Considerations for the systematic expansion of the protected areas network
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Submitted by ASOC

Summary

Antarctica’s terrestrial, coastal and marine environments are under increasing pressure from the expansion of research stations and associated facilities, fishing, tourism, whaling, shipping activities, potentially from some sorts of research (such as iron-seeding and acoustic/air-gun equipment), possibly soon from biological prospecting. Emerging effects of global climate change have also become apparent in parts of Antarctica and the Southern Ocean and include actual warming as well as ocean acidification. In this paper, ASOC notes that despite these pressures, the system of Antarctic Specially Protected Areas (ASPAs) is still inadequate to protect the values listed in Annex V of the Protocol. To expand the ASPA system, ASOC suggests that the ATCM should initiate a five to ten year systematic conservation planning process to identify and designate new ASPAs. As an appendix to the paper, ASOC has compiled an online database of datasets that it hopes could be useful in designating new ASPAs.

Introduction

The significance of adopting a protected area response that matches current environmental pressures is becoming all the more apparent, and urgent, as human presence continues to grow across a range of terrestrial, coastal and marine environments, and as impacts from climate change increase.

In this document we discuss some of the issues concerning the effectiveness of the protected area regime under the Protocol, and provide some considerations for the systematic expansion of the protected areas network, with a focus on Antarctic Specially Protected Areas (ASPAs). As an appendix, ASOC also provides information on an online database of information relevant to the creation of ASPAs that it has assembled. We hope that this can be a resource for the CEP and the ATCM in expanding the ASPA network.

Increasing area protection needs in Antarctica

A range of political, economic and social drivers - mostly originating outside the Antarctic region - result in ever increasing pressures on the Antarctic environment. These often result in demonstrable changes on the state of the environment, ranging from historic overexploitation of seals and whales to present day degradation of wilderness in some areas. Some of the processes at play are as old as human presence in the Antarctic - for instance those related to exploration, site occupation, and various forms of natural resource exploitation and use. Antarctica’s terrestrial, coastal and marine environments are under increasing pressure from the expansion of research stations and associated facilities, fishing, tourism, whaling, shipping activities, potentially from some sorts of research (such as iron-seeding and acoustic/air-gun equipment), possibly soon from biological prospecting. Emerging effects of global climate change have also become apparent in parts of Antarctica and the Southern Ocean and include actual warming as well as ocean acidification.

Following the adoption of the Antarctic Treaty and related conservation instruments (including CCAS, CCAMLR and the Protocol), international responses across the Antarctic Treaty systems have followed broadly comparable trends. These have included, among other regulations including prohibitions, the use of marine living resources and the conduct of mineral resource activities; additional protection of particularly sensitive species or ecosystems; and the adoption of protected areas and other forms of area-based regulation of activities.

1 Lead authors Claire Christian, Ricardo Roura and Howard Weir.
Not all of these tools, however, have fully delivered their promise. Over the years ASOC has repeatedly promoted an expansion of the protected area regime as they apply to both the terrestrial and marine environment, with respect to the relevant instrument (CAMLR Convention or the Protocol and its Annex V). These areas have the function to protect representative, unique or sensitive areas - "hot spots" as well as "cold spots" - and also the wilderness and scientific value these areas embody and, increasingly, the value they have with respect to serving as reference areas and building resilience on the face of climate change, and other ecosystem services.

**The promise of the protected area regime in Antarctica**

The protected area regime has evolved since the entry into force of the Antarctic Treaty in 1961 through a range of instruments - the 1964 Agreed Measures, CCAS, and CCAMLR. By 1991, immediately after the adoption of the Protocol of Environmental Protection to the Antarctic Treaty (the Protocol) but prior to the signature of Annex V, there were at least five different protected area categories in the Antarctic Treaty, but the overall system was underdeveloped.\(^2\) At the time, noting the ad hoc manner in which the protected area system had developed, ASOC stated:

> ASOC supports a thorough review of the Antarctic Treaty's system of protected areas, and moreover, urges the Treaty parties to embark on a proactive programme of designating areas that need or merit special protection. ASOC firmly believes that the new system must incorporate an inviolate category to provide for maximum protection. In addition, ASOC supports the designation of generally larger areas to buffer against activities adjacent to a protected site.\(^3\)

The protected regime received some impetus with the adoption of the Protocol and subsequently of its Annex V. In practice, and paradoxically, the adoption of PAs has slowed down since then. There are at present 72 ASPAs (2016 data), about 70% of which were first adopted before 1991 (there are also 6 ASMAs all adopted since 2002).

