

The Antarctic Committee for Environmental Protection: past, present, and future

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ABSTRACT. The Committee for Environmental Protection (CEP) was established under the Protocol on Environmental Protection to the Antarctic Treaty to advise the Antarctic Treaty Consultative Meeting (ATCM) on matters relating to protection of the Antarctic environment. After almost a decade of work, the committee has consolidated itself as a highly relevant and important component of the Antarctic Treaty system. Through a detailed analysis of meeting reports, as well as first-hand information and experience, this study describes the activities of the CEP during its first nine years of operation, provides likely explanations for some trends observed and proposes future scenarios by highlighting major challenges and opportunities. In particular, the instigation of strategic planning shows potential for launching a new era of CEP activities focused on the environmental issues requiring the greatest attention. This overview will assist readers to understand the role of the CEP as the main environmental advisor to the ATCM, and the reasons for the Antarctic Treaty parties to support the Committee’s work to foster a spirit of cooperation as a prerequisite for continuing protection of the Antarctic environment.

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Introduction

The Protocol on Environmental Protection to the Antarctic Treaty (also known as the Madrid Protocol and hereinafter referred to as the protocol) was adopted on 4 October 1991 and entered into force on 14 January 1998 with its Annexes I to IV. These are entitled ‘Environmental impact assessment’, ‘Conservation of Antarctic fauna and flora’, ‘Waste disposal and waste management’, and ‘Prevention of marine pollution’ (Antarctic Treaty 1991). A fifth annex, ‘Area protection and management’, was adopted on 18 October 1991 and entered into force on 24 May 2002, and a further annex, ‘Liability arising from environmental emergencies’, was adopted in 2005 but has not yet been ratified by all consultative parties to the Antarctic Treaty.

The protocol commits parties to the comprehensive protection of the Antarctic environment, declares Antarctica to be a natural reserve dedicated to peace and science, and defines environmental principles that must be considered in the planning and conduct of all activities in the Antarctic Treaty area.

Acknowledging that implementing a comprehensive environmental framework would require specialist environmental, scientific and technical advice, the protocol established (through Article 11) the Committee for

Environmental Protection (CEP). The CEP is responsible for providing advice and formulating recommendations to Antarctic Treaty Consultative Meetings (ATCM) on the implementation of the protocol and its annexes (Article 12).

At the eighteenth ATCM in Kyoto in 1994, the treaty parties established the Transitional Environmental Working Group (TEWG), to anticipate and prepare for the entry into force of the protocol and to deal with those items on the ATCM agenda that, under Article 12 of the protocol, were to be handled by the future committee (ATCM 1994). The TEWG met three times in conjunction with ATCMs and laid valuable groundwork for the operation of the CEP. The first CEP meeting was held in 1998 in Norway and at the time of writing nine annual meetings have been held (ATCM 1998–2006; CEP 1998–2006).

The committee currently comprises representatives of the 32 nations that have ratified the protocol: 28 consultative parties to the Antarctic Treaty (those entitled to participate in decision-making in the ATCM) and four non-consultative parties (a list of CEP Member countries can be found at www.cep.aq Section ‘Member countries’).

The following organisations attend CEP Meetings as official observers: SCAR (Scientific Committee on Antarctic Research), COMNAP (Council of Managers of National Antarctic Programmes), the Scientific Committee of CCAMLR (Convention for the Conservation of Antarctic Marine Living Resources), UNEP (United Nations Environmental Programme), IUCN (International Union for the Conservation of Nature), IAATO (International Association of Antarctica Tour Operators), ASOC (Antarctic and Southern Ocean Coalition), IHO (International Hydrographic Organisation), the WMO (World Meteorological Organisation), and the interim secretariat

Table 1. Number of working papers and information papers submitted under CEP agenda items between 1998 and 2006.

