentina	X	X	X	X
WP060	CEP 6(b)	Quantifying Atmospheric Emissions in Antarctic Comprehensive Environmental Evaluations	United Kingdom	X	X	X	X
WP061	CEP 7(b)	Antarctic Protected Area System: Revised List of Historic Sites and Monuments Measure 3 (2003) Guidelines for its Application	Chile	X	X	X	X
WP062	ATCM 5	The Antarctic Treaty and the Public. “The White Book”: A Project on the History and Achievements of the Antarctic Treaty System	Chile	X			X
WP063 rev.1	ATCM 6	Procedure for Selection and Appointment of the Executive Secretary of the Secretariat of the Antarctic Treaty	Australia	X	X	X	X

IV. List of Documents

Information Papers

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP001	CEP 6(b)	Initial Environmental Evaluation Law-Racovita Base	Romania	X			
IP002	CEP 7(e)	Workshop on Bioregionalisation of the Southern Ocean (Brussels, Belgium, August 2007)	United Kingdom United States	X			
IP003	CEP 7(e)	Proposed approach for the identification of important marine areas for conservation	United Kingdom	X			
IP004	CEP 6(a)	The Draft Comprehensive Environmental Evaluation for the construction and operation of the Chinese Dome A Station in Antarctica	China	X			
IP005	ATCM 4	Report by the International Hydrographic Organization (IHO) on “Cooperation in Hydrographic Surveying and Charting of Antarctic Waters”	IHO	X	X	X	X
IP006 rev.1	ATCM 11 CEP 7(c)	Antarctic Site Inventory: 1994-2008	United States	X			
IP007	CEP 9(b)	Summary of Environmental Monitoring and Reporting Discussions	Australia	X			
IP008	ATCM 9	Rules governing ships in the Antarctic	Chile	X			X
IP009	ATCM 9	Seguridad para la Aeronavegación en la Península Antártica, Isla Rey Jorge	Chile				X
IP010	ATCM 13	Visit by the UN Secretary General to the Antarctic	Chile	X			X
IP011	ATCM 9	Background to the pollution incident caused by the sinking of the MS Explorer	Chile	X			X
IP012	CEP 7(b)	Recuperación del Sitio Histórico Nº 56 Base Aérea Antártica “Pdte. Gabriel González Videla”	Chile				X
IP013 rev.2	ATCM 4	Report Submitted to Antarctic Treaty Consultative Meeting XXXI 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			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP014	CEP 4	Annual Report, Presented by France Pursuant to Article 17 of the Antarctic Treaty Protocol Relating to Environmental Protection, 2008	France	X	X		
IP015	CEP 4	Informe Anual del Ecuador de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	Ecuador				X
IP016	CEP 6(b)	Update on the Comprehensive Environmental Evaluation of New Indian Research Base at Larsemann Hills, Antarctica	India	X			
IP017	CEP 8(a)	Measures to protect the Larsemann Hills, East Antarctica, from the introduction of non-native species	Australia China India Romania Russian Federation	X			
IP018	ATCM 5	Review of Annex II to the Protocol on Environmental Protection	Australia	X			
IP019	ATCM 11	Chairman's Report from the Miami Meeting (March 17-19, 2008) on Antarctic Tourism	IAATO	X			
IP020	ATCM 15	Education website for schools: www.discoveringantarctica.org.uk	United Kingdom	X			
IP021	ATCM 14 CEP 8(d)	Update on Wildlife Awareness Information for Aircraft Operations in Antarctica	United Kingdom	X			
IP022	CEP 4	Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Ukraine	X			
IP023	ATCM 13 CEP 9(a)	Australia's Antarctic and Southern Ocean Climate Science	Australia	X			
IP024	CEP 4	Annual Report Pursuant to the Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Japan	X			
IP025	CEP 4	Informe Anual de España de acuerdo con el Artículo 17 del Protocolo al Tratado Antártico sobre Protección del Medio Ambiente	Spain				X
IP026	CEP 6(b)	Initial Environmental Evaluation for Installation of Earth Station at Maitri, Schirmacher Oasis, Antarctica	India	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP027	ATCM 4	Report to the Thirty first Antarctic Treaty Consultative Meeting by the Head of the Australian Delegation in her capacity as Representative of the Depositary Government for the Convention on the Conservation of Antarctic Marine Living Resources	Australia	X			
IP028	ATCM 4	Report to the Thirty first Antarctic Treaty Consultative Meeting by the Head of the Australian Delegation in her capacity as Representative of the Depositary Government for the Agreement on the Conservation of Albatrosses and Petrels	Australia	X			
IP029	ATCM 13	Australia's Antarctic Scientific Research Programme 2007/08	Australia	X			
IP030	CEP 7(e)	Final Report on the Research Project "Risk assessment for Fildes Peninsula and Ardley Island and the development of management plans for designation as Antarctic Specially Protected or Managed Areas"	Germany	X			
IP031	ATCM 5	Creación, a nivel Parlamentario, de la Comisión Especial sobre Intereses Uruguayos en la Antártida	Uruguay				X
IP032	ATCM 9	Aspectos atinentes a la asistencia de los náufragos del M/S Explorer en la Antártida	Uruguay				X
IP033	CEP 8(a)	Medidas preventivas para evitar la introducción de especies alienas en la Antártida, en cumplimiento del Anexo II del Protocolo	Uruguay				X
IP034	CEP 4	Informe Anual de Acuerdo al Artículo 17 del Protocolo al Tratado Antártico sobre la Protección del Medio Ambiente Periodo 2007 - 2008	Uruguay				X
IP035	CEP 9(b)	Environmental Monitoring of the Indian Permanent Station-Maitri In Pursuant to the Article 17 of Protocol on Environmental Protection to the Antarctic Treaty	India	X			
IP036	CEP 4	Annual Report pursuant to the Protocol on Environmental Protection to the Antarctic Treaty	Belgium	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP037	ATCM 13	Collaborations with Other Parties in Science and Related Activities during the 2007/2008	Korea (ROK)	X			
IP038	ATCM 14	Korea Icebreaker, Araon	Korea (ROK)	X			
IP039	ATCM 15	Korean Public Awareness Program 'Pole-to-Pole Korea'	Korea (ROK)	X			
IP040	ATCM 13	Finland's Antarctic Research Strategy	Finland	X			
IP041	ATCM 11 CEP 6(b)	A decade of Antarctic tourism: Status, change, and actions needed	ASOC	X			
IP042	CEP 4	Annual Report pursuant to Article 17 of The Protocol on Environmental Protection to The Antarctic Treaty	South Africa	X			
IP043	ATCM 5	On development of Draft Law "On regulation of activities of the Russian citizens and legal entities in the Antarctic"	Russian Federation	X		X	
IP044	CEP 6(b)	Results of Russian studies of the subglacial Lake Vostok during the season 2007-2008	Russian Federation	X		X	
IP045	CEP 6(b)	On obtainment of permit to authorize activities of the Russian Antarctic Expedition for the period from 2008 to 2012	Russian Federation	X		X	
IP046	ATCM 10	Preliminary results of the Russian studies under the IPY Program in 2007 and during the season 2007/2008	Russian Federation	X		X	
IP047	ATCM 13	Variability of Antarctic climate	Russian Federation	X		X	
IP048	ATCM 13	Report on scientific studies in the Antarctic at the second stage of the Subprogram "Study and research of the Antarctic" in 2003-2007	Russian Federation	X		X	