It should be noted that while the Protocol declares Antarctica as "a natural reserve, devoted to peace and science" this designation by itself does not reduce the obligation to provide additional protection to other areas as mandated by Annex V, Art. 3 (1) and (2), and also by Annex V, Art. 4. The slow expansion of the protected area regime could be explained, perhaps, by teething problems in the implementation of the Protocol and setting up its institutions nationally and internationally; and by the work involved in bringing up to standards the management plans of earlier PAs, and by the period review of individual PAs as mandated by Annex V. However, one of the obstacles - a lack of a strategic environmental framework outlined in Annex V to support protected area development, particularly in the terrestrial environment, has been completed through the work of New Zealand.\(^4\)

In 2008, noting lack of progress across the protection of terrestrial and marine areas, ASOC suggested that:

> ...the CEP be urgently tasked with providing the ATCM with advice on which parts of Annex V are not yet fully represented with designated Protected Areas, in addition to those parts 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.\(^5\)

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\(^2\) Sites of Special Scientific Interest (SSSIs), Specially Protected Areas (SPAs), MPAs (Multiple-use Planning Areas), HSMs (Historic Sites, and Monuments), and Specially Reserved Areas (SRAs), which were defined but never used. There were also Areas of Special Tourism Interest (ASTIs), which were never listed or defined. (See ATCM XVI, IP063).

\(^3\) ATCM XVI, IP063, Antarctic Protected Areas, ASOC (1991).


ASOC has also highlighted these issues for the ATCM and noted the potential for a more active ASPA planning and designation process to address among others inviolate areas and the protection of wilderness values, and tourism management. ASOC also continued to advocate for the overall, systematic expansion of the protected area regime, underscoring also the need to establish Marine Protected Areas.

Over the past several years, there has been increasing attention paid to the gaps in the Antarctic Specially Protected Area (ASPA) system in the academic literature. These papers have identified issues such as the lack of protected areas in all of the identified Antarctic Conservation Biogeographic Regions (ACBRs), a decline in the rate of designation of ASPAs, and the absence of a systematic planning process for developing new ASPAs despite the availability of the information required for such a process. The ATCM itself has recognised other gaps in the system, such as with Resolution 5 (2015), which asked the CEP to consider whether the Important Bird Areas (IBAs) developed by SCAR and BirdLife should be included within the ASPA system (see WP 37 Antarctic Specially Protected Areas and Important Bird Areas submitted to this meeting). All these deficiencies point to the need to expand the network of protected areas.

It should be noted that the process of developing the PA network under the Protocol contrasts with the regional-scale planning process undertaken by the CCAMLR with respect to Marine Protected Areas. The CCAMLR process aims to establish a representative network of protected areas over much of the CCAMLR Convention area, and despite some difficulties it is making progress. (This process is discussed in IP 149, ASOC update on Marine Protected Areas in the Southern Ocean 2016-2017). We suggest that the ATCM/CEP take the basic idea of this process and conducts its own strategic conservation planning assessment within a reasonable period of time, which we suggest should be within a 5 to 10 year range.

Conclusions

In 1991, on the verge of the adoption of the Protocol, ASOC noted that "More areas, of larger size, should receive protected area status." In the intervening years (more than 25!) the situation has not improved markedly in terms of establishing a range of protected areas that able to withstand actual and possible future threats - even though threats are not always specific of particular sites. In fact, the situation has deteriorated in that pressures on the Antarctic region are greater now than then, and in all likelihood they will increase. One of the problems faced by Antarctica and the Antarctic Treaty system is the future opportunity cost of present day inaction - many areas not afforded protection today may lose their special values in the future, as pressures increase and combine in what may be seen as a sort of perfect Antarctic storm.

