The Madrid Protocol at Thirty: Where Do We Go From Here?

**The Madrid Protocol at Thirty: Where Do We Go From Here?**

**Information Paper submitted by ASOC**

***Summary***

The Protocol has long been recognised as one of the most significant international environmental treaties ever signed. However, much has changed since the Protocol was signed, including the emergence of the twin crises of biodiversity loss and climate change. What is needed now and in the next thirty years is a renewed commitment from ATCPs to taking precautionary action to protect the Antarctic environment and dependent and associated ecosystems, using all the tools available to them. This includes taking action on protected areas, tourism, vessel pollution, and climate change, among others. There has been only slow progress on these areas at the ATCM in recent years, despite many ATCPs recognising that further actions are needed. The ATCM, in cooperation with other Antarctic Treaty System bodies, has a clear opportunity to continue its legacy in preserving and conserving Antarctica’s ecologically important and pristine areas, and realise the Protocol’s vision of a protected, thriving Antarctic. ASOC recommends that ATCPs renew their commitment to implementing the principles of the Protocol and thus ensure that the next thirty years of the Protocol are even more successful than the first thirty.

Introduction

In 2021, the Antarctic Treaty System celebrates the thirtieth anniversary of the adoption of the Protocol on Environmental Protection to the Antarctic Treaty, otherwise referred to as Madrid Protocol. The Protocol has long been recognised as one of the most significant international environmental treaties ever signed. However, much has changed since the Protocol was signed. The crises of climate change and biodiversity loss now threaten the whole planet, including Antarctica. The current system of international governance, which divides authority over regions, activities, and environmental issues among a multitude of organisations and treaties, seems increasingly inadequate to address challenges that require global cooperation and comprehensive solutions.

Nevertheless, the ATCM can still do its part to increase the resilience of Antarctic ecosystems, and the Protocol contains many of the tools necessary to do so. The Protocol recognises the link between environmental/ecosystem protection, scientific research, and global climate change. Given the state of the global environment and the global environmental agenda, future action by ATCPs needs to be directed at acting on and reinforcing these links. What is needed now and in the next thirty years is a renewed commitment from ATCPs to taking precautionary action to protect the Antarctic environment and dependent and associated ecosystems, using all the tools available to them. Deciding to abandon CRAMRA in favour of the Protocol was not an easy choice; however, it was the best choice. Likewise, dramatically increasing the implementation of the Protocol today will not be easy. But it is the best option ATCPs have if they want to fulfil their obligations and ensure the continued effectiveness of the Antarctic Treaty System. In this paper, ASOC will review the implementation of the Protocol and suggest some of the new measures the ATCM could take to ensure that the ATS will still have reason to celebrate the Protocol in thirty years’ time.

Protected areas

Annex V on Area Protection and Area Management is one of the most important annexes of the Protocol. Its provision that “Parties shall seek to identify, within a systematic environmental-geographical framework, and to include in the series of Antarctic Specially Protected Areas” areas that meet a variety of scientific, environmental, and historical criteria was ahead of its time. This explains in part why its adoption and entry into force was delayed with respect to the Protocol and Annexes I-IV. However, once adopted, Annex V complemented them with essential protection tools applicable to a broad range of purposes both on land and marine areas. Currently, of course, numerous targets and commitments related to area protection with a similar purpose have emerged from civil society, national governments, and international organisations such as the Convention on Biological Diversity. Unfortunately, despite the clear mandate of Annex V, ATCPs have not achieved anything close to a “systematic environmental-geographic framework” according to scientific analyses (Shaw et al. 2014; Wauchope et al. 2019). Meanwhile, the human footprint on Antarctica has been shown to be quite significant (Brooks et al. 2019).