IP049	CEP 6(b)	Initial Environmental Evaluation for Installation of Wind Energy Generators (WEG) at Maitri, Schirmacher Oasis, Antarctica	India	X			
IP050	ATCM 13 CEP 9(a)	Antarctic Peninsula: rapid warming in a pristine environment	United Kingdom	X			
IP051	CEP 9(a)	Antarctic Peninsula: Ice shelf status	United Kingdom	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP052	ATCM 11 ATCM 9	Report of Main Engine Failure of FV Argos Georgia in the Ross Sea on 24 December 2007	United Kingdom	X			
IP053	ATCM 14	Australia's Antarctic Air Service 2007/08	Australia	X			
IP054	CEP 9(b)	The Recovery of Drilling Fluid from a Deep Ice-core Drilling Site on James Ross Island, Antarctic Peninsula	United Kingdom France	X			
IP055	CEP 4	Report on the Implementation of the Protocol on Environmental Protection as Required by Article 17 of the Protocol	United Kingdom	X			
IP056	ATCM 13 CEP 9(a)	Impacts of Climate Change on Antarctic Ecosystems	ASOC	X			
IP057	CEP 7(e)	Area Protection: Time for Action	ASOC	X			
IP058	ATCM 11 ATCM 5 CEP 13	Antarctic Shipping	ASOC	X			
IP059	ATCM 10 CEP 5	International Polar Year 2007-2008 Planning Document: 2008 and Beyond	SCAR	X			
IP060	ATCM 13	SCAR Lecture - Space Weather and its Effects.	SCAR	X			
IP061 rev.1	ATCM 4	Report of the Depositary Government of the Antarctic Treaty and its Protocol in accordance with Recommendation XIII-2	United States	X			
IP062	ATCM 13 CEP 9(a)	Antarctic Climate Change and the Environment: A Progress Report	SCAR	X			
IP063	ATCM 14	Japan's New Icebreaker, the Shirase: Outline and Performance	Japan	X			
IP064	ATCM 13 CEP 7(e)	Grove Mountains, East Antarctica - between scientific research and environmental protection	Romania	X			
IP065 rev.1	ATCM 10	IPY 2007-2008. The Results of the Polar Research Workshop - The European Polar Research Icebreaker Aurora Borealis – FP7 Project The 2nd International Symposium of Polar Scientific Research	Romania	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP066 rev.1	ATCM 13	Romanian scientific activities in polar areas in cooperation with U.S./National Science Foundation and Denmark/Copenhagen University - Greenland 2008	Romania	X			
IP067	ATCM 13	Romania application for SCAR admission	Romania	X			
IP068	CEP 4	Annual Report of China Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	China	X			
IP069	ATCM 13	The Czech activities on the James Ross Island in austral summer 2007/08	Czech Republic	X			
IP070 rev.1	ATCM 4	Progress with the implementation of the Agreement on the Conservation of Albatrosses and Petrels	ACAP	X			
IP071	CEP 4	Annual Report Pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007-2008	Italy	X			
IP072	ATCM 13	Report on the Research Expedition of the Czech Geological Survey to Antarctica, 2008	Czech Republic	X			
IP073	ATCM 13	India's Antarctic Science Programme 2007-08	India	X			
IP074	ATCM 4	SCAR Annual Report 2007-2008	SCAR	X			
IP075	CEP 8(a)	Non-native Species Incursions at Scott Base, Antarctica	New Zealand	X			
IP076	ATCM 13	Asian Forum for Polar Sciences (AFoPS) Report to XXXI ATCM	Japan	X			
IP077	CEP 6(a)	Additional Information on draft CEE on proposed new Chinese Dome A Station in Antarctica	China	X			
IP078	ATCM 13	Highlights from Japanese Antarctic Research Expeditions (JARE) in 2007–2008	Japan	X			
IP079	ATCM 4	Report by the CCAMLR Observer to the Thirty-First Antarctic Treaty Consultative Meeting	CCAMLR	X			
IP080	CEP 12	Completion of a Four-year Campaign to Clean Up the Syowa Station Area	Japan	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP081	ATCM 11	Summary Report and Outcomes of IAATO's Marine Committee Meeting on Vessel Operations, Safety and Related Issues	IAATO	X			
IP082	ATCM 11 CEP 7(c)	Update on the Antarctic Peninsula Landing Site Use and Site Guidelines	IAATO	X			
IP083	ATCM 11	Regulation of Antarctic Tourism-- A Marine Perspective	IAATO	X			
IP084	ATCM 11	Land-Based Tourism and the Development of Land-Based Tourism Infrastructure in Antarctica: An IAATO Perspective	IAATO	X			
IP085	ATCM 11	IAATO Overview of Antarctic Tourism 2007-2008 Antarctic Season and Preliminary Estimates for 2008-2009 Antarctic Season	IAATO	X			
IP086	ATCM 11 ATCM 4	Report of the International Association of Antarctica Tour Operators 2007-2008 Under Article III (2) of the Antarctic Treaty	IAATO	X			
IP087	ATCM 14	Recent operational developments within the South African National Antarctic Program (SANAP)	South Africa	X			
IP088	ATCM 10 CEP 5	Antarctic Treaty Summit: Science-Policy Interactions in International Governance	IPY-IPO	X			
IP089	ATCM 4	Report Submitted to the XXXI ATCM by IUCN The International Union for Conservation of Nature	IUCN	X			
IP090	CEP 4	Annual Report of New Zealand pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty 2007/2008	New Zealand	X			
IP091	CEP 11	The COMNAP Fuel Manual, incorporating revised guidelines for fuel handling and storage in Antarctica	COMNAP	X			
IP092	ATCM 14	Information Paper on International Scientific and Logistic Collaboration in Antarctica	COMNAP	X			
IP093	ATCM 15 CEP 8(a)	Non-native Species Awareness Campaign: "Don't Pack a Pest" When Traveling to Antarctica	United States	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP094	CEP 7(e)	Ross Sea Heritage Conservation Project: Conservation of Shackleton's Hut, Cape Royds, ASPA 157	New Zealand	X			
IP095	ATCM 13	Scientific Research of Peru in the period 2007-2008 (Summer Season)	Peru	X			X
IP096	CEP 4	Annual Report pursuant to Article 17 of the Protocol on Environmental Protection to the Antarctic Treaty	Peru	X			X
IP097	CEP 9(b)	Antarctic Persistent Organic Pollutants. Notes on a Request from the Stockholm Convention	Chile	X			
IP098	CEP 8(a)	Survey on existing procedures concerning introduction of non native species in Antarctica	COMNAP	X			
IP099	ATCM 9	Search and Rescue in the Antarctic	COMNAP	X			
IP100	ATCM 9	The international collaboration in rescue action for evacuation of Bulgarian polar explorer from Antarctica	Bulgaria	X			X
IP101	CEP 6(b)	The ANDRILL Independent Environmental Audit	New Zealand United Kingdom	X			
IP102	CEP 6(b)	On the Issue of the Replacement of Fuel Tanks at Vernadsky Station	Ukraine	X			
IP103	ATCM 10	Cooperación internacional a través de actividades científicas argentinas y el Año Polar Internacional	Argentina				X
IP104	ATCM 13	Permafrost and Climate Change in the Maritime Antarctic (PERMANTAR) - an Excellent Example for International Collaboration	Bulgaria Spain	X			
IP105	CEP 6(b)	Plan de Manejo Ambiental Estación Maldonado Ecuador	Ecuador				X
IP106	ATCM 14	Manual de Primeros Auxilios para Zonas Polares	Ecuador				X
IP107	CEP 8(d)	Censos del Petrel Gigante del Sur Macronectes giganteus y las Skúas Catharacta spp en la Punta Fort Williams-Isla Greenwich y la Isla Barrientos, Shetland del Sur, Antártida	Ecuador				X

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP108	ATCM 9	Actividades y estudios exploratorios relacionados con los aspectos glaciológicos, el cambio climático, cartografía de zonas de riesgo y seguridad de las operaciones en la zona de Base O'Higgins, Península Antártica	Chile				X
IP109	ATCM 11 CEP 7(e)	Amundsen-Scott South Pole Station, South Pole Antarctic Specially Managed Area (ASMA No 5) First Year Management Report	United States	X			
IP110	CEP 7(e) CEP 8(a)	Report on Exploration of Antarctic Subglacial Aquatic Environments: Environmental and Scientific Stewardship	United States	X			
IP111	ATCM 10	International Polar Year - Census of Antarctic Marine Life (IPY CAML) New Zealand Ross Sea Marine Research Voyage	New Zealand	X			
IP112	ATCM 14	Neumayer Station III progress during the first season of construction 2007/2008	Germany	X			
IP113	ATCM 10	International Polar Year – Education and Outreach in New Zealand	New Zealand	X			
IP114	ATCM 9	Helicopter accident and air-borne medical evacuations during German summer season activities	Germany	X			
IP115	ATCM 9	Passenger Ship Safety - Development of Statutory Instruments Over Time and Key Requirements to Vessels as Function of Age and Size	Norway	X			
IP116	ATCM 15	The Graduate Certificate in Antarctic Studies course	New Zealand	X			
IP117	CEP 7(e)	The Admiralty Bay ASMA website	Brazil	X			
IP118	CEP 9(b)	Brazilian contribution to the Monitoring Programme for the Admiralty Bay Antarctic Specially Managed Area (ASMA Nº 1)	Brazil	X			
IP119	ATCM 5	Designation of Marine Protected Areas within the Antarctic Treaty Area	ASOC	X			
IP120	ATCM 4	Report of the Antarctic and Southern Ocean Coalition (ASOC)	ASOC	X			

Number	Ag. Items	Title	Submitted by	E	F	R	S
IP121	ATCM 9	The Fram incident	Norway	X			
IP122	ATCM 14 CEP 9(b)	Monitoring of Human Impacts at McMurdo Station, Antarctica	United States	X			
IP123	ATCM 15	Example of US IPY Education Project: Online Magazine for Polar Science in Schools	United States	X			
IP124	CEP 6(b)	Initial Environmental Evaluation "RMM-technology on recycling of solid food wastes at Ukrainian Antarctic Vernadsky station"	Ukraine	X			
IP125	CEP 5	South American Network on Antarctic Marine Biodiversity (BioMAntar)	Brazil	X			
IP126	CEP 7(e)	Report of the Deception Island Antarctic Specially Managed Area (ASMA) Management Group	Argentina Chile Norway Spain United Kingdom United States	X			
IP127	ATCM 4 CEP 14	COMNAP Report to ATCM XXXI	COMNAP	X			
IP128	ATCM 10	Indian IPY Activities	India	X			
IP129	ATCM 9	The international collaboration in the urgent action of the winterer substitution at the Station Vernadsky	Ukraine	X			
IP130	ATCM 9	Actividades argentinas asociadas al naufragio del M/S Explorer en la Antártida	Argentina				X
IP131	ATCM 15	International Course on Antarctic Navigation offered by Argentina	Argentina	X			X
IP132	ATCM 13	Primera Expedición Científica Venezolana al Continente Antártico	Venezuela				X
IP133	ATCM 13	Actividades de Hidrografía y Cartografiado de Venezuela en la Antártida	Venezuela				X

Secretariat Papers

Number	Ag. Items	Title	Submitted by	E	F	R	S
SP001 rev.2	ATCM 3 CEP 2	Agenda and Schedule	ATS	X			
SP002	ATCM 3	ATCM XXXI Annotated Agenda	ATS	X			
SP003 rev.2	ATCM 6 CEP 4	Secretariat Report 2007/08	ATS	X		X	X
SP004 rev.3	ATCM 6	Draft Secretariat Programme 2008/09	ATS	X	X	X	X
SP005	ATCM 6	Contributions to the Antarctic Treaty Secretariat 2006-2009	ATS	X	X	X	X
SP006	CEP 7(a)	Register of the Status of Antarctic Specially Protected Area and Antarctic Specially Managed Area Management Plans	ATS	X	X	X	X
SP007	ATCM 6	Manual for the Submission of Documents to the Antarctic Treaty Consultative Meeting and the Committee for Environmental Protection	ATS	X	X	X	X
SP008	CEP 6(b)	Annual list of Initial Environmental Evaluations (IEE) and Comprehensive Environmental Evaluations (CEE) prepared between April 1st 2007 and March 31st 2008	ATS	X	X	X	X
SP009	ATCM 5	The recommendations of the ATCM: survey of their status	ATS	X	X	X	X
SP010	ATCM 5	Review of ATCM Recommendations on Protected Areas	ATS	X		X	X
SP011	ATCM 5	Review of the Status of ATCM Recommendations on Environmental Issues other than Area Protection and Management	ATS	X	X	X	X
SP012	ATCM 16 CEP 4	Electronic Information Exchange System	ATS	X		X	X
SP013	ATCM 9	Sinking of M/S Explorer. Flag State Investigation	ATS	X	X	X	X

ANNEX K

List of Participants

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