Recommendations

7 ATCM XXXVIII/CEP XVIII, IP109, Antarctic Tourism and Protected Areas, ASOC (2015)
8 ATCM XXXIX/CEP XIX, IP080A Systematic Approach to Designating ASPAs and ASMAs, ASOC (2016)
10 Shaw et al. 2014.
11 Hughes and Grant 2017.
13 ATCM XVI, IP063, Antarctic Protected Areas, ASOC.
• Continue to populate the list of relevant available metadata (thus improving the classification of Antarctic Environments created using Environmental Domains Analysis and its application to protected area systematic development);

• Initiate a five to ten year systematic conservation planning process aiming to establish a network of protected areas in the Antarctic Treaty Area in accordance with Annex V, Art. 3 (1) and (2);

• Complement this process with the use of other area-based protection instruments, including ASMAs and those available under other instruments of the Antarctic Treaty system (such as CCAMLR MPAs).
Appendix 1: Database of information relevant to the creation of ASPAs

This database is based upon Supplementary Table S1 Major existing, and status of potential, biodiversity datasets across the Antarctic region from Coetzee et al. 2017. We have expanded that list to include other sources of data with possible relevance to the creation of ASPAs. ASOC welcomes feedback on and updates to the database. The database can be accessed at the following link: http://bit.ly/2oSHKw8. Sample entries are below.

Table 1. Sample entries from ASOC database of information relevant to the creation of ASPAs.

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Category (-Climate change data -Species data -Human presence/activity)</th>
<th>Description</th>
<th>Data format</th>
<th>Author/Data Owner Contact Information</th>
<th>How to Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mapping Application for Penguin Populations and Projected Dynamics</td>
<td>Antarctic species</td>
<td>Circumpolar data on the location, distribution, and colony size of emperor, Adelie, gentoo, and chinstrap penguins.</td>
<td>GIS shapefiles</td>
<td><a href="mailto:info@penguinmap.com">info@penguinmap.com</a></td>
<td><a href="http://www.penguinmap.com/mapppd">http://www.penguinmap.com/mapppd</a></td>
</tr>
<tr>
<td>Antarctic Biodiversity Database (ABD)</td>
<td>Antarctic species</td>
<td>SCAR initiative. Searchable database that combines marine data from SCAR-MarBin with biodiversity databases from the Australian Antarctic Division</td>
<td>varying, 9015 metadata files with over 500,000 records</td>
<td>Project Manager Anton Van de Pute <a href="mailto:antonarctica@gmail.com">antonarctica@gmail.com</a></td>
<td><a href="http://biodiversity.aq/">http://biodiversity.aq/</a></td>
</tr>
<tr>
<td>Antarctic Digital Database</td>
<td>topography</td>
<td>Compilation of the best available geographic information on Antarctica. Mapping tool available</td>
<td>Shapefile, KML, Geotiff</td>
<td><a href="mailto:info@scar.org">info@scar.org</a></td>
<td><a href="http://www.scar.org/data-products/add">http://www.scar.org/data-products/add</a></td>
</tr>
<tr>
<td>Polar Data Catalogue</td>
<td>varied</td>
<td>over 1,750 metadata sets</td>
<td>varied</td>
<td><a href="https://www.polardata.ca/pdcinput/public/contactus">https://www.polardata.ca/pdcinput/public/contactus</a></td>
<td><a href="https://www.polardata.ca/pdcsearch/">https://www.polardata.ca/pdcsearch/</a></td>
</tr>
<tr>
<td>LTER - Long term ecological research</td>
<td>varied</td>
<td>McMudo and Palmer station are primary areas of focus</td>
<td>varied</td>
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<td><a href="https://portal.lternet.edu/nis/home.jsp">https://portal.lternet.edu/nis/home.jsp</a></td>
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</tbody>
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