Much of the background scientific work needed to rectify this situation has already been done. Antarctic Conservation Biogeographic Regions (ACBRs) have already been identified, as have Environmental Domains, both of which qualify as systematic environmental-geographical frameworks. In 2019, the Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System was held prior to the ATCM. The workshop recommended that “the CEP initiates a program of work…to develop a framework for systematically developing the protected area system” (ATCM XLII/IP 165). The ATCM should act on this recommendation immediately.

Key actions for the ATCM:

* Commit to designating 30% of Antarctica’s ACBRs in protected areas by 2030, in line with a growing body of evidence that a minimum 30% target is the most effective (Woodley et al. 2019).
* Support the CEP and SCAR in undertaking a systematic conservation planning process (SCP) to identify new areas for protection; and support the work of CCAMLR on the adoption of Marine Protected Areas (MPAs) and their connectivity with Protocol specially protected and managed areas.
* Review the management plan process to identify potential opportunities to make the development and review of management plans more efficient while still meeting Annex V requirements.

Climate change

Anthropogenic climate change not only threatens Antarctica, but also the values that ATCPs pledged to uphold in the Madrid Protocol. Antarctic scientists have made great strides in growing our understanding of key climate questions, such as the fate of the West Antarctic Ice Sheet, the warming of the Antarctic Peninsula, and changes in Southern Ocean circulation and ecosystems (Turner et al., 2014). Because of their work, we understand how Antarctica is threatened by climate change, and how Antarctica’s climatic changes will impact global environments, economies, and societies.

The policy response of ATCPs has been inadequate. The Climate Change Response Work Programme is in a checklist of tasks, often organized around research, rather than a coordinated response program. There is a profound lack of attention to climate action and resilience of human infrastructure and Antarctic ecosystems. The ATCM should work to complete the CCRWP while also implementing appropriate policy responses, including calling on Parties to fund needed initiatives, and significantly increase the scope of ambition to the scale needed to respond to the climate crisis.

What does increasing Antarctic climate ambition look like? First, the Parties can use the tools that already exist to create a robust response to implementing climate resilience zones through area protection, both marine and terrestrial, with additional benefits for scientific research.

Second, the Paris Agreement makes clear that all parts of the world, even those with low carbon emissions, should take immediate action to mitigate climate change. The Antarctic region is unique in that it stands outside national jurisdiction, meaning that carbon emissions are not accounted for in standard practice. To rectify this Antarctic emissions gap, the CCRWP should add holistic carbon accounting in the Antarctic with the goal of cutting Antarctic emissions in half by 2030 and reaching net zero carbon emissions by 2050.

Key actions for the ATCM**:**

* Use the environmental management tools at hand, particularly area protection, to support climate resilience for Antarctic species and ecosystems and to facilitate research, in particular research essential to understanding the global environment.
* Account for carbon emissions in the Antarctic, including aviation and shipping to and from the continent. This accounting, then, should lead to a concerted effort among ATCPs to reduce carbon emissions to the goal of net zero Antarctic emissions by 2050.
* Complete all standing items of the CCRWP by 2025 and increase ambition for the plan in the coming decades.

Tourism

Antarctic tourism began to expand significantly in the late 1980s and early 1990s, coincident with Protocol negotiations. It was soon apparent that tourism developments required the expansion of the regulatory regime, eventually carried out ad hoc. Antarctic shipborne tourism began a renewed expansion in recent years led by the commissioning of many new cruise ships. Other modalities of tourism have been expanding too, involving fewer tourists but a broader range of means of transport, activities and locations. These developments led to concerns about the impact of tourism growth on the existing regulatory regime (ASOC 2019) and the possibility that Antarctica might had been on the verge of experiencing its own version of “overtourism” in some locations and at some times (Roura 2019). In response to these trends a workshop convened by the Netherlands and the UK in 2019 proposed several actions to address growth, diversification and compliance of Antarctic tourism (Netherlands and United Kingdom 2019). In parallel the tourism industry conducted internal discussions to identify ways to manage growth (IAATO 2019).