Agenda item	Total number of WP submitted CEP I–9	Total number of IP submitted CEP I–9
General matters		
a) Operation of the CEP	7	7
b) Compliance with the Madrid Protocol	11	166
Matters covered by Annex I (Environmental impact assessment)		
a) Consideration of draft CEEs	10	16
b) Other matters covered by Annex I	15	70
Matters covered by Annex II (Conservation of Antarctic fauna and flora)	29	26
Matters covered by Annex III (Waste disposal and waste management)	0	36
Matters covered by Annex IV (Prevention of marine pollution)	5	12
Matters covered by Annex V (Area protection and management)	134	72
Environmental monitoring	8	29
Emergency response and contingency planning	9	9
Co-operation with other organisations	1	17
Inspection reports	2	0
Biological prospecting	0	6
Data and exchange of information	5	5
State of the Antarctic environment report	8	8
International Polar Year	1	0
CEP Strategic discussion	1	1
TOTAL	246	480

The high number of IPs under ‘Compliance with the Madrid Protocol’ is associated to the annual reports submitted under Article 17 of the Protocol; while the high number of WPs under ‘Matters covered by Annex V’ is due to the requirement that new and revised management plans be submitted in WPs. Secretariat papers (SP), first introduced at CEP 9, were counted as IP.

of the recently agreed Agreement on Conservation of Albatrosses and Petrels (ACAP). Observers may submit documents and participate in the discussions of the CEP. Although they do not participate in the taking of decisions, observers make a valuable contribution to the breadth and quality of discussion.

The CEP normally meets once a year in conjunction with the ATCM, but it can also conduct its business at other times as necessary. Formal meetings have simultaneous interpretation in the four official Antarctic Treaty languages: English, Spanish, Russian and French. The product of CEP deliberations is therefore advice to the ATCM - the outcomes of CEP work take effect when implemented through legally binding measures, procedural decisions or hortatory resolutions of the ATCM. The final report of CEP meetings, covering all matters considered at the session, reflecting the views expressed, and detailing advice for the ATCM as appropriate, is presented by the CEP Chair to the ATCM for consideration. The ATCM has the mandate to authorise actions that are binding on treaty parties and, in the case of matters relating to protection of the environment, considers the CEP’s advice in its decision making. The CEP final report is published as an appendix to the ATCM final report, and is subsequently made available to the public.

CEP meetings consider working papers and information papers submitted by members and observers. Working papers contain the proposals and recommendations that form the basis of most of the Committee’s discussions, while information papers usually raise matters for members’ attention, rather than requiring specific action

(Table 1 summarises the topics raised by the meeting papers). An archive of meeting papers and final reports is available from the CEP website (www.cep.aq ‘Document Archive’).

The CEP rules of procedure allow for the establishment of open-ended contact groups (that is open to all CEP Members) to deal with specific issues. These are often matters requiring detailed technical analysis. Intersessional contact groups (ICGs) have operated between annual meetings each year since the first meeting of CEP in 1998, and have undertaken a considerable amount of work. After the 2004 meeting, the committee established an internet-based discussion forum to facilitate coordination of intersessional discussions (CEP 2004). The forum is available for discussion of any topic and to date has been most utilised for review of new and revised protected area management plans.

A CEP chair is elected from among the representatives and may serve a maximum of two two-year terms. In addition to chairing meetings and supervising secretariat support to the committee, the chair coordinates intersessional work overall, communicating with members individually and collectively via ‘CEP Circulars’, and ensuring that the CEP website is fully up to date. Two vice-chairs, also drawn from among the representatives, assist the chair.

Issues on the CEP agenda

Annual CEP meetings follow a provisional agenda prepared at the previous meeting and endorsed by the ATCM. While the agenda has varied slightly during the last

nine years it has generally addressed issues within the following major subject areas:

- Operation of the CEP
- Environmental impact assessment (Annex I)
- Conservation of Antarctic fauna and flora (Annex II)
- Waste disposal and waste management (Annex III)
- Prevention of marine pollution (Annex IV)
- Area protection and management (Annex V)
- Environmental monitoring and reporting
- Inspection reports
- Emergency response and contingency planning
- Cooperation with other organisations
- General matters

The following is a brief overview of developments related to these agenda points during the period 1998 to 2006.

Operation of the CEP

This item received the most attention during the early meetings during which the committee's *modus operandi* was being formalised. After basic procedures and operational guidelines had been established, these issues naturally demanded less attention. Having matured with experience gained over the past nine years, the committee is again beginning to turn its attention to the way it conducts its business, with the intention of achieving greater efficiency and effectiveness from both annual meetings and intersessional work. This reflects the very high workload currently before the CEP.

A practical product stemming from discussion of operational matters is the recent development of an online CEP handbook, comprising a compilation of CEP procedures and agreed guidelines (The handbook is available at <http://cep.ats.aq/cep/>). CEP representatives have indicated that this simple tool will be of great value in assisting their work.

Environmental impact assessment (Annex I)

Matters covered by Annex I have been considered in two major streams: 'Consideration of draft comprehensive environmental evaluations (CEEs)' and 'Other matters covered by Annex I'.

With regard to the first of these, Annex I establishes an environmental impact assessment (EIA) process under which activities with the potential to have the highest level of impact (more than minor or transitory) are assessed through a Comprehensive Environmental Evaluation (CEE) which must be circulated for the consideration of all parties and the CEP. In early CEP meetings draft CEEs were discussed in plenary, but the demands on meeting time of such complex discussions led to the creation of a process for preliminary consideration through Intersessional Contact Groups (ICG). When such an ICG is established, the convenor presents an agreed report to the meeting in plenary, supplemented when necessary by further comments by proponents and discussion by members. The consideration of draft CEEs constitutes a major responsibility for the CEP, which has to date provided advice to the ATCM on the environmental aspects of ten significant proposals such

as the establishment of new Antarctic stations, major scientific projects, and extensive inland traverses. The CEP's consideration of proposals is an important opportunity to ensure that proponents achieve the best environmental outcomes by refining practical environmental protection measures on the advice of a wide and expert consultative forum.

With regard to the second major stream, 'Other matters covered by Annex I', the *Guidelines for environmental impact assessment in Antarctic*, represents the first practical tool produced by the CEP under this agenda item (ATCM 1999; CEP 1999). The guidelines assist in the application of the EIA requirements of Annex I to Antarctic operations. As an EIA must be prepared for all proposed activities in Antarctica, the guidelines have been used extensively by parties and by non-governmental operators. Further intersessional work presented at the CEP meeting in 2005 resulted in a revised version of the guidelines, containing additional guidance for the assessment of the possible cumulative impacts arising from multiple activities at multiple locations undertaken by one or more national or private operators (CEP 2005).

Conservation of Antarctic fauna and flora (Annex II)

As indicated in Table 1, Annex II has been the main focus of working papers (other than those presenting new and revised management plans or providing annual reports), generating significant and complex debates. Members have identified within its text several issues deserving further discussion and elaboration.

Specially protected species

The formal discussion of specially protected species, a mechanism present in Annex II to provide additional protection to vulnerable species, was first raised at the CEP in 1999 and continued for four years (CEP 1999, 2000, 2001, 2002). In 2002, the committee initiated a review by SCAR of the current status of all species occurring in the Antarctic Treaty area (ATCM 2002: Resolution 1).

While Annex II provides for native species of mammals, birds and plants to be designated as 'specially protected', the Annex does not specify criteria for listing or delisting, or indicate a mechanism for managing or protecting species on the list. To fill this void and to ensure that proposals for specially protected species are handled in a consistent manner, during the meeting held in 2005, the committee developed *Guidelines for CEP consideration of proposals for new and revised designations of Antarctic specially protected species*, under which risk of extinction is to be assessed using criteria established by the IUCN (CEP 2005).

The guidelines were first applied at the CEP in 2006, at which the committee recommended delisting the Antarctic fur seal (*Arctocephalus gazella*) and the sub-Antarctic fur seal (*Arctocephalus tropicalis*) (CEP 2006). This decision was based on scientific advice from SCAR that the two species had recovered from earlier over-exploitation and, importantly, acknowledged

the comprehensive protection afforded to all seals by the general provisions of the protocol and its annexes. Measure 4 (ATCM 2006), 'De-listing of fur seals as specially protected species', was adopted by the ATCM, based on the CEP's advice on that matter, and requires parties to reflect the agreed action - to remove fur seal species from Appendix A to Annex II - through their respective domestic legal processes. Further application of the guidelines is anticipated in coming years, with SCAR to submit information relating to the status of the southern giant petrel (*Macronectes giganteus*), the macaroni penguin (*Eudyptes chrysolophus*) and other species.

Quarantine and non-native species

The Antarctic continent has been little impacted by the effects of non-native species or disease but this does not mean that the Antarctic is free from such risks. Annex II includes provisions to prohibit or strictly regulate introductions. A workshop on introduction of diseases to Antarctic wildlife held in Hobart in 1998 and two subsequent periods of intersessional work resulted in a report that provided Antarctic operators and the international scientific community with advice on the sources and possible adverse effects of the introduction of diseases to the Antarctic.

A second workshop on non-native species in the Antarctic held in New Zealand in April 2006 arose from discussion of the issue at the CEP in 2005 (CEP 2005). The key issues raised at the workshop included, but were not limited to, the transfer of species both into and within the Antarctic, and the need for practical preventive measures. The committee strongly supported the main recommendations arising from the workshop, noting that the issue of non-native species should be given the highest priority consistent with the high environmental standards set out in the protocol, and has added the issue as a standing item on its agenda.

Practical measures to avoid disturbance of Antarctic fauna

Living in harsh conditions, Antarctic wildlife can be susceptible to disturbance from human activities. The CEP in 2004 endorsed *Guidelines for the operation of aircraft near bird colonies in Antarctic* which draw on the established practice of several national operators (ATCM 2004: Resolution 2). The guidelines provide recommended operating procedures to minimise the disturbance of wildlife by aircraft.

Waste disposal and waste management (Annex III)

Annex III details requirements for the management of waste generated in the Antarctic through present operations, and the clean up of wastes remaining from past activities. Discussion of these issues has been a lower priority of the CEP meetings. Information papers have been mainly concerned with progress reports on clean-up activities carried out by national programmes, although several recent papers have discussed remediation

techniques that may be applicable to waste disposal sites across Antarctica.

The relatively lower priority given to Annex III reflects that these issues are also considered in more operational forums, such as COMNAP. An example of this was the first Workshop on Waste Management in Antarctica, convened by COMNAP's subsidiary Antarctic Environmental Officers Network (AEON), during the meeting of COMNAP held in Hobart in 2006. However the potential for climate warming to accelerate the exposure of past waste disposal sites as ice and snow melts, and the mobilisation of contaminants, was recognised during the CEP 'futures' workshop held before the 2006 meeting as an important challenge facing treaty parties and the committee (see point below Strategic planning).

Prevention of marine pollution (Annex IV)

Prevention of marine pollution received consideration by the CEP in 2004, when the committee discussed the application to the Antarctic of the International Maritime Organisation (IMO) guidelines for ships operating in Arctic ice-covered waters. The issue had been previously discussed at a meeting of experts (ATME) on Antarctic shipping guidelines held in London, in 2000, and will be of relevance when Annex VI on liability arising from environmental emergencies enters into force.

Recent consideration of matters relating to prevention of marine pollution in the CEP and ATCM has resulted in several positive outcomes, including the adoption of:

Resolution 3 (ATCM 2005), recommending that parties replace bulk fuel facilities currently lacking secondary containment with double-skinned tanks or provide them with adequate bunding and have adequate oil spill contingency plans in place.

Decision 8 (ATCM 2005), committing the ATCM to consult with the IMO regarding mechanisms for restricting the use of heavy fuel oil in Antarctic waters; and

Practical guidelines for ballast water exchange in the Antarctic Treaty area, (ATCM 2006: Resolution 3; ATCM 2006: Decision 2).

Area Protection and Management (Annex V)

Protected Areas

Annex V continues and refines a framework for the designation and management of Antarctic protected areas that commenced in the 1960s. All Antarctic Specially Protected Areas (ASPAs) and Antarctic Specially Managed Areas (ASMAs) declared under Annex V must have a management plan and these must be reviewed every five years. With over 70 ASPAs and ASMAs in place, and with new areas still being designated, consideration of new and revised management plans for protected areas is a substantial continuing body of work for the CEP (an updated list of ASPAs and ASMAs can be found at www.ats.aq).

There was much debate about the criteria and methodology to be applied to proposals for designating

protected areas during early CEP meetings, resulting in an ICG that produced *Guidelines for the implementation of Article 3, Annex V of the Environmental Protocol: Antarctic Specially Protected Areas* (Special ATCM 2000: Resolution 1). These detailed criteria and procedures, drawing on the concept of environmental risk, assist with identifying and proposing candidate ASPAs. Similar work is required to provide specific guidance for establishing ASMAs, an area type that is likely to see greater application for the purposes of minimising impacts from overlapping operations.

Systematic environmental and geographic framework

Discussion of the 'systematic environmental-geographic framework' (SEGF), a concept introduced by Article 3 of Annex V as the basis for designating ASPAs, has been continuing since the CEP in 2000 (CEP 2000). Although no formal recommendations have yet been passed to the ATCM, the SEGF concept continues to evolve. Environmental domains analysis, an analytical technique that combines available physical environmental data (for example mean annual air temperature, slope, landforms) to define areas exhibiting similar characteristics, is being applied to provide a preliminary assessment of the extent to which existing protected areas are representative. This work is very promising, having potential beyond protected area management to assist with understanding and protection of the Antarctic environments.

Site guidelines for visitors

Discussion of the implications and management of Antarctic tourism has traditionally been confined to the ATCM's Tourism Working Group but in recent years the CEP has been asked to advise on environmental implications of that expanding activity. The committee now has a continuing responsibility for considering the suitability and adequacy of site guidelines prepared to help manage environmental pressures at specific locations visited frequently by tour operators. Guidelines for 12 sites are currently in place and it is expected that guidelines for further sites will be developed in the future (ATCM 2005: Resolution 5; ATCM 2006: Resolution 2). Both the ATCM and CEP will need to consider how this management tool will contribute to broader strategies for both tourism management and area management (current versions of site guidelines are available at www.ats.aq, section 'Topics').

Other agenda items

As indicated above, the majority of the discussion during CEP meetings and intersessional periods has dealt with issues related to the protocol's annexes, particularly I, II and V. The remaining agenda items deal with issues that relate to requirements or issues arising from the main body of the protocol.

The topics of environmental monitoring and state of the Antarctic environment reporting have received considerable attention through papers and intersessional work, and have recently been drawn together into a single

agenda item. Work still needs to be done on identifying the most important attributes to monitor in order to help assess changes in the Antarctic environment and the need for management intervention.

The CEP considers the environmental aspects of the reports of formal treaty inspections. These reports provide a good indication of the on-ground application and effectiveness of measures developed around the meeting room table and will continue to play an important role. For example, a recent report resulted in the above-mentioned recommendation on fuel storage and handling.

Emergency response and contingency planning has received some attention, but these discussions have not yet led to practical advice or recommendations by the ATCM. These operational issues are more specifically dealt with by COMNAP and its subordinate Antarctic Environment Officers' Network.

CEP achievements

Advice and recommendations to the ATCM

Since its inception in 1998, the CEP has provided advice to its parent body on a broad range of issues. The CEP's work has led to 22 measures, 19 resolutions and 8 decisions of the ATCM. That is to say, since 1998 almost half of the provisions regulating human activities in Antarctica have directly stemmed from the work of the CEP. In particular, these figures indicate that almost 90% of the measures (the only provisions intended to be legally binding once they have been approved by all the Antarctic Treaty consultative parties) adopted since 1998 are related to the CEP's work.

Environmental advice for Antarctic operators

The CEP has provided Antarctic operators with numerous practical environmental management tools, including:

- Guidelines for the preparation of management plans for Antarctic Specially Protected Areas* (CEP 1998).
- Guidelines for EIA in Antarctica* (CEP 1999, 2005).
- Guidelines for implementation of the framework for protected areas set forth in Article 3, Annex V of the Environmental protocol* (CEP 2000).
- Guidelines for handling of pre-1958 historic remains whose existence or present location has not been established* (CEP 2001). (These give guidance for the notification and interim protection of potentially significant historic remains associated with the 1957/58 International Geophysical Year and earlier activities in Antarctica).
- Guidelines for the operation of aircraft near bird colonies in Antarctica* (CEP 2004).
- Guidelines for CEP consideration of proposals for new and revised designations of Antarctic Specially Protected Species under Annex II to the Protocol* (CEP 2005).
- Practical Guidelines developing and designing environmental monitoring programmes in Antarctica* (CEP 2005).

Practical guidelines for ballast water exchange in the Antarctic Treaty area (CEP 2006).

Site guidelines for visitors in Antarctica (CEP 2005, 2006).

Improved work practices

As it has evolved, the CEP has adapted its procedures by incorporating new items into its agenda, seeking advice or support from the ATCM, and by adopting new technology to manage its records and intersessional work. The CEP has also used workshops to address particular issues: for example, the second workshop on Antarctic protected areas (Lima, 1999), as well as the workshop on non-native species in the Antarctic (Christchurch, 2006) arose from CEP recommendations or discussions.

Cooperation among members

The CEP has operated very much with a focus on sound environmental outcomes rather than on national interest, although this occasionally hampers debate, and has promoted international exchange and cooperation (for example through the increasing preparation of joint working papers or information papers by two or more members). While only two joint papers were presented at the first CEP (CEP 1998), during the ninth CEP in 2006, twelve papers were presented by two or more members/observers (CEP 2006). Similarly there has been a growing bilateral exchange of environmental officers from national Antarctic programmes, and joint Antarctic expeditions to investigate environmental issues have been organised. Links between the CEP and official observers have also strengthened - particularly with SCAR and COMNAP, which have contributed over 40 meeting papers.

Use of technology

The CEP has seized upon recent advances in technology, especially those associated with the internet, and has incorporated them into its business practices. The CEP website and the online discussion forum are examples of the use of technology to assist with administering the committee's work. The application of computer programs to address particular issues, such as the environmental domains analysis of Antarctica and the creation of an online system to facilitate the state of the Antarctic environment reporting, has commenced and shows great potential for further advancement.

Current and future scenarios for the CEP

High workload

One of the main challenges facing the CEP is the growing size and complexity of its meeting workload: the first CEP dealt with 12 working papers and 30 information papers, and reported its discussions in 61 paragraphs of the final report (CEP 1998); the ninth CEP considered 38 working papers, 68 information papers and three secretariat papers and presented its final report in 213 paragraphs (CEP 2006). Although the CEP has increasingly used ICGs to improve the efficiency of its meetings it is apparent that,

without additional steps being taken, its meeting workload could soon exceed the five days traditionally allocated.

In particular, there is a need for new alternatives to address issues requiring more detailed and lengthy discussions than is possible on the floor of the annual meetings. The establishment of web-based forums to coordinate discussion of new or revised management plans has made some progress in addressing this issue, but considerable meeting time is still devoted to the discussion of individual plans. At recent meetings the consideration of information papers has by necessity been reduced only to cursory introduction; further reduction may be required so that meeting time can focus on the substantive issues presented in working papers.

As the CEP and Antarctic Treaty Secretariat continue to develop their working relationship, further opportunities to divert tasks from the CEP meeting may become clear. In particular, the Secretariat could usefully provide greater support to intersessional activities, including work by intersessional contact groups and subsidiary bodies provided for under the CEP's Rules of Procedure.

Participation

More active participation by all parties to the protocol is required if the CEP is to be a truly representative body as intended by the protocol. Historically only a few delegations have developed proposals for consideration by the committee. For example, six delegations (roughly a fifth of CEP participants) account for nearly 70% of all working papers submitted to the CEP, seven nations have never submitted a working paper, and another seven have contributed only one working paper.

Composition of the committee

The CEP is obliged, through inference from Articles 11 and 12 of the protocol, to develop its advice to the ATCM on the basis of scientific, technical and environmental expertise. However advice is generally developed by CEP representatives who, though likely to be experts in some fields, are not experts in all fields. A mechanism for commissioning specific advice from experts inside, or outside, the Antarctic Treaty system would be a valuable addition to the CEP's toolbox. As decisions made at CEP/ATCM meeting tables must be implemented in the harsh Antarctic environment, on-ground experience is also helpful in ensuring that the practicalities of implementation are taken into account.

An additional challenge arises in maintaining the CEP's independence from the political discussions of its parent body. Recent meetings have seen instances in which political and legal issues have been introduced to discussion, when such considerations are the domain of ATCM as the policy-making forum. Future work of the CEP will be most valued if it can be seen to be based on objective assessment of environmental issues.

Rolling review of annexes

At the ATCM in 2002, the CEP was requested to commence a rolling review of annexes to the protocol,

starting with Annex II (ATCM 2002). The committee's report was presented at the ATCM in 2004 (ATCM 2004) but, after three annual meetings, the ATCM has not yet completed its consideration. In the absence of advice from the ATCM to the contrary, it is expected that the CEP will be required to continue with the rolling review when Annex II is finalised. Annex I and Annex V seem to be the most likely candidates for future reviews, since extensive work has already been done on them in the form of interpretative guidelines.

Transfer of issues from the ATCM

Two significant issues, previously addressed by the ATCM are likely to require attention from the CEP in coming years. These are the environmental aspects connected to tourism and the practical aspects of liability. The growth of Antarctic tourism since the early 1990s has motivated an increasing interest in it by the ATCM. The ATCM in 2003 commissioned a meeting of experts, which took place in Tromsø (March 2004) to deal exclusively with this issue (ATCM 2003: Decision 5). As a result, some working papers presented at CEP VII specifically addressed aspects of Antarctic tourist activities, and the above-mentioned site guidelines were discussed, adopted and reviewed during CEP in 2005 and 2006 (CEP 2005, 2006).

When Annex VI enters into force, the matter of environmental liability will have to be addressed. Under Annex VI the CEP is required to provide advice to the ATCM concerning the costs of response action to environmental emergencies. The committee will have to address difficult questions such as 'What level of environmental remediation is adequate?'

Strategic planning

In 2004, the committee briefly discussed the need to tailor its future work to reflect the main environmental challenges in Antarctica (CEP 2004). This debate was followed by extensive discussions at the following meeting, which resulted in a workshop on Antarctica's future environmental challenges being held prior to the 2006 meeting. The workshop incorporated presentations on some of the environmental issues facing Antarctica over the next 15 years arising from external pressures, such as climate change, and internal pressures from the range of human activities in Antarctica. Discussions surrounding the actions the CEP could take to address these issues continued during the CEP meeting, and resulted in the establishment of an ICG tasked with developing a prioritised five-year work plan. This work has the potential to guide a new era of CEP activities focused on the issues requiring the greatest attention from the ATCM's environmental advisory body.

At the time of writing, most CEP Members participating in this ongoing intersessional discussion have assigned high priority to addressing the effects on the Antarctic environment of introduced species, tourism and non-government activities, global climate change and global pollutants. Improving the efficiency of the CEP's procedures has also been identified as an important objective.

Conclusion

After almost a decade of work the CEP has consolidated itself as a highly relevant and important component of the Antarctic Treaty system. It has achieved this through a range of actions: creating, implementing and adjusting its own procedures; identifying and addressing problematic matters arising from the protocol; exercising flexibility in addressing new issues; producing practical tools for environmental management and protection; and capitalising on improved means of electronic communication. Broad participation in the 'futures' workshop and associated committee meeting discussions is a clear indication that members agree on the need to take strategic action to identify and tackle continuing and forthcoming challenges.

The future will bring new challenges and opportunities for the protection of the Antarctic environment that is, alongside the maintenance of peace and the freedom of scientific research, a fundamental of the Antarctic Treaty system. In rising to these challenges, the CEP will need to build on its strength as the ATCM's main advisor on protection of the Antarctic environment, and at the same time recognise when the best environmental outcomes will be achieved by drawing on other relevant advice from within and outside the Antarctic Treaty system. The responsibility and challenge lie with Antarctic Treaty parties to ensure that the work of the CEP continues to foster the spirit and principles of Antarctic cooperation, and that it remains productively focused on the protection of the Antarctic environment and the environmental principles of the protocol.

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