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Co-conveners' report of the Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System Prague, Czech Republic, 27-28 June 2019

Attachments:
Atcm42_att107_e.doc: Attachment A: Draft Report on the State of the Antarctic Protected Area System
Atcm42_att108_e.doc: Attachment B: Available Science Outputs

Co-conveners' report of the Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System

Prague, Czech Republic, 27-28 June 2019

Information Paper submitted by Australia, SCAR and the United States as the workshop co-conveners and the Czech Republic as the workshop host

Summary

This paper presents the co-conveners' report of the Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System, held in Prague, Czech Republic from 27-28 June 2019.

Background

Article 12(g) of the Protocol on Environmental Protection to the Antarctic Treaty (Environmental Protocol) established a role for the Committee for Environmental Protection (CEP) to provide advice and formulate recommendations to the Parties on 'the operation and further elaboration of the Antarctic Protected Area system'. Annex V to the Environmental Protocol provides for the designation of Antarctic Specially Protected Areas (ASPAs) to protect 'outstanding environmental, scientific, historic, aesthetic or wilderness values, any combination of those values, or ongoing or planned scientific research'.

Article 3.2 of Annex V to the Environmental Protocol states that 'Parties shall seek to identify, within a systematic environmental-geographic framework, and to include in the series of Antarctic Specially Protected Areas' (ASPAs), areas with specified characteristics and values'.

The CEP has regularly expressed its desire to move towards a more systematic and holistic approach to the further development of the Antarctic protected areas system. The CEP has recognised the importance of drawing on the best available scientific information to inform its work, and the important role played by the Scientific Committee on Antarctic Research (SCAR) in providing high quality, independent scientific advice. SCAR has a strong interest in, and is actively involved in the development and dissemination of research to enhance the evidence-base to support Antarctic area protection in line with the provisions of Article 3.2 of Annex V.

At its 21st meeting in 2018 the CEP supported a proposal by Argentina, Australia, Belgium, Chile, China, the Czech Republic, France, Germany, Japan, New Zealand, Norway, the Russian Federation, the Scientific Committee on Antarctic Research (SCAR), the United Kingdom, and the United States to convene a joint SCAR / CEP workshop on further developing the protected area system. The Committee strongly supported the proposal, consistent with actions identified in the CEP Five-Year Work Plan and the CEP Climate Change Response Work Programme (CCRWP).

Workshop terms of reference

As agreed at CEP XXI, the workshop terms of reference were to:

1) Review the current status of the Antarctic protected area system.
2) Identify information and resources relevant to designating ASPAs within a systematic environmental-geographic framework.
3) Identify actions that could be taken to support the further development of the Antarctic protected area system.
4) Prepare a report for consideration by the CEP.

Planning and hosting of the workshop

Following agreement at CEP XXI, a steering committee was established to plan the workshop, in consultation with CEP Members and Observers and relevant SCAR contacts. The steering committee included:

- Steven Chown (SCAR President) – steven.chown@monash.edu
- Kevin Hughes (CEP Vice-Chair, United Kingdom) – kehu@bas.ac.uk
- Ewan McIvor (Australian CEP representative) – ewan.mcivor@aad.gov.au
- Chandrika Nath (SCAR Executive Director) – chandrika@scar.org
- Birgit Njåstad (CEP Chair) – birgit.njaastad@npolar.no
- Polly Penhale (United States CEP representative) – ppenhale@nsf.gov
- Antonio Quesada (Spanish CEP representative) – cpe@mineco.es
- Alvaro Soutullo (Uruguayan CEP representative) – cientifica.director@iau.gub.uy
- Aleks Terauds (Chief Officer, SCAR Standing Committee on the Antarctic Treaty System) – aleks.terauds@aad.gov.au
- Zdenek Venera (Czech Republic CEP representative, host country representative) – zdenek.venera@geology.cz

The Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System was hosted by the Czech Ministry of the Environment at the Masaryk College in Prague, Czech Republic, from 27-28 June 2019.

The workshop involved a series of presentations, open discussion sessions and break-out groups (see work program at Appendix 1). Several background papers were submitted by participants. These were not presented during the workshop, but were made available to all participants as recommended background reading (see summaries at Appendix 2).

The workshop was attended by 50 participants, including 9 representatives from SCAR, representatives from 19 CEP Members and representatives from 3 CEP Observers (see list of participants at Appendix 3). The SCAR Secretariat facilitated online workshop registrations and access to workshop documents.

Opening remarks

The workshop was officially opened by Mr Vladislav Smrž, Deputy Minister for Policy and International Relations, Ministry of the Environment, Czech Republic, who extended a warm welcome to all participants. Mr Smrž emphasised the importance of protecting the Antarctic environment, noting that the former Czechoslovakia had signed the Environmental Protocol in 1992, and the Czech Republic as a successor state then ratified the Protocol in 2004. He recalled that environmental protection was a priority for Czech scientific research in Antarctica, and that Czech scientists were involved in preparations to propose an ASPA on James Ross Island. Mr Smrž noted that the workshop would help shape the practice to support the further development of the Antarctic protected area system, and that results of the workshop would be valuable inputs to the upcoming CEP meeting.

The SCAR President, Prof Steven Chown also provided opening remarks. He thanked the host for their generosity in making the workshop arrangements, and noted that SCAR was pleased to be co-convening the workshop with the CEP and to be doing so in the 60th anniversary year of the signing of the Antarctic Treaty. Prof Chown also highlighted SCAR's long interest in area protection and the science underlying it, and the long-standing fruitful relationship between SCAR and the Antarctic Treaty Parties.

The CEP Chair, Ms Birgit Njåstad highlighted the Antarctic Treaty Parties' long-standing commitment to a protected area system in Antarctica. She noted that the concept of protected areas and a protected area system had evolved substantially since the Antarctic Treaty was signed. Ms Njåstad outlined the CEP's important role in implementing Annex V and the significant progress made in that regard, but recalled that the Committee had recognised the need for further work on a strategic and overarching approach to area protection.

Term of reference #1 – Review the current status of the Antarctic protected area system

The workshop sessions dedicated to discussions under ToR#1 were convened by Mr Ewan McIvor (Australia). Mr McIvor noted that this term of reference recognised the value of taking stock of the current situation, as an important step in considering the future of the protected area system and how to get there.

Under this term of reference participants considered a draft Report on the State of the Antarctic Protected Area system that had been prepared by the workshop steering committee, and a supporting presentation by Dr Kevin Hughes (United Kingdom). The draft report described the series of ASPAs currently designated under Annex V. The report was intended to support the role of the CEP to provide advice to the ATCM on 'the operation and further elaboration of the Antarctic Protected Area system', consistent with Article 12(g) of the Environmental Protocol. Participants also held discussions, first in break-out groups and then in plenary, on several related questions posed by the workshop steering committee.

Key points raised in discussion

Workshop participants welcomed the draft report and the presentation by Dr Hughes. Participants noted that the draft report presented an objective outline of the current state of the protected area system, supported by relevant sources of information, and that it did not represent an evaluation or assessment. It was also noted that, consistent with the workshop terms of reference, the report focussed on the current series of 72 ASPAs and not on other area protection and management measures established under the Environmental Protocol or other elements of the Antarctic Treaty system (e.g. ASMAs or CCAMLR marine protected areas).

Overall, the workshop recognised that the current series of 72 ASPAs continue to serve an important purpose, but also acknowledged that those areas had, in general, not been identified in a systematic manner. It was noted that initiating further work to systematically develop the protected area system, in conjunction with the application of other tools available within the ATS, would assist to advance the comprehensive and lasting protection of Antarctica's outstanding values.

Key points raised in discussions under ToR#1 are presented below:

What should be the goal(s) for the further development of the Antarctic protected area system? What would a series of protected areas as envisaged in Article 3.2 of Annex V look like? (Key points arising from discussion of these questions are combined.)

- implement the obligations of the Environmental Protocol (particularly Articles 2 and 3 and Annex V)
- ensure integration with other tools available under the Environmental Protocol and other Antarctic Treaty system instruments
- take a systematic-environmental geographic approach
- consider all the values and categories of area recognised in Annex V, not just those that have received attention to date, in a balanced manner
- include ASPAs that cover multiple values (multi-criteria)
- take a precautionary approach and proceed on the basis of the best available information, while acknowledging that there may be gaps and that additional information may lead to future changes in the protected area system
- consider threats when prioritising areas for ASPA designation, while noting that not all ASPAs need to consider threats
- provide for protection of values for which immediate threats are not known but which may occur in the future (e.g. unique values, hot spots, values with restricted distributions or 'representative' areas)
- consider potential future environmental threats such as climate change or increased human activity in identifying sites for protection
- address the synergistic pressures of climate change and other pressures, such as non-native species, transport and land use

- involve international cooperation and spread the resource burden between Parties
- implement a protected areas system that is implementable, manageable and cost-effective
- have larger protected areas and greater total area, but managed efficiently (including less resource intensive reviews)
- be flexible / dynamic, able to adapt and accommodate change over time
- include inviolate areas or zones within ASPAs
- protect ecological and evolutionary processes
- include greater redundancy in protecting biodiversity at all taxonomic levels
- conserve habitats as well as species
- protect microbial diversity
- consider climate change and protect potential refugia
- be informed by input from experts.

How does the current series of ASPAs compare to that vision?

Strengths

- Annex V provides for the special protection of a diverse and comprehensive range of values – even if not all the values it recognises have been addressed in existing ASPAs, the framework is there to do so.
- The ASPA mechanism allows for special protection of areas subject to immediate threats and also longer-term special protection of 'representative' areas.
- The ASPA mechanism is flexible, and can accommodate larger or smaller areas, and different zones.
- Although existing ASPAs were developed in an ad hoc rather than systematic way, sites were identified by experts in fields relevant to the values.

Limitations

- Around half of terrestrial species are not represented in ASPAs.
- Most ASPAs cover only a small area, and the total area contained within ASPAs is very small.
- There are no ASPAs in the interior of Antarctica.
- Protection of refugia is not as complete as it could be.
- Current ASPAs do not account for all taxonomic levels.
- There has not been an assessment of the effectiveness of current ASPAs in protecting the values for which they are designated.
- Geological and aesthetic values are not well represented in ASPAs.

Term of reference #2 – Identify information and resources relevant to designating ASPAs within a systematic environmental-geographic framework

In the workshop sessions dedicated to discussion under ToR# 2, convened by Dr Aleks Terauds (SCAR), participants heard several presentations from the SCAR Delegation, including from an expert in Systematic Conservation Planning. Discussions were held in plenary and were guided by several questions. Summaries of the presentations and discussions are provided below.

Presentation summaries

Dr Yan Ropert-Coudert: Information layers from meso- and top predators to identify nearshore areas of ecological importance.

Dr Ropert-Coudert presented on three main initiatives: i) outputs from the Census of Antarctic Marine Life and the Biogeographic Atlas of the Southern Ocean; ii) Important Marine Mammal Areas (IMMAs); iii) Retrospective Analysis of Antarctic Tracking Data (RAATD) and outlined their relevance to identifying nearshore areas of ecological importance.

Prof Peter Convey: Recent terrestrial science outputs to support the development of area protection

Prof Convey presented information on existing and developing science outputs of relevance to the systematic development of the Antarctic protected area system. These included systematic environmental-geographic frameworks endorsed by the CEP, research and outputs relating to identifying values under Article 3.2 of Annex V and spatial layers relating to pressures facing the Antarctic environment.

Dr Heather Lynch: Data quality and data acquisition for systematic protected area development in Antarctica

Dr Heather Lynch presented an overview of the current and future capabilities of remotely sensed data and advantages of their use for improving knowledge of Antarctic values of relevance to the development of Antarctic area protection. Dr Lynch also outlined the capability and applicability of the Mapping Applications for Penguin Population and Projected Dynamics (MAPPD - www.penguinmap.com).

Dr Aleks Terauds (on behalf of the University of Queensland): Preliminary results of a conservation planning expert elicitation

On behalf of the University of Queensland (UQ), Dr Terauds presented the preliminary results of the SCAR/UQ Expert Elicitation on Conservation Planning in Antarctica. He noted that this was an ongoing SCAR/UQ collaboration.

Prof Mandy Lombard: Systematic Conservation Planning: What are the Advantages?

Prof Lombard presented an overview of Systematic Conservation Planning (SCP), with a focus on application in Antarctica and its advantages. Prof Lombard highlighted the ability of SCP to apply explicit criteria for implementing conservation action on the ground, especially scheduling, recognising not all areas identified for conservation could be addressed at once. She noted that the effectiveness of SCP comes from: efficiency in using limited resources to achieve conservation targets; its defensibility and flexibility in the face of competing or divergent land uses, its accountability in allowing decisions to be critically reviewed and it transparency. She also noted that Antarctica had a 'head start' on similar processes elsewhere, because there was an existing international agreement that provided for the designation of protected areas and that gives explicit guidance on values and categories of area to be considered for special protection, several protected areas had already been designated, there was good science support through SCAR and other bodies, and a willingness of Antarctic Treaty Parties to consider this as an important issue.

The workshop noted the intention that full presentation summaries would be made accessible via the SCAR website.

Key points raised in presentation discussions:

Workshop participants welcomed the presentations, and acknowledged the information presented as extremely useful in improving understanding of science related outputs, capabilities and resources available to support the systematic development of area protection in Antarctica. Prof Lombard's presentation on Systematic Conservation Planning generated considerable discussion. Specific points discussed following this presentation included:

- how costs could best be incorporated into the process as a parameter and what these costs might represent
- the adequacy of spatial data that might be required for a first pass of a systematic conservation planning process
- challenges associated with the implementation of outputs from a systematic conservation planning process and making a transition from outputs to policy change
- the utility of the SMART (specific, measurable, adequate, realistic and timely) objectives in the context of Annex V Article 3.2
- the appropriate scale for applying Systematic Conservation Planning analyses, particularly in the context of continental versus regional scales
- the importance of stakeholder consultation in any Systematic Conservation Planning process

- the benefits of ensuring the process is repeatable and transparent.

Key points raised in discussion of guiding questions:

The workshop reaffirmed the importance of drawing on the best available science to support the further development of the protected area system. It was noted that there is a considerable body of existing relevant information, which represents a sounds basis for moving forward, but also that there is value in continuing to build the level of scientific information over time. It was acknowledged that SCAR will continue to play a fundamental role in this regard.

How can science support the further development of the protected area system?

- Through the provision of best-available science, including spatially explicit data on the values in Article 3.2 of Annex V.
- By recognising the importance of improved integration between social and natural sciences to support systematic conservation planning processes.
- Ensure that research and research outputs are integrated with information from other stakeholders (COMNAP, IAATO, ASOC) to support feasible development of the protected area system.
- By developing and implementing systematic conservation planning methods to provide examples of potential protection scenarios and candidate sites for ASPA designation.
- By informing and supporting ASPA implementation and design, including the review and monitoring of values to be protected.

What relevant science is currently available or planned?

- Relevant science outputs were identified under the following categories:
    - existing published research into Antarctic Specially protected areas
    - spatial datasets on the values outlined Article 3.2 of Annex V
    - other relevant data sets
    - data portals or online databases
    - monitoring

A list of such datasets and other information is provided in Attachment B, noting that this list is not intended to be a comprehensive list of all available relevant data and information, and reflects those data identified during the workshop. The workshop recognised the value of build on this list and making such datasets and information available in a comprehensive repository (see Recommendation 3).

How can the best scientific advice and information be made available and inform discussions on further developing the Antarctic protected area system? How can this be kept up to date?

- Use (and development) of websites and/or portals for accessing information, including but not limited to the Antarctic Environments Portal.
- Regular updates to the CEP, based on relevant research, by Parties, SCAR, other Observers as appropriate.
- Inclusion of progress towards systematic protected area development as a standing item on the CEP Agenda and/or five-year work plan.

How could threats be addressed in the further development of the Antarctic protected area system?

- Improved understanding of threats through targeted research.
- Threats could be used to assist in the prioritisation of new ASPA designation (within a Systematic Conservation Planning framework).
- Some threats (for example non-native species) can be mitigated through management, but spatially explicit threat data can also be incorporated directly into a Systematic Conservation Planning process.

Term of reference #3 – Identify actions that could be taken to support the further development of the Antarctic protected area system

Under ToR#3 participants held discussions, first in break-out groups and then in plenary, on several related questions posed by the workshop steering committee. There was a high level of support during the workshop for initiating dedicated work to support the further systematic development of the protected area system, through close collaboration between the CEP and SCAR, and involving close engagement with other stakeholders. Such work would aim to develop a series of ASPAs that address the criteria in Article 3.2 of Annex V, that are designed on the basis of the best available science to maximise the protection of values in light of current and anticipated future pressures, and that are dynamic. It was emphasised that any future protected area system would need to be implemented effectively and efficiently, which would require the broad involvement of Parties and international collaboration, particularly for areas that are not regularly accessed by national Antarctic programs.

Key points raised in these discussions are presented below:

Where would responsibility appropriately lie for identifying/ proposing/ managing/ monitoring/ revising an expanded protected area system?

- Responsibility for managing protected areas and addressing the provisions of Article 3.2 formally lies with the Parties.
- A wide body of knowledge already exists to support identification of sites through systematic processes (e.g. systematic conservation planning).
- The SCAR / scientific community in collaboration with other stakeholders (e.g. COMNAP, IAATO, ASOC) could play a greater / enhanced role in providing the scientific support needed to assist with the identification and prioritisation of sites.
- The provisions of Annex V allow for SCAR and CCAMLR to propose ASPAs. It was noted that although SCAR has not independently proposed the designation of an ASPA, SCAR has had considerable input into a number of proposals for ASPA designations.

What role could CEP take? How best could related work be approached?

- Article 12 of the Protocol sets out the role of the CEP in connection with the operation and further elaboration of the Antarctic protected area system.
- To implement a new approach to systematic ASPA designation the CEP could establish a dedicated program of work, such as through a more formal subgroup / ICG, which would also involve collaboration with SCAR and engagement with other stakeholders).
- The considerable resources needed for implementing the requirements of the current series of ASPAs (including the five-yearly review and monitoring). Participants identified a variety of approaches to reduce this burden (e.g. use of new technologies such as remote sensing, and enhanced collaboration).
- The CEP could explore effective ways of information sharing such as using the CEP mailing list to inform or announce upcoming reviews of management plans, to solicit appropriate input.
- Potential sources of external support might be pursued to deliver relevant activities such as workshops. The need to ensure that science needed to support further elaboration of the protected area system is included in the five-year work plan and afforded appropriate priority was noted.

What is the role of SCAR?

- The discussion re-iterated the key contribution of the diverse communities within SCAR towards the development of a systematic approach to area protection.

Is further guidance required to assist with identifying, designating/de-designating protected areas?

- It was suggested that the CEP could review and rationalise its existing protected area guidance materials. This could also involve consideration of guidance for the five-yearly review of management plans.

How can priorities be determined to pace out the work? What kind of time frame can progress be made over?

- An appropriate first stage could be for the CEP to make a decision on what process to adopt to support further elaboration of the protected area system. Developing a strategy or framework is estimated to take an initial period of 12 months and involve initial discussions with interested stakeholders.
- Commencing implementation, with SCAR providing scientific input, might then take a period of 2-5 years. A scoping/pilot study could be conducted relatively rapidly. This would be followed by a more detailed iterative process involving stakeholders and incorporating comprehensive datasets and analysis.
- A recurrent theme in the workshop was the need to consider the balance between addressing immediate threats and reflecting all the values set out in Article 3.2 of annex V.

How can progress be measured?

- The CEP five-year work plan could reflect key milestones to be achieved during intersessional periods and discussed annually at the CEP.
- The 30th anniversary of the adoption of the Protocol could provide an opportunity to reflect on the achievements of the protected area system and recent progress made towards its further elaboration.
- Assessing the effectiveness of the protected area system with regard to its delivery of the range of values set out in Article 3.2 of Annex V.

Recommendations arising

ToR#1 Review the current status of the Antarctic protected area system

Recommendation 1: That the CEP considers the draft Report on the State of the Antarctic Protected Area System (Attachment A), which is an objective report not an evaluation or assessment, and as appropriate, forwards the report to the ATCM in accordance with its role to provide advice on the 'operation and further elaboration of the Antarctic Protected Area system'.

ToR#2 Identify information and resources relevant to designating ASPAs within a systematic environmental-geographic framework

Recommendation 2: That the CEP encourages Members, SCAR and other Observers and Experts to prioritise and support further research that will build on the existing body of scientific evidence to support the further development of the protected area system in accordance with Article 3.2 of Annex V.

Recommendation 3: Recognising SCAR's role in facilitating access to data, that the CEP requests SCAR to consider establishing a repository of information relevant to identifying ASPAs within a systematic environmental-geographic framework (e.g. environmental datasets, human activity data, analyses of the implications of global pressures – see Attachment B).

ToR#3 Identify actions that could be taken to support the further development of the Antarctic protected area system

Recommendation 4: That the CEP initiates a program of work involving close engagement with SCAR and other stakeholders (e.g. COMNAP, IAATO, ASOC), to develop a framework for systematically developing the protected area system (e.g. to identify goals/objectives, related science requirements, priorities for actions to be taken by the CEP and Parties, timeframe for action, measures to evaluate progress).

Recommendation 5: That the CEP supports a program of work to review and rationalise its existing protected area guidance materials. This could also involve consideration of guidance for the five-yearly review of management plans.

Conclusions

The co-conveners consider that the workshop was highly constructive, both for facilitating productive discussions under the workshop terms of reference, and as an opportunity to build on the long-standing close collaboration between SCAR and the CEP. There was clear recognition of the value of continuing the effective engagement between SCAR and the CEP, in general, and particularly on the systematic further

development of the protected area system. There was a high level of engagement among participants throughout the two days, reinforcing the benefits of periodically convening workshops to allow dedicated and interactive discussions on significant issues.

Appendix 1. Work program

Time	Day 1 – Thursday 27 June 2019	Day 2 – Friday 28 June 2019
0800-0900	**Registration**	
0900-1030	**Session 1 (Convener – Ewan McIvor, Australia)** • Welcome (Host country representative) • Opening remarks (SCAR and CEP representatives) • Workshop background • *Workshop term of reference #1: Review the current status of the Antarctic protected area system* - Presentation: draft report on the State of the Antarctic protected area system (Dr Kevin Hughes, United Kingdom).	**Session 5 (Convener – Dr Polly Penhale, United States)** • Review of Day 1 • Introduction to Day 2 • *Workshop term of reference #3: Identify actions that could be taken to support the further development of the Antarctic protected area system* - Discussion: consider research and management needs and related actions that could be taken to support the further development and management of the Antarctic protected area system, taking into account climate change, consistent with the provisions of Article 3.2 of Annex V.
1030-1100	**Morning break**	
1100-1230	**Session 2 (Convener – Ewan McIvor, Australia)** • *Workshop term of reference #1: continued* - Discussion: consider the state of the current series of ASPAs with regard to the provisions of Article 3.2 of Annex V, and in light of the other provisions of the Environmental Protocol, with a view to informing a CEP report to ATCM on the status of the Antarctic protected area system, as identified in the CEP Five-Year Work Plan.	**Session 6 (Convener – Dr Polly Penhale, United States)** • *Workshop term of reference #3: continued*
1230-1400	**Lunch break**	

Time	Day 1 – Thursday 27 June 2019	Day 2 – Friday 28 June 2019
	recherche scientifique) - Presentation: Recent science outputs to support the development of area protection (Dr Peter Convey, British Antarctic Survey) - Presentation: Data quality and data acquisition in the context of Antarctic area protection (Dr Heather Lynch, Stony Brook University)	
1530-1600	**Afternoon break**	
1600-1800	**Session 4 (Convener – Dr Aleks Terauds, SCAR)** • *Workshop term of reference #2: continued* - Presentation: Preliminary results from the SCAR-coordinated expert elicitation process on systematic conservation planning (Presentation by Aleks Terauds on behalf of the University of Queensland) - Presentation: Systematic Conservation Planning: What are the advantages? (An external perspective: Prof Mandy Lombard, Nelson Mandela University) - Discussion: consider information and resources relevant to advancing the provisions of Article 3.2 of Annex V. This may include, for example, considering existing classifications and other research available, underway or planned that is relevant to developing the concept of a systematic environmental-geographic framework, as well as discussion of current and future threats to Antarctic values (e.g. associated with human activities in the area or broader pressures such as climate change).	**Session 8 (Convener – Dr Chandrika Nath, SCAR)** • *Workshop term of reference #4: continued* • Next steps • Close

Appendix 2. Summaries of background papers

Antarctica's protected areas: towards a planned and integrated future (United Kingdom)

For over 50 years the Antarctic protected area system has operated in a region governed through multi-national agreement by consensus. We examined the Antarctic Treaty System to determine how protected area designation under a multi-party framework may evolve. The protected area system, as legislated through the Protocol on Environmental Protection to the Antarctic Treaty and the Convention on the Conservation of Marine Living Resources, remains underdeveloped, and the distribution of ASPAs proposed by individual Parties has largely reflected the location of Parties' research stations rather than being designated as part of a systematic approach. Despite a recent increase in protected areas proposed by two or more Parties, the rate of ASPA designation has more than halved in the past 12 years. We explore scenarios for the future development of Antarctic protected areas and suggest that the early engagement of Parties in collaborative area protection may strengthen the protected areas system. We suggest that current logistical capacity may be sufficient to deliver a more representative protected area system across the continent, particularly if management activities can be shared across Parties, new technologies are used for area monitoring and management requirements are rationalised.

A snapshot of terrestrial biodiversity protection in Antarctic Specially Protected Areas (SCAR, Australia)

This paper summarises recent research undertaken as a collaboration between the Australian Antarctic Program (AAP) and the Scientific Committee on Antarctic Research (SCAR). In this research, the authors present the first continent-wide assessment of terrestrial biodiversity protection within Antarctic Specially Protected Areas (ASPAs). Despite ASPAs covering less than 2% of Antarctica, 44% of species (including seabirds, plants, lichens and invertebrates) are found in one or more protected areas. However, protection was found to be regionally uneven and biased towards easily detectable and charismatic species like seabirds. The authors conclude that systematic processes to prioritize area protection - using the best available data - will maximize the likelihood of ensuring long-term protection and conservation of Antarctic biodiversity.

Topic Summary: CEP Discussions on Further Developing the Antarctic Protected Area System (Australia)

This paper presents a summary of CEP meeting documents and discussions on the topic of further developing the Antarctic protected area system, consistent with the provisions of Article 3.2 of Annex V to the Environmental Protocol and the Committee's role under Article 12(g) of the Environmental Protocol to provide advice to the Parties on 'the operation and further elaboration of the Antarctic Protected Area system'. It presents several observations that, in Australia's view, are worth recalling during the Committee's ongoing consideration of this topic.

Systematic expansion of the Antarctic protected areas network (ASOC)

This paper examines some key issues concerning protected areas in Antarctica and suggests practical ways forward with a focus on Antarctic Specially Protected Areas (ASPAs). There is a general understanding that the list of Antarctic protected areas needs expanding according to a "systematic environmental-geographic framework" as required in the Protocol's Annex V, Art. 3(2). Conceptual progress has been made through the consideration of Environmental Domains and Antarctic Conservation Biogeographic Regions (ACBRs). Databases of relevant information are available and the methodology for systematic conservation planning is well established. Currently there are no legal, scientific or practical arguments to delay the expansion of the protected area network in Antarctica. ASOC recommends that ATCPs commit to a timeline of key activities for expanding the system and increasing protection levels for all ACBRs and beyond.

Antarctic Protected Areas: A Humanities and Social Sciences Perspective (SCAR)

This paper summarises contemporary projects related to Antarctica's protected areas that are being undertaken by researchers in the Humanities and Social Sciences and under the SCAR Standing Committee on the Humanities and Social Sciences (SC-HASS). Research being undertaken by environmental historians,

social psychologists, anthropologists, sociologists, economists, legal scholars, and political scientists provides important socio-cultural and political context for any discussions about protection, and the values that underlie the designation of protected areas.

Recognition of Ecosystem Services in Terrestrial Antarctica and trade-offs (Spain)

This paper presents the initial developments made by the Spanish N.A.P. towards the identification, recognition and assessment of Ecosystem Services (ES) in Terrestrial Antarctica and their growing trade-offs in order to support a dynamic and integrative Area Protection System in the continent. Cumulative increase of human activities on the continent (science, logistics and recreation) impose a pressure to Antarctic conservation values (intrinsic, wilderness aesthetic, historical and educational) while providing a range of cultural services with direct and indirect beneficiaries. Levels of present non-consumptive uses (e.g. research and visitation) can still erode Antarctic values either contained or excluded in the Area Protection System; and so their extent ought to be balanced against non-use benefits (e.g. presence and bequest values). Non-monetary values largely outweigh monetary values, but the latter can be quantified and managed accordingly. Identification of the main drivers of change (positive and negative) provides the tools to build future scenarios and support decision-making to develop a strategic management. Moreover, future development of local and regional cartographic assessments can contribute to the protection of Antarctic Ecosystems by setting spatially-explicit assessments of nearby land uses and local activities around Protected Areas that directly and indirectly affect the effectiveness of the Protected Area System. The applicability of the ES methodology and all its practical considerations are open for discussion in the SCAR/CEP Protected Areas Workshop.

Appendix 3. Workshop participants

Name	Organisation / CEP Member
Steven Chown	SCAR*
Peter Convey	SCAR
Amanda Lombard	SCAR
Heather Lynch	SCAR
Chandrika Nath	SCAR*#
Hanne Neilsen	SCAR
Luis Pertierra	SCAR
Yan Ropert-Coudert	SCAR
Aleks Terauds	SCAR*#
Claire Christian	ASOC
Ricardo Roura	ASOC
Ewan McIvor	Australia*#
Phillip Tracey	Australia
Francois Andre	Belgium
Annick Wilmotte	Belgium
Birgit Njåstad	CEP*
Marcelo Leppe	Chile
Veronica Vallejos	Chile
Jianye Tang	China
Michelle Rogan-Finnemore	COMNAP
Daniel Nyvlt	Czech Republic
Premysl Štepánek	Czech Republic
Petra Tachecí	Czech Republic
Zdenek Venera	Czech Republic*
Atte Moilanen	Finland
Stefan Hain	Germany
Heike Herata	Germany
Fritz Hertel	Germany
Amanda Lynnes	IAATO
Maurizio Azzaro	Italy
Paolo Nicolai	Italy
Kota Anjo	Japan
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