The apparently unavoidable trend of Antarctic tourism growth came to an abrupt end in the 2019-2020 season (itself a particularly active season) when the global COVID-19 pandemic was declared.[[1]](#footnote-1) There were no commercial SOLAS tour ships in Antarctica in the 2020-2021 season. Although it is expected that Antarctic tourism will eventually rebound, the “Pandemic Pause” gives Antarctic Treaty Parties the opportunity to establish robust precautionary measures that will shape future tourism developments.

Tourism has been one of the most discussed topics at the ATCM over the past three decades, but many discussions have been inconclusive (ASOC 2018). In ASOC’s view it would be more productive if the ATCM focused on identifying tangible actions to reduce tourism pressure. Borrowing from the expanding terminology of the pandemic, a “flattening of the curve” of tourism pressures could be a helpful analogy to develop ways of “building back better”.[[2]](#footnote-2)

Several ongoing initiatives are concrete positive steps. These include *inter alia*, the SCAR and IAATO Strategic Conservation Planning process for the Antarctic Peninsula, and a range of formal and informal intersessional discussions emerging from recommendations of the 2019 Rotterdam workshop.[[3]](#footnote-3)

Key actions for the ATCM:

* As well as expanding the protection of unique and sensitive areas for a range of purposes, Parties should proactively identify areas of representative habitat/biodiversity in the Antarctic Peninsula (and elsewhere as required) that are kept free of tourism. Some of these areas could be used as reference areas for the study of tourism impacts or for other purposes, including resilience building.[[4]](#footnote-4)
* Parties should establish an environmental monitoring program targeted to the management of tourism. This program should be conceptually robust to provide the answers that are needed, and practically achievable given logistic and resource constraints.
* Parties, in consultation with the industry and other stakeholders, should incorporate forms of “slow tourism” in the planning and conducting of Antarctic tourism activities. “Slow tourism” and its related term “slow travel” are not fully conceptualized, particularly for Antarctica, but suggest integrating a slowing down of tourism trends in the regulatory and operational frameworks for tourism, as well as in the expectations of tourists (Roura in prep.). These might include, for instance, fewer but “better” tourist landings that encourage a less hectic tourism experience.

These precautionary actions do not exhaust the range of measures needed to improve Antarctic tourism management in the future (for instance, Parties should ensure that adopted tourism Measures not yet in force, such as M4 (2004) and M15 (2009), become effective as soon as possible) but are among the actions that would be best initiated before tourism activities resume.

Vessel pollution and the Polar Code

Since the Madrid Protocol was adopted 30 years ago, the numbers of vessels and people operating in the Southern Ocean has grown as travel to Antarctica and the Southern Ocean has become increasingly possible, as more countries have declared and followed through on their intent to undertake Antarctic research programmes, and as fisheries have expanded. In recent years, more ships and larger ships are visiting the region and are able to lengthen their programmes as sea ice recedes earlier and reforms later. Areas never navigated are now becoming accessible.

Annex IV of the Protocol set a high standard for the prevention of marine pollution from international shipping, and a decade ago, a ban on the use and carriage of heavy grade oil in the Antarctic area was adopted by the International Maritime Organization (IMO), giving the waters south of 60ºS a greater level of protection from shipping marine pollution than any other region of the world. In 2017, the Polar Code came into effect strengthening both safety and pollution prevention measures for the polar regions.

Thirty years on however, there is still more to address. In many ways, the ATS has set a high standard for others to follow, but now it is falling behind and in need of review and revamp. There are new issues to be addressed – both globally and in the context of the waters south of 60ºS. Globally one focus is on the decarbonisation of shipping and reducing emissions of short-lived climate forcers such as black carbon, produced when ships burn oil-based fuels. Black carbon is a major threat when emitted near to snow and ice as it deposits quickly out of the atmosphere onto snow and ice and speeds up melting. Over short time periods the impact of black carbon is especially severe. New issues are emerging too. Increasingly the impact of underwater noise on marine wildlife and the complete lack of regulation of the discharge of grey water (galleys, washrooms) is recognised. And there are existing issues which still require time and attention and effort to get them right – the implementation of the Polar Code and a means of comprehensively addressing marine plastic litter.

Key actions for the ATCM:

* Review implementation of the Polar Code in the Antarctic region and contribute to global efforts to review the implementation of the Polar Code, including expanding the scope of Part II A on environmental protection.
* Identify options and adopt measures to rapidly reduce black carbon emissions from shipping in the Southern Ocean and set out a strategy to decarbonise shipping visiting the region.
* Review and revamp Annex IV of the Madrid Protocol, addressing global and emerging issues of significance to the Southern Ocean and establishing fit-for-purpose measures.

The future and the principles of the Protocol

While the concept of global environmental conservation is not new, its current prominent place on the world stage is novel. For decades, ecologists, climatologists, and conservationists have understood that ecosystems are at risk when business continues as usual. Still, there remains an urgent need to protect those places that do not yet have a large human footprint. When the now-famous ‘hockey stick’ graph showing the rapid increase in the planet’s average temperature was introduced in the late 1990s, it conclusively demonstrated how rapidly humans were changing our world and not the other way around, as had been the case for millions of years (Mann et al. 1999). Thanks to Antarctica, and the extremely deep ice cores retrieved from its vast ice sheets, we can now appreciate how quickly we are altering the world in which we live (Legrand and Mayewski 1997).

Recent studies have concluded that only 5% of the planet remains in its pristine state, that is, not changed by humans to accommodate our growing food, energy or housing needs (Kennedy et al. 2019). But we do not often realize how much the negative impacts outweigh the benefits of changing land uses, overfishing marine ecosystems, clearing ancient forest or creating grazing lands when it comes to ecosystem services or mitigating the effects of climate change. That is why a variety of global efforts aimed at environmental conservation, such as the 30x30 campaign to create marine protected areas (MPAs)[[5]](#footnote-5), the development of SDGs, and the investment of private capital into Environmental, Social, and Corporate Governance (ESG) markets have garnered considerable support and attention in recent years. A parallel discussion on expanding marine protection has been taking place in the context of implementing the objective of the Convention on the Conservation of Antarctic Marine Living Resources and its Commission, with some progress, many delays, and a growing momentum. It is clear that the world is increasingly accepting of the need to broadly apply strong conservation principles that are fundamentally equivalent to those embodied in the Protocol (and other Antarctic Treaty System instruments) to the entire planet.

Thirty years ago, when the Madrid Protocol designated Antarctic environment as a natural reserve, required an environmental assessment for most activities together with a range of environmental management practices, and created a Committee for Environmental Protection, it was a tacit recognition that early action was required to prevent the degradation that often happens when humans encounter a relatively untouched area. That recognition of the need to take a proactive approach to preserving Antarctica’s environment demonstrated foresight and leadership. Today, more than ever, we are acknowledging our past environmental mistakes while attempting to conserve – or rescue – the environment for future generations, and for its own intrinsic value. The ATCM, in cooperation with other Antarctic Treaty System bodies, has a clear opportunity to continue its legacy in preserving and conserving Antarctica’s ecologically important and pristine areas, and realise the Protocol’s vision of a protected, thriving Antarctic. The way from here should only be towards more and better conservation, and this applies to Antarctica and to the rest of the planet.

Key actions for the ATCM:

* Reaffirm Antarctica’s natural reserve designation and the ATCM’s commitment to the comprehensive protection of the Antarctic environment and dependent and associated ecosystems.
* Increase area protection in Antarctica to truly create a region permanently protected from environmental degradation.
* Reaffirm the permanent ban on mineral resource activities including any form of mining and minerals extraction.

References

ASOC 2018. Anticipated growth of Antarctic tourism. ATCM XLI - CEP XXI (2018). IP061.

ASOC 2019. Antarctic tourism: Using lessons learned to inform effective, proactive management. ATCM XLII – CEP XXII . IP128.

Australia, Czechia, SCAR, and the United States (2019) Co-conveners’ report of the Joint SCAR / CEP Workshop on Further Developing the Antarctic Protected Area System. ATCM XLII/IP 165.

IAATO 2019. IAATO Overview of Antarctic Tourism: 2018-19 Season and Preliminary Estimates for 2019-20 Season. ATCM XLII – CEP XXII . IP140 rev.1.

IAATO 2021. Oral presentation during informal discussions on the future of post-pandemic Antarctic Tourism, convened by the UK and Netherlands and held online on Thursday 4th March 2021.

Kennedy, CM, Oakleaf, JR, Theobald, DM, Baruch‐Mordo, S, Kiesecker, J. (2019) Managing the middle: A shift in conservation priorities based on the global human modification gradient. Global Change Biology; 25: 811– 826. <https://doi.org/10.1111/gcb.14549>

Legrand, M., and Mayewski, P. (1997) Glaciochemistry of polar ice cores: A review, Reviews of Geophysics*.*, 35(3), 219– 243, doi:10.1029/96RG03527.

Mann, M., Bradley, R. and Hughes, M. (1999) Northern hemisphere temperatures during the past millennium: Inferences, uncertainties, and limitations. Geophysical Research Letters. 26. 759-762. 10.1029/1999GL900070.

Netherlands and United Kingdom. 2019, Antarctic Tourism Workshop, 3-5 April in Rotterdam, The Netherlands: Chair’s Summary and Key Recommendations. ATCM XLII – CEP XXII WP019

Roura RM 2019. Antarctic tourism and overtourism. Antarctic Affairs Volume VI, 2019 / Year V pp. 7-18

Shaw JD, Terauds A, Riddle MJ, Possingham HP, Chown SL (2014) Antarctica’s Protected Areas Are Inadequate, Unrepresentative, and at Risk. PLoS Biol 12(6): e1001888. <https://doi.org/10.1371/journal.pbio.1001888>

Turner, J., Barrand, N.E., Bracegirdle, T.J., Convey, P., Hodgson, D.A., Jarvis, M., Jenkins, A., Marshall, G., Meredith, M.P., Roscoe, H. and Shanklin, J., 2014. Antarctic climate change and the environment: an update. Polar Record, 50(3), pp.237-259.

Wauchope, H, Shaw, JD & Terauds, A. (2019) A snapshot of biodiversity protection in Antarctica. Nat Commun 10, 946. <https://doi.org/10.1038/s41467-019-08915-6>

Woodley S, Locke H, Laffoley D, MacKinnon K, Sandwith, T and Smart, J. (2019). A Review Of Evidence For Area‐Based Conservation Targets For The Post‐2020 Global Biodiversity Framework. Parks 25 (2): 31-46. DOI: 10.2305/IUCN.CH.2019.PARKS-25-2SW2.en

1. There was an increase of cruise tourism of ca. 32% visitors between 2018-2019 and 2019-2020 as well as seasonal increases of deep field and air operations of ca. 15%. (IAATO 2021). [↑](#footnote-ref-1)
2. The notion of “building back better” was a common thread through informal discussions on Antarctic tourism convened by the Netherlands and the United Kingdom, 4 March 2021. [↑](#footnote-ref-2)
3. The latter include addressing guidance for Antarctic visitors, voluntary on-board observer operational framework for tourist vessels, Post-Visit Reports, the compilation of Manual of Regulations and Guidelines Relevant to Tourism and NG Activities, assessments of site sensitivity, and assessment of concerning activities and diversification. [↑](#footnote-ref-3)
4. Setting aside biodiversity areas is also a potential outcome of the strategic conservation process for the Antarctic Peninsula. [↑](#footnote-ref-4)
5. https://mission-blue.org/2021/03/why-ocean-health-is-central-to-building-back-better-post-covid-19/ [↑](#footnote-ref